Welcome

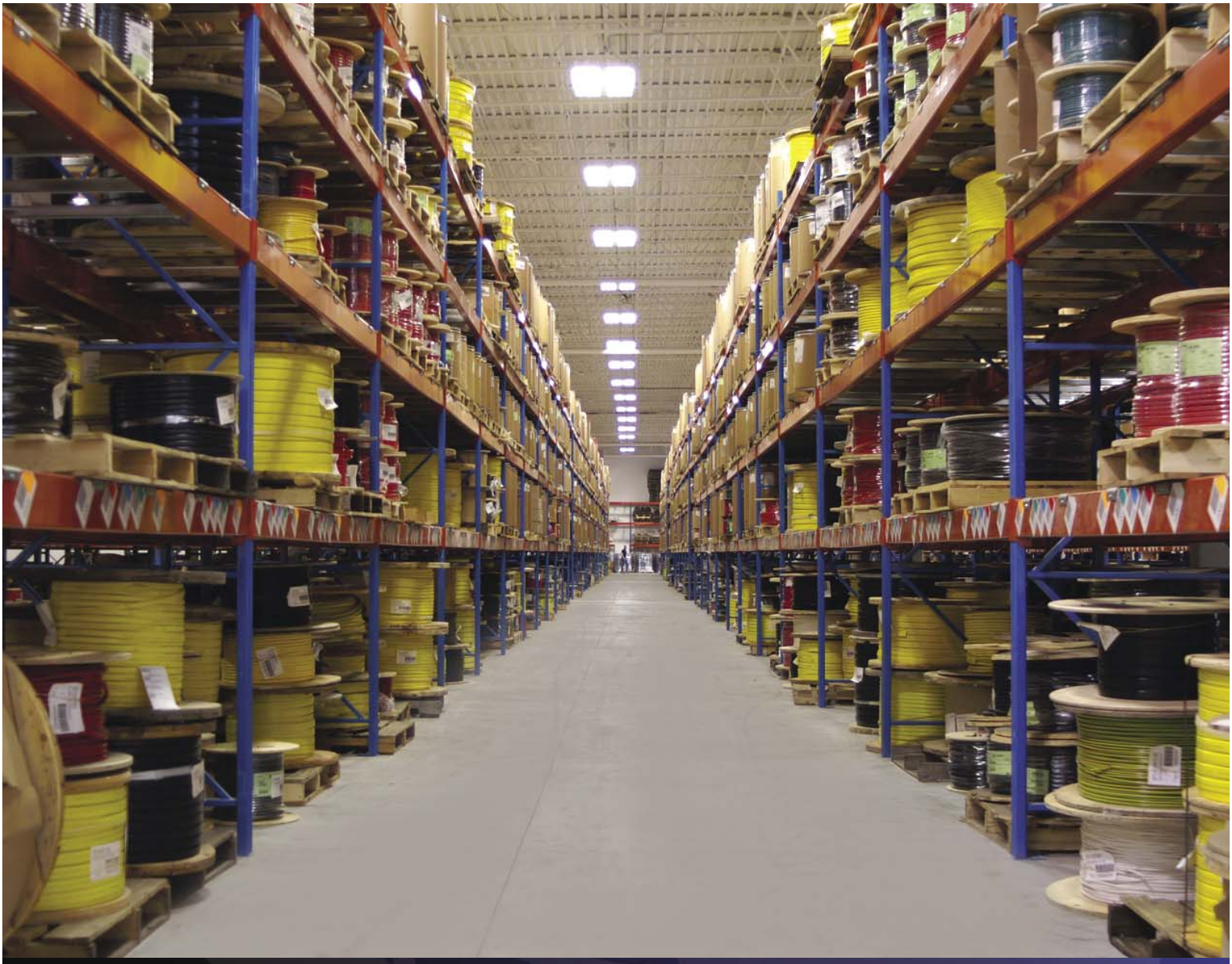
to Personalized and Excellent Service

WORLD CLASS
WIRE & CABLE, INC.

Your Value-added Manufacturer

with the Services and Response

of a Just-In-Time Distributor



World Class Wire & Cable, Inc.
W234 N2091 Ridgeview Parkway Ct.
Waukesha, WI 53188-1023
Phone: 262-951-7777
Purchasing/Acct Fax: 262-951-7704
Sales Fax: 262-951-7778
On the Web: www.wcwc.com

History and Philosophy

World Class Wire and Cable, Inc. (WCWC) was started by James M. Lindenberg in 1994. It was incorporated that year and headquartered in West Allis (a suburb of Milwaukee), Wisconsin for five years. AS WCWC experienced double-digit growth in both sales and employees, it became necessary to relocate to a larger building in 1999, which was in New Berlin, Wisconsin. With continued success, WCWC needed to make its most recent move in 2005 to Waukesha, Wisconsin; a building twice the size of the last with double the production capability. In addition, WCWC has had the honor of winning numerous awards due to its continuing sales growth and accomplishments.

Jim was employed for thirteen years at a major national wire distributor, and was uniquely integral to its growth and success. He gained valuable experience in purchasing, sales and management, and acquired extensive knowledge of the wire and cable industry, including manufacturers, distributors, and the marketplace. Jim's partiality to sales and marketing is evidenced in that he has the distinction of being the 15th person worldwide to obtain both CSE (Certified Sales Executive) and CME (Certified Marketing Executive). Jim's high level of entrepreneurial skills recognized a need for a value-added manufacturer that could offer the service and response of a just-in-time distributor with competitive prices. He began the arduous, but rewarding task of becoming a master supplier specializing in automotive and UL wire and cable for distributors and selected wire harness manufacturers.

The substantial growth of the company proves that WCWC's brand of customer service and product mix are in strong demand. Employees, resources, and other products have been added prudently and selectively. We have taken great care to assure that our associates understand and practice our business and daily philosophies. We encourage, promote, and solicit customer and supplier input for our continued improvement and expansion. Our goal of total customer satisfaction is paramount – we expect it and you deserve it! This is evidenced by our mission statement:

"World Class Wire and Cable, Inc. will act as a liaison for our customers in the selection of products best suited for their use, and will maintain inventory of such products to satisfy their needs. We must and will fulfill this trust effectively and efficiently to justify our position in the marketplace as we provide real value in terms of service, quality, and savings to our customers."

Consider WCWC for your wire and cable requirements. You will experience the same courtesy and response our customers have come to expect from a "World Class" Wire and Cable Company.

Some of the more common benefits and services offered by World Class Wire & Cable, Inc....

- A customer and service oriented president/owner with friendly and helpful employees.
- Bar coding capabilities.
- Custom stocking programs available.
- Drums, DRUMBOXES®, and reel packaging for the majority of inventory.
- Drum packing capabilities for dyed, topcoated, hot-stamped, striped and printed wire.
- Dyeing and topcoating of wire.
- Extended terms may be negotiated for special situations.
- Extensive product and sourcing capabilities for "one stop shopping."
- Friendly people answering your call, voice mail option available for your convenience.
- High quality products, competitive pricing, reliable services and long term relationships.
- UL & CSA respooling approval.
- Hot stamp printing in black and white.
- Ink jet printing in black and white.
- Internet access: wcwc.com
- JIT programs.
- Large AWG longitudinal stripes (#6 – 500 MCM).
- Open extended hours with staffing capable of working 3 shifts and weekends.
- Quick turnaround on printing, striping, dyeing, topcoating, respooling and drum packaging.
- Ring banding on wire.
- Bonding of wire.
- Same day shipment on stocked items.
- Spiral striping done in 1, 2 or 3 colors, and longitudinal stripes done in 1or 2 colors.
- Twisting of wire.
- World Class Web Connect, which allows for customer specific web-based J.I.T. inventory control.

Don't you want to reduce your
Total Cost of Procurement?
World Class Wire & Cable,
a stocking, value-added manufacturer
with the services and benefits of a distributor,
is the answer!

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At WCWC, we're proud of our accomplishments and awards.

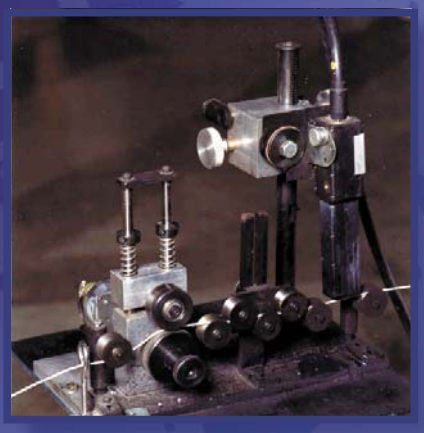
- Jim Lindenberg, founder and president of WCWC, has the distinction of being the 15th person worldwide to obtain both CSE (Certified Sales Executive) and CME (Certified Marketing Executive).
- World Class Wire and Cable won the Future 50 Award in 1998 for being 1 of 50 fastest growing companies in Southeastern Wisconsin in sales & number of employees.
- World Class Wire and Cable won the Future 50 Award for the second time in 1999.
- World Class Wire and Cable won the Master Mettle Award for 2000 for winning the Future 50 Award for the third time in a row.
- World Class Wire and Cable was honored by the Nations Business Magazine with the Blue Chip Award. It is awarded to companies that have overcome obstacles and great odds and have succeeded. WCWC was one out of only four Wisconsin companies to win the Blue Chip Award.
- World Class Wire and Cable named to the 2000 Fast Track Wisconsin list of privately-held companies who have generated significant growth in recent years.
- World Class Wire and Cable was registered by the United States Patent and Trademark office in 2002 for our special packaging option under the name "DRUMBOX–".
- World Class Wire & Cable was honored by New Berlin Economic Development Corporation for Outstanding Leadership in Economic Development in April 2001.
- World Class Wire and Cable was named to the 2001 Fast Track Wisconsin list of privately-held companies who have generated significant growth in recent years.
- Jim Lindenberg, founder and president of World Class Wire and Cable, Inc., was named New Berlin 2003 Citizen of the Year.
- Jim Lindenberg was named the 2003 Hero at Home by the Southwest-Midwest CNI Newspapers.
- Jim Lindenberg was selected by the U.S. Small Business Administration as Wisconsin's 2004 Runner-up Small Business Person of the Year.
- Jim Lindenberg was selected by the U.S. Small Business Administration as Wisconsin's 2005 Small Business Person of the Year.
- Jim Lindenberg was named a 2005 Bravo! Entrepreneur by the Small Business Times.
- Jim Lindenberg was selected as a finalist for the 2005 Wisconsin Ernst & Young Entrepreneur of the Year.
- World Class Wire & Cable was selected as a 2005 Beyond the Paycheck award winner by The Business Journal.
- World Class Wire & Cable was selected as a Beyond the Paycheck award winner by The Business Journal in 2005.
- World Class Wire & Cable was chosen as a Mid-Market Growth Award recipient by the Business Journal in 2005.
- Jim Lindenberg was presented a special award called Financial Risk Taking by the Wisconsin Family Business of the Year in 2006.
- World Class Wire and Cable was selected to the 2006 class of Top 10 Small Business award winners by the Small Business Times.
- Jim Lindenberg was selected as a winner: Best of Wisconsin and finalist for the Lake Michigan Area Ernst & Young Entrepreneur of the Year Award in 2006.
- World Class Wire and Cable was selected to the 2007 class of Top 10 Small Business award winners by the Small Business Times.
- Jim Lindenberg was selected as a winner for both Best of Wisconsin and Best of Lake Michigan Area Ernst & Young Entrepreneur of the Year in 2007.
- World Class Wire and Cable was awarded the Waukesha Country Executive Award for Waukesha County Business of the Year in 2007.
- World Class Wire and Cable was named one of the Top 5,000 businesses in the United States by Inc. 500 Magazine in 2007.
- World Class Wire and Cable was named by Deloitte and Touche as one of the Top 75 Businesses in Wisconsin in 2007.
- World Class Wire & Cable, Inc. was chosen as a Mid-Market Growth Award recipient by the Business Journal in 2007.
- World Class Wire & Cable, Inc. was given an Innovative Quotient Award by Small Business Times in 2008 for its DRUMBOX® wire winding system.
- Jim Lindenberg was honored as one of the 100 Faces for 100 Years By the National Association of Electrical Distributors in 2008.

Take a look at what you'll

Dyeing, Topcoating, & Striping

- Can single, double, or triple spiral stripe #24 - #6.
- Can single or double longitudinal stripe #24 - #6.
- Can single longitudinal stripe #6 and larger.
- Can dye PVC #26 - #6.
- Can topcoat XLP #22 - #6.
- Can print with print wheels #22 - #6.
- Can ring band and hash mark #26 - #14.
- Can stripe Teflon.

Ink Jet Printing



- Prints in black and white.
- Can ink jet #24 - #2 with no limit on the number of characters.
- Spacing 1/2″ to unlimited.
- Character sizes are 1/16″ - 3/4″.

Tulsa

- Can respool to plastic spools, wooden reels, or coils.

Hot Stamping

- Can hot stamp #20 - #12 up to 20 characters.
- Spacing 2″ - 4″, 4″ unless specified differently.
- Black or white character sizes are 1/4″.

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find in our warehouse...

Drum Packing

- Can drum pack #26 - #8 with the quantity you need in the drum size you desire.
- Can drum pack in striping, dyeing, topcoating, printing, and respooling areas.

Respooling

- Can respool to plastic spools or wooden reels.
- Our respooling process is UL/CSA approved.
- Refer to spool/reel chart for various sizes.

Bonding and Twisting

Twisting
- Can twist 2,3,4 conductors.
- Can accept gauges #30 to #12.
- Lay range can be from 1/4" to 4"

Bonding
- Can bond 2,3,4 conductors.
- Can accept gauges #2 to #10.
- Can bond 5,6,7 conductors in some products.

DRUMBOX®

- Can package #20 - #10 in our patented DRUMBOX® (shippable by UPS).

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Why you should consider World Class Wire & Cable, Inc. as your wire supplier...

World Class Wire and Cable is a stocking value added manufacturer and exporter of electrical/electronic wire, cable and tubing, offering the services, benefits and quick response of a Just-In-Time distributor.

WCWC buys wire items in high volume, has great partnerships with the top wire manufacturers, and has been able to negotiate great costs and terms, and therefore is able to offer competitive prices to you, the customer.

Expect savings of 10% to 40% in your wire and cable procurement costs by partnering with WCWC.

Our value added services include ink jet printing, hot stamping, twisting, drum packing, DRUMBOXES®, UL & CSA respooling, coiling, striping, dyeing, topcoating, ship to stock, repackaging, bar-coding, sourcing and just in time stocking programs. Our lead time and customer service are second to none.

Your total cost of procurement cost (TCOP) will be less with WCWC. With us sourcing all your wire and cable needs, you will reduce your activity and streamline your procurement process. This allows you to reduce the number of wire vendors and number of transactions. You can reduce costs and allow the buyer to concentrate on other tasks. WCWC will maintain a safety stock or back up stock to free up your valuable plant space.

We are the wire experts. Let our product knowledge work for you. Our JIT programs include not only sourcing, but also data processing, quality control, packaging, and delivery systems for your benefit. You can increase or reduce quantities, pull in or push out dates to meet your individual wire needs.

Product standardization by WCWC offers many benefits. It reduces inventory, reduces lead-times, reduces vendor base, reduces hassle, reduces parts, insures less stock outs, makes the bill of material more manageable, yields better raw material prices, and increases flexibility.

In conclusion, when considering wire suppliers, you must look at the total cost of procurement. World Class Wire & Cable, Inc. wants to be a strong, yet flexible link in your supply chain, as we are with all our customers. Partnering with WCWC is a smart, strategic business decision. This World Class link contributes to your company's improved productivity, on-time customer deliveries, reduced inventory investment, increased working capital, improved cash flow and maximum profitability. Why not let WCWC quote or handle your wire, cable, tubing or loom needs?

TCOP reduces or eliminates:

- ☆**Carrying cost**
- ☆**Delivery time**
- ☆**Expediting**
- ☆**Factory minimums**
- ☆**Floor space for inventory**
- ☆**Freight costs**
- ☆**Insurance costs**
- ☆**Inventory**
- ☆**Inventory taxes**
- ☆**Lead times**
- ☆**Multiple vendors**
- ☆**Number of purchase orders**
- ☆**Ordering**
- ☆**Paperwork**
- ☆**Purchase time**
- ☆**Premium freight costs**
- ☆**Quality assurance costs**
- ☆**Quoting**
- ☆**Racking costs**
- ☆**Receiving time**
- ☆**Stock outages**

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Common Wire & Cable Items Stocked

1007/1569 LEAD WIRE
Our 1007/1569 lead wire is UL style 1007 and 1569, CSA TR64, 300 volts, 80C/105C, and VW-1. 1007/1569 is primarily used for internal wiring of appliances and electronic equipment. Most constructions are also rated MIL-16878 Type C.

1015/1032/1230 MTW/TEW LEAD WIRE
Our machine tool wire and thermoplastic equipment wire is UL style 1015, 1032 and 1230, CSA type TEW, 600 volts, 105C, and VW-1. 1032 is 1000 volts. 1015/1032/1230 bare copper is primarily used for internal wiring of appliances or machine tools. 1015/1032/1230 tinned copper is primarily used in appliances, ballasts, controls, electronic circuits, hookups, motors, panels, switchboards, and transformers.

1028,1231, 1232, 1283, 1284 LEAD WIRE
Our large machine tool wire and thermoplastic equipment wire (#6 – 500 MCM) has multiple UL approvals, CSA type TEW, 600 volts, 105C, and VW-1, and battery and boat cable approvals. Offered in extra flexible 30 AWG. stranding and in standard 19 strands. Our large MTW/TEW is used for control cabinets, internal wiring of appliances, machine tools, motors, panels, switchboards, and transformers.

1061 LEAD WIRE
Our 1061 is UL style 1061 and CSA type SR-PVC/AWM, 300 volts, and 80C. UL1061 lead wire is primarily used for wiring of electronic equipment. Most constructions are also rated MIL-16878 Type B.

1275/1056, 1276/1060 LEAD WIRE
Our heavy wall lead, hookup wire, and refrigeration wire is UL 1275/1056 or UL 1276/1060, CSA type 105C TEW/AWM, 600 volts, and VW-1. Our heavy wall PVC wire is used in appliances, equipment ballasts, controls, electronic circuits, hookups, motors, panels, switchboards, transformers, refrigeration equipment, and room cooler units.

1659 LEAD WIRE
Our 1659/CSA Class 1 group A/B FT 1 is Polytetrafluoroethylene (PTFE), 250C, 600 volts. 1659 is primarily used in internal wiring of electronic equipment and appliances. PTFE lead wires have a low coefficient of friction which promotes easy handling, resists hot soldering irons, is self-extinguishing, non-flammable, has excellent chemical resistance, and is suitable for immersion in gasoline or gasoline vapor.

10086 LEAD WIRE
Our 10086/CSA, Class 1, group A/B is tefzel extruded (ETFE), 200C, 600 volts. 10086 can be used in internal wiring of electrical equipment and UL classified appliance wiring service up to 200C.

3173 LEAD WIRE
Our chemically cross-linked polyethylene (XLP) lead wire is UL style 3173 and CSA type CL1251, SIS, 600 volts, and 125C. 3173 is primarily used for appliances, coil leads, switchboard panels, transformers, motor leads and power operated dispensing units.

3239/10475, AND 3257
Our braidless silicone rubber high-voltage and high temperature appliance lead wires are UL3239/10475, and UL3257. 3239 /10475 is rated 15KV, 25KV, and 40KV and is 150C. 3257 is 10KV and 25KVDC and is 250C. This wire can be used in high voltage and/or high temperature applications such as : gas appliance ignitor systems, oil burner ignition circuits, gas-fired infared heaters, and furnaces where protected from repeated flexing, abrasion, and physical damage.

3289/3271
Our 3289/3271 is UL3289 and UL3271 CSA AWM. It is irradiated cross-linked polymetric insulation 150C/125C and 600 Volts. 3289/3271 is primarily used in electrical motors, coils, transformers, thermal sensors, fax machines, lighting devices, appliances, electronic devices, heaters, thermal protectors, printers, copiers, and switchboards.

3321 LEAD WIRE
Our chemically cross-linked polyethylene (XLP) lead wire is UL style 3321/3305 and CSA type CL1503/AWM, 600 volts, and 150C. 3321 can be used in appliances, transformers, electrical and gas heating, meters,ballast, lighting, hairdressing, and cooking equipment.

BOAT CABLE
Boat cable inner conductors are stranded tinned copper to help resist corrosion. The conductors are color-coded for identification purposes with a white 105C PVC jacket. Meets UL Standard 1426 and UL style BC-5W2. Boat cable is a flat cable used for marine applications.

BONDED GPT AUTOMOTIVE CABLE
Bonded GPT automotive cable, also known as ripcord, is a flat parallel bonded PVC cable, SAE J1128, 80C. The conductors are color-coded for identification purposes. This bonded cable can be used in automotive, truck, trailer, and other low-voltage applications.

BRAKE CABLE
Brake cable inner conductors are stranded bare copper and color-coded for identification purposes with an outer PVC jacket. Brake cable can be used in electric brake and many automotive, truck, or trailer applications.

E/1213/1371, EE/1180
Our type E and type EE is Teflon®. E is -60 to 200C, 600 volts. UL1213 and 1371 is -60 to 105C. EE is also -60 to 200C but 1000 volts. UL1180 is -60 to 200C but 300 volts. Type E and type EE can be used for internal wiring of electrical equipment where exposed to mechanical abuse for high temperature applications in computers, business machines, meters, and electronic equipment.

ELECTRONIC CABLE
Our electronic cables include audio, coaxial, communication, computer cable, data, fiber optic, fire alarm, high temperature, instrumentation, Local Area Network (LAN), plenum cable, sound & security, telephone, and voice.

EPDM MOTOR LEAD WIRE
Our ethylene-propylene diene monomer appliance and motor lead wire is UL style 3340/3374 and CSA listed CL1503/AWM, 600 volts and 125/150C. EPDM is primarily used as appliance wire and as lead wire for motors, transformers, coils, ballasts or solenoids where high temperature is required. A 7500 volt version is also available.

FLAT FESTOON CABLE
Our PVC festoon cable is UL listed, CSA certified, 600 volts, and is rated 105C to –40C. Festoon cable is primarily designed for use with festoon systems for the conveyance of electrical power and to control cranes, hoists, or any equipment where space is at a premium or where extreme flexing is a requirement. Cables are also widely used in convention halls and exhibit centers as under carpet cables for distribution of booth lighting.

GPT AUTOMOTIVE PRIMARY WIRE
GPT is a PVC (polyvinylchloride) automotive primary wire. GPT is SAE J-1128 approved and is rated –40C to 105C. GPT also meets Ford ESB-M1L 56A and Chrysler MS-3450 specifications. Our GPT also meets Ford ESB-M1L 58A 105C (except 22, which is 56A only). GPT is primarily used in automotive or marine applications where 105C is required.

GPTM MARINE PRIMARY WIRE
GPTM is a PVC (polyvinylchloride) marine primary wire. GPTM is SAE-1128 and SAE J-378 approved and is rated –-40C to 105C. This is offered in tinned copper stranding. GPTM can be used in 105C marine applications and other 105C applications.

Common Wire & Cable Items Stocked

GXL AUTOMOTIVE PRIMARY WIRE
GXL is a thin wall XLP (cross-linked polyethylene) automotive primary wire. GXL is SAE J-1128 approved and is rated –40C to 125C. GXL also meets Ford ESB-M1L 85B and Chrysler MS-8900 specifications. GXL is primarily used in automotive applications where higher heat resistance and a small diameter is required.

MIL-W-22759/11
Our Polytetrafluoroethylene (PTFE) Electronic Hook-up Wire is MIL-W-22759/11. It is rated 600 volts and 200C and the conductor stranding is silver plated copper. It can be used for internal wiring of electrical equipment where exposed to mechanical abuse for high temperature applications in computers, business machines, meters and electronic equipment. Resists hot soldering irons.

MIL-W-76D Type MW
Our Medium wall Polyvinylchloride (PVC) is MIL-Spec Wire and rated -40C to 80C, 1000 volts. It can be used for wiring of electronic equipment.

ROUND PENDANT CABLE
Our 16 AWG. yellow round pendant cable comes either with or without two external galvanized steel supports and is available in many conductor counts. It is UL/CSA approved 90C and 600 volts. Our round pendant cable can be used in portable control, festoon systems, pendant stations, power tracks, cranes and hoists, and power carriage systems. It is designed to provide maximum flex-life under the most demanding conditions where flame, chemicals, moisture, and temperature extremes are considerations.

SEOOW/SJEOOW PORTABLE SERVICE CORD
Our portable service cord is UL and CSA listed, 600 volts for SEOOW, and 300 volts for SJEOOW. –50C to 105C. Portable service cord can be used indoors and outdoors and is primarily used for garages, portable lights, battery chargers, stage lights, heavy tools and equipment exposed to oils, water, and acids.

SGT BATTERY CABLE
Our PVC (polyvinylchloride) SGT battery cable is SAE J-1127 approved and is –40C to 105C. SGT is primarily used for automotive starters or battery grounds.

SGX BATTERY CABLE
Our XLP (cross-linked polyethylene) SGX battery cable is SAE J-1127 approved and is –40C to 125C. SGX is primarily used for automotive starters or battery grounds where resistance to abrasion, heat, and aging is needed.

SILICONE RUBBER MOTOR LEAD
SR is a braidless silicone rated 150C and 600 volts. SRML is a fiberglass braided silicone rated 200C and 600 volts. SR and SRML is used for leads to motors, transformers, appliances, electronic, or other electrical circuits where a flexible conductor is required to operate under high temperature conditions and where moisture may be present.

SIS/XHHW-2 SWITCHBOARD WIRE
Our chemically cross-linked polyethylene (XLP) switchboard wire is UL type SIS VW-1 and CSA type SIS FT1, 600 volts, 90C. SIS is primarily used for instrument and control wiring of switchboards, annunciator circuits, and industrial controls.

SLIT CORRUGATED LOOM
Can be used to hold groups of wire in position and provides excellent protection against abrasion, crushing, gasoline, oil, and many chemicals. Meets Ford, Delphi, and Packard Electric specifications.

SOOW/SJOOW PORTABLE SERVICE CORD
Our portable service cord is UL and CSA listed, 600 volts for SOOW, and 300 volts for SJOOW. –40C to 90C. Portable service cord can be used indoors and outdoors and is primarily used for garages, portable lights, battery chargers, stage lights, heavy tools, and equipment exposed to oils, water, and acids.

SPOOLS/REELS/DRUM CONES
We have a full range of plastic spools; wooden reels; 21", 30", and 42" drums; drum cones (drum dereeler).

SPT
Our SPT cable comes in many types, gauges, and conductor counts. SPT is PVC 105C, 300 volts, UL & CSA. It can be used for fans, clocks, lamps, radios, small display signs, and similar appliances where cord is not subject to hard usage.

STOOW/SJTOOW
Our portable service cord is UL listed and CSA certified 600 volts for STOOW, and 300 volts for SJTOOW. Our thermoplastic cord can be used where greater flexibility and resistance to oils, lubricants, and grease is needed. Can be used in machine shops, mills, garages, machine tools, portable power equipment, portable appliances, and polishers.

SXL AUTOMOTIVE PRIMARY WIRE
SXL is a XLP (cross-linked polyethylene) automotive primary wire. SXL is SAE J-1128 approved and is –40C to 125C. SXL also meets Ford ESB-M1L 85A and Chrysler MS-5919. SXL is primarily used in automotive applications where higher heat resistance is required.

TFFN & THHN & TFN BUILDING WIRE
Our TFFN, THHN, and TFN building wire is UL listed, 600 volts, and 90C. TFFN, THHN, and TFN are primarily used for wiring of machine tools, appliances, control circuits, installation in conduit or other raceways, and for new construction.

TRAILER CABLE
Trailer cable inner conductors are stranded copper and color-coded for identification purposes with a PVC jacket. Trailer cable is a round, tough cable used for automotive trailers, trucks, or applications requiring good resistance to abrasion, weather, oil, acid, and grease.

TUBING AND SLEEVING
Heat shrink polyolefin, dual wall heat shrink polyolefin with internal adhesive sealant, heat shrink PVC (polyvinylchloride), and PVC sleeving are some of the common tubing and sleeving items stocked.

TWP AUTOMOTIVE PRIMARY WIRE
TWP is an extra thin wall PVC (polyvinylchloride) automotive primary wire. TWP is SAE J-1128 approved and is –40C to 105C. TWP also meets Ford ESB-M1L 120A and Chrysler MS-7889 specifications. TWP is used primarily in automotive applications where small diameter and minimal weight is required.

TXL AUTOMOTIVE PRIMARY WIRE
TXL is an extra thin wall XLP (cross-linked polyethylene) automotive primary wire. TXL is SAE J-1128 approved and is –40C to 125C. TXL also meets Ford ESB-M1L 123A and Chrysler MS-8288 specifications. TXL is primarily used in automotive applications where higher heat resistance, small diameter, and minimal weight is required.

UNINSULATED
Our uninsulated products include solid bus bar wire, tinned copper flat braids, tinned copper tubular braids, and tinned extra flexible copper rope. Bus bar wire can be used for point to point wiring, component leads, and ground wire. The braids and rope can be used for bonding straps, grounding, or connecting moving parts..

WELDING CABLE
Our welding cable is 600 volts and –50C to 105C. Welding cable is primarily used for automotive starters or battery grounds. Our welding cable has flexible Class K stranding with a high tear strength jacket. It also has excellent resistance to abrasion and impact, and is oil and solvent resistant, with good flame resistance.

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TWP

Automotive Lead Free Thin Wall Polyvinylchloride (PVC) Wire SAE J-1128 (-40 to 105C)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.
TWP22	22	7/30 Bare	0.016	0.062	3
TWP20	20	7/28 Bare	0.016	0.070	5
TWP18	18	19/.0092 Bare	0.016	0.078	7
TWP16	16	19/29 Bare	0.016	0.089	9
TWP14	14	19/27 Bare	0.016	0.103	14
TWP12	12	19/25 Bare	0.018	0.126	22
TWP10	10	19/23 Bare	0.021	0.155	35

- ❑ Can be used in automotive applications where small diameter and minimal weight is required.
- ❑ Meets Ford ESB-M1L 120A and Chrysler MS-7889 specifications.
- ❑ SAE J-1560 was replaced by SAE J-1128 in 1995.
- ❑ We can stripe, print, respool or drum pack to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Light blue	Purple
Dark blue	Light green	Red
Brown	Orange	Tan
Dark green	Pink	White
Gray		Yellow

GPT

Automotive Lead Free Polyvinylchloride (PVC) Wire SAE J-1128 (-40C to 105C)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.
GPT22	22	7/30 Bare	0.023	0.077	4
GPT20	20	7/28 Bare	0.023	0.084	6
GPT18	18	16/30 Bare	0.023	0.092	8
GPT16	16	19/29 Bare	0.023	0.103	11
GPT14	14	19/27 Bare	0.023	0.117	16
GPT12	12	19/25 Bare	0.026	0.142	24
GPT10	10	19/23 Bare	0.031	0.177	41
GPT8	8	19/21 Bare	0.037	0.222	61

- ❑ Can be used in automotive applications for general circuit wiring and automotive or marine applications where 105C is required.
- ❑ Meets Ford ESB-M1L 56A 80C, Ford ESB-M1L 58A 105C, and Chrysler MS-3450 specifications.
- ❑ GPT22 meets Ford ESB-M1L 56A only because Ford ESB-M1L 58A requires .010 insulation instead of normal .023.
- ❑ We can stripe, print, respool, or drum pack to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Light blue	Purple
Dark blue	Light green	Red
Brown	Orange	Tan
Dark green	Pink	White
Gray		Yellow

TXL

Automotive Extra Thin Wall Cross-linked Polyethylene (XLP) Wire SAE J-1128 (-40C to 125C)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.
TXL22	22	7/30 Bare	0.016	0.062	3
TXL20	20	7/28 Bare	0.016	0.070	5
TXL18	18	19/.0092 Bare	0.016	0.078	7
TXL16	16	19/29 Bare	0.016	0.089	9
TXL14	14	19/27 Bare	0.016	0.102	14
TXL12	12	19/25 Bare	0.018	0.127	22
TXL10	10	19/23 Bare	0.020	0.155	35
TXL8	8	19/21 Bare	0.020	0.191	55

- ❑ Can be used in automotive applications where higher heat resistance, small diameter and minimal weight is required.
- ❑ Meets Ford ESB-M1L 123A and Chrysler MS-8288 specifications.
- ❑ SAE J-1560 was replaced by SAE J-1128 in 1995.
- ❑ We can stripe, print, respool or drum pack to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Light blue	Purple
Dark blue	Light green	Red
Brown	Orange	Tan
Dark green	Pink	White
Gray		Yellow

Automotive

GXL

Automotive Thin Wall Cross-linked Polyethylene (XLP) Wire SAE J-1128 (-40C to 125C)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.
GXL20	20	7/28 Bare	0.023	0.086	6
GXL18	18	19/.0092 Bare	0.023	0.094	8
GXL16	16	19/29 Bare	0.023	0.105	12
GXL14	14	19/27 Bare	0.023	0.119	16
GXL12	12	19/25 Bare	0.026	0.145	25
GXL10	10	19/23 Bare	0.031	0.181	39
GXL8	8	19/21 Bare	0.037	0.216	60

- ❑ Can be used in automotive applications where higher heat resistance and small diameter is required.
- ❑ Meets Ford ESB-M1L 85B and Chrysler MS-8900 specifications.
- ❑ We can stripe, print, respool or drum pack to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Light blue	Purple
Dark blue	Light green	Red
Brown	Orange	Tan
Dark green	Pink	White
Gray		Yellow

GXL SAE Spec Printed

Automotive Thin Wall Cross-linked Polyethylene (XLP) Wire SAE J-1128 (-40C to 125C) (RVIA)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.
GXL20/PRT	20	7/28 Bare	0.023	0.086	6
GXL18/PRT	18	19/.0092 Bare	0.023	0.094	8
GXL16/PRT	16	19/29 Bare	0.023	0.103	11
GXL14/PRT	14	19/27 Bare	0.023	0.119	16
GXL12/PRT	12	19/25 Bare	0.026	0.145	25
GXL10/PRT	10	19/23 Bare	0.031	0.181	39
GXL8/PRT	8	19/21 Bare	0.037	0.216	60

- ❑ Can be used in automotive applications where higher heat resistance and small diameter is required.
- ❑ Meets Ford ESB-M1L 85B, Chrysler MS-8900 and Recreatioal Vehicle Industry Association specifications.
- ❑ Print reads, "E (#) SAE ___ AWG GXL (UL)" if from the manufacturer.
- ❑ Print reads, "___ AWG GXL SAE J-1128 125C" if printed from WCWC.
- ❑ We can stripe, print, respool or drum pack to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Light blue	Purple
Dark blue	Light green	Red
Brown	Orange	Tan
Dark green	Pink	White
Gray		Yellow

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SXL

Automotive Cross-linked Polyethylene (XLP) Wire SAE J-1128 (-40C to 125C)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.
SXL20	20	7/28 Bare	0.029	0.096	7
SXL18	18	16/30 Bare	0.030	0.110	10
SXL16	16	19/29 Bare	0.032	0.120	13
SXL14	14	19/27 Bare	0.035	0.139	19
SXL12	12	19/25 Bare	0.037	0.162	27
SXL10	10	19/23 Bare	0.041	0.192	41
SXL8	8	19/21 Bare	0.043	0.234	64

- ❑ Can be used in automotive applications where higher heat resistance is required.
- ❑ Meets Ford ESB-M1L 85A and Chrysler MS-5919 specifications.
- ❑ We can stripe, print, respool or drum pack to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Light blue	Purple
Dark blue	Light green	Red
Brown	Orange	Tan
Dark green	Pink	White
Gray		Yellow

Automotive

STX/SGX Battery Cable

Cross-linked Polyethylene (XLP) (-40 to 125C)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.
STX6	6	133/27 Bare	.043	.282	102
STX4	4	133/.0171 Bare	.044	.331	144
SGX6	6	133/27 Bare	.060	.315	112
SGX4	4	133/.0171 Bare	.065	.374	159
SGX2	2	133/.0220 Bare	.065	.428	241
SGX1	1	259/25 Bare	.065	.460	310
SGX1/0	1/0	1026/30 Bare	.065	.523	369
SGX2/0	2/0	1254/30 Bare	.065	.578	461
SGX3/0	3/0	1615/30 Bare	.078	.654	590
SGX4/0	4/0	2052/30 Bare	.078	.714	745

- ❑ Can be used for automotive starters or battery grounds where resistance to abrasion, heat and aging is needed. Please note our flexible stranding for greater flexibility.
- ❑ Buy standard put-ups for quicker delivery. Respooling and coiling available.
- ❑ Meets SAE J-1127 and RVIA specifications.
- ❑ All sizes stocked in black and red. 6, 4 & 2 stocked in various other colors. Consult your salesperson for availability. Other colors available upon special request.

SGT Battery Cable

Polyvinylchloride (PVC) (-40C to 80C)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.
SGT6	6	49/22.5 Bare	.042	.330	105
SGT4	4	70/22.5 Bare	.045	.380	160
SGT2	2	133/23 Bare	.045	.450	243
SGT1/0	1/0	133/21 Bare	.045	.550	374
SGT2/0	2/0	133/20 Bare	.045	.605	474

- Can be used for automotive starters or battery grounds. Please note our flexible stranding for greater flexibility.
- Meets SAE J-1127 and RVIA specifications.
- Buy standard put-ups for quicker delivery. Respooling and coiling available.
- Stocked in black and red. Other colors available upon special request.

SGT Flexible High Temperature Battery Cable

Polyvinylchloride (PVC) (-40C to 105C)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.
SGT6F	6	133/27 Bare	.060	.301	106
SGT4F	4	133/.0171 Bare	.065	.356	150
SGT2F	2	133/.0220 Bare	.065	.420	236
SGT1F	1	259/25 Bare	.065	.458	293
SGT1/0FF	1/0	1026/30 Bare	.065	.515	362
SGT2/0FF	2/0	1254/30 Bare	.065	.570	453
SGT3/0FF	3/0	1615/30 Bare	.078	.646	581
SGT4/0FF	4/0	2052/30 Bare	.078	.706	737

- Can be used for automotive starters or battery grounds. Please note our flexible stranding for greater flexibility.
- Meets SAE J-1127 and RVIA specifications.
- Buy standard put-ups for quicker delivery. Respooling and coiling available.
- Stocked in black and red. Other colors available upon special request.

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Brake Cable

Flat Jacketed Polyvinylchloride (PVC) Automotive Brake Cable (105C)

WCWC P/N	AWG Size	No. of Conductors	Conductor Stranding	Wall Thickness	Nominal O.D.	Approx. Lbs./Mft.
BRC1802GRY	18	2	16/30 Bare	.023	.150 X .240	33
BRC1602GRY	16	2	19/29 Bare	.023	.162 X .265	36
BRC1603GRY	16	3	19/29 Bare	.023	.162 X .365	66
BRC1604GRY	16	4	19/29 Bare	.023	.195 X .510	77
BRC1402GRY	14	2	19/27 Bare	.023	.180 X .300	40
BRC1403GRY	14	3	19/27 Bare	.023	.180 X .420	75
BRC1404GRY	14	4	19/27 Bare	.023	.210 X .560	92
BRC1202GRY	12	2	19/25 Bare	.026	.210 X .360	71
BRC1203GRY	12	3	19/25 Bare	.026	.210 X .500	99
BRC1204GRY	12	4	19/25 Bare	.026	.240 X .665	140
BRC1002GRY	10	2	19/23 Bare	.031	.235 X .420	113
BRC1003GRY	10	3	19/23 Bare	.031	.235 X .595	144
BRC1004GRY	10	4	19/23 Bare	.031	.250 X .775	185
BRC0802GRY	8	2	19/21 Bare	.037	.290 X .520	180

- Can be used in electric brake, and many automotive, truck or trailer applications.
- Color code: 2 conductor is black, white; 3 conductor is black, green, white; 4 conductor is black, red, green, white.
- Consult your sales person for availability of other color codes and jacket colors.
- Buy standard put-ups for quicker delivery. Respooling and coiling available.

Automotive

Take note!

WCWC accepts both Mastercard and Visa for wire and cable purchases...

Welding Cable

Ethylene-propylene-diene monomer (EPDM) Class K (30 AWG) (600V) (-50 to 105C)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.
WC6	6	266/30 Bare	.060	.305	110
WC4	4	392/30 Bare	.060	.340	152
WC3	3	525/30 Bare	.060	.428	215
WC2	2	651/30 Bare	.060	.420	238
WC1	1	798/30 Bare	.080	.490	304
WC1/0	1/0	1026/30 Bare	.080	.525	378
WC2/0	2/0	1254/30 Bare	.080	.570	454
WC3/0	3/0	1615/30 Bare	.080	.635	571
WC4/0	4/0	2052/30 Bare	.080	.695	710
WC250	250	2451/30 Bare	.125	.875	1029
WC350	350	3458/30 Bare	.125	.998	1372
WC500	500	4921/30 Bare	.125	1.150	1882

- ❑ Can be used for welding equipment, portable lighting, automotive starters or battery ground.
- ❑ High tear strength jacket with excellent resistance to abrasion and impact.
- ❑ Oil and solvent resistant.
- ❑ Superior low temp flexibility with good flame resistance.
- ❑ Weather, ozone and sunlight resistant jacket.
- ❑ Buy standard put-ups for quicker delivery. Respooling and coiling available.
- ❑ Stocked in black. 6 AWG to 4/0 also stocked in red.

Welding Cable - UL

Chlorinated Polyethylene Rubber (CPE) Class K (30 AWG) (-50 to 90C) (600 V)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.
WC6ORNUL	6	266/30 Bare	.080	.364	135
WC4ORNUL	4	420/30 Bare	.080	.414	192
WC2ORNUL	2	665/30 Bare	.080	.482	282
WC1ORNUL	1	833/30 Bare	.080	.522	332
WC1/0ORNUL	1/0	1064/30 Bare	.090	.582	433
WC2/0ORNUL	2/0	1330/30 Bare	.090	.637	528
WC4/0ORNUL	4/0	2109/30 Bare	.090	.747	795

- ❑ Can be used for welding equipment, and power supply applications.
- ❑ High tear strength jacket with excellent resistance to abrasion and impact.
- ❑ Jacket is resistant to ozone, oil, acid, chemical, grease, and sunlight.
- ❑ Superior low temp flexibility.
- ❑ Safety colored for high visibility.
- ❑ Buy standard put-ups for quicker delivery. Respooling and coiling available.
- ❑ Stocked in orange.

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Bonded GPT Automotive Cable (Rip cord)

Flat Parallel Bonded Polyvinylchloride (PVC) Automotive Cable (SAE J-1128) (80C)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Wall Thickness	Nominal O.D.	Approx. Lbs./Mft.
GPT1802	18	2	16/30 Bare	.023	.094 X .188	20
GPT1803	18	3	16/30 Bare	.023	.094 X .282	30
GPT1804	18	4	16/30 Bare	.023	.094 X .376	40
GPT1602	16	2	19/29 Bare	.023	.105 X .210	26
GPT1603	16	3	19/29 Bare	.023	.105 X .315	39
GPT1604	16	4	19/29 Bare	.023	.105 X .420	52
GPT1402	14	2	19/27 Bare	.023	.122 X .244	36
GPT1403	14	3	19/27 Bare	.023	.122 X .366	54
GPT1404	14	4	19/27 Bare	.023	.122 X .488	72
GPT1202	12	2	19/25 Bare	.026	.140 X .280	56
GPT1203	12	3	19/25 Bare	.026	.140 X .420	84
GPT1204	12	4	19/25 Bare	.026	.140 X .560	112

- Can be used in automotive, truck, trailer and other low voltage applications.
- Color code: 2 conductor color code is red, black; 3 conductor is brown, yellow, green; 4 conductor is white, brown, yellow, green.
- Consult your salesperson for availability of other color codes.

Speaker Wire

Clear Polyvinylchloride (PVC) (60C)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Wall Thickness	Nominal O.D.	Approx. Lbs./Mft.
SW2402CLR	24	2	7/32	.016	.055 X .110	8
SW2202CLR	22	2	7/30	.020	.063 X .139	10
SW2002CLR	20	2	10/30	.020	.088 X .180	12
SW1802CLR	18	2	16/30	.023	.096 X .200	19
SW1602CLR	16	2	26/30	.023	.106 X .232	25
SW1402CLR	14	2	41/30	.023	.115 X .240	35
SW1202CLR	12	2	65/30	.023	.145 X .295	52

- Can be used for music systems, radios, public address systems and other low voltage applications.
- Has one bare and one tinned copper conductor.
- Consult your salesperson for availability of other colors.

J-1939 Automotive Data and Communication Cable

Irradiated Cross-linked Polyolefin Controlled Impedance Data-bus Cable

Unshielded - Single Jacket, Black (20AWG: -40C to 125C, 18AWG: -40C to 150C) (J-1939/15)

WCWC P/N	AWG Size	Number of Conductors	Conductor Stranding	Wall Nominal Insulation	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.
1939/2002BLK	20	2	7/28 Bare	.022	.030	209	20
1939/1802BLK	18	2	19/.23mm Bare	.025	.030	.252	22

Shielded - Aluminum/Polyester with Tin Plated Copper Drain Wire, Double Jacket, Black (-40C to 150C) (J-1939/11)

1939/2002SHBLK	20(.5mm^2)	2	19/.18mm Bare	.030	.030	.335	51
1939/1802SHBLK	18	2	19/.23mm Bare	.040	.030	.400	61

Irradiated Cross-linked Foam Polyolefin Controlled Impedance Data-bus Cable (-40C to 125C) (J-1939/11)

Shielded - Aluminum/Polyester with Tin Plated Copper Drain Wire, Single Jacket, Black

WCWC P/N	AWG Size	Number of Conductors	Conductor Stranding	Wall Nominal Insulation	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.
1939/2002SHBLK1	20(.5mm^2)	2	19/.18mm Bare	.036	.030	.291	38
1939/1802SHBLK1	18	2	19.23mm Tinned	.046	.030	.352	45

Foam Polyethylene/PVC Controlled Impedance Data-bus Cable (90C to 105C) (Similar to J-1939/11 - Shielded, Low-Temp Version)

Shielded - Aluminum/Polyester with Tin Plated Copper Drain Wire, Grey Jacket

WCWC P/N	AWG Size	Number of Conductors	Conductor Stranding	Wall Nominal Insulation	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.
1939/2002SHGRYPVC	20	2	7/28 Bare	.032	.022	.243	28

- Color code green, yellow
- Can be used in electronic truck and bus, with drive train, safety and trailer functions.
- This cable supports the multiplexing network protocol while meeting all physical and mechanical requirements.
- This cable retains its controlled impedance characteristics even after bending and routing. It maintains an environmental seal even with standard connectors.
- The 150C & 125C versions of this cable are extremely resistant to the harsh chemicals and fluids in the power train and can be routed close to hot spots in the engine.
- This cable is designed for maximum protection against interference and can go anywhere in the trunk without fear of EMI & RFI.

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Trailer Cable - PVC

(-50C to 80C)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Colors	Conductor Stranding	Nominal Insulation	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.
TRC1604BLK	16	4	black, white, brown, red	19/29 Bare	.023	.030	.375	120
TRC1604BLK1	16	4	red, green, brown, yellow	19/29 Bare	.023	.030	.375	120
TRC1606BLK	16	6	black, white, brown, green, red, yellow	19/29 Bare	.023	.030	.440	150
TRC1606BLK1	16	6	black, red, brown, green, blue, yellow	19/29 Bare	.023	.030	.440	150
TRC1404BLK	14	4	black, white, brown, red	19/27 Bare	.023	.045	.420	150
TRC1404BLK1	14	4	red, green, brown, yellow	19/27 Bare	.023	.045	.420	150
TRC1406BLK	14	6	black, white, brown, green, red, yellow	19/27 Bare	.023	.060	.490	190
TRC1406BLK1	14	6	black, red, brown, green, blue, yellow	19/27 Bare	.023	.060	.490	190
TRC1407BLK	14	7	black, white, brown, green, red, yellow, blue	19/27 Bare	.023	.060	.535	220
TRC14/4-12/1-10/2BLK	14	4	brown, yellow, green, red	19/27 Bare	.023	.070	.560	270
	12	1	blue	19/25 Bare	.026			
	10	2	black,white	19/23 Bare	.031			
TRC1204BLK	12	4	black, white, brown, red	19/25 Bare	.026	.070	.510	250
TRC1206BLK	12	6	black, white, brown, green, red, yellow	19/25 Bare	.026	.070	.560	320
TRC12/6-10/1BLK	12	6	blue, brown, green, red, yellow, black	19/25 Bare	.026	.070	.600	350
	10	1	white	19/23 Bare	.031			
TRC12/4-10/2-8/1GRN	12	4	yellow, black, brown, green	65/30 Bare	.026	.070	.710	420
	10	2	blue, red	105/30 Bare	.031			
	8	1	wht	168/30 Bare	.037			

- P/N TRC12/4-10/2-8/1 is normally stocked with a green PVC jacket. SAE also approves this cable as ABS compliant due to the flexible stranding and the presence of two 10 AWG conductors.
- Can be used for automotive trailers, trucks or applications with good resistance to weather, oil and grease.
- Trailer cable inner conductors are stranded copper and color-coded for identification purposes with a PVC jacket.
- TPE can be substituted for PVC in extremely low temperature applications.
- Trailer cable specifications can vary. Please contact your salesperson for any constructions not shown.

Flat Parallel Unjacketed PVC Jumper Cable

(80C)

WCWC P/N	AWG Size	Number of Conductors	Conductor Stranding	Nominal O.D.	Approx. Lbs./Mft.
JC0802PVC	8	2	168/.010 Bare	.295 X .620	182
JC0602PVC	6	2	133/.0139 Bare	.320 X .650	226
JC0402PVC	4	2	133/.0170 Bare	.400 X .815	355
JC0202PVC	2	2	665/.010 Bare	.520 X 1.140	486

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AV/AVF

Automotive Polyvinylchloride (PVC) Wire JIS AV / AVF (-40C to 90C)

WCWC P/N	AWG Size	Size mm² Cross Section	Conductor Stranding mm	Nominal Insulation mm	Nominal Diameter mm	Approx. Lbs./Mft.
AV.5	20	0.50	7/0.32 mm Bare	0.6	2.2	6.1
AVF.5	20	0.50	20/0.18 mm Bare	0.6	2.2	6.1
AVF.75	18	0.75	30/0.18 mm Bare	0.6	2.4	8.0
AV.85	18	0.85	11/0.32 mm Bare	0.6	2.4	8.7
AV1.25	16	1.25	16/0.32 mm Bare	0.6	2.7	11.7
AVF1.25	16	1.25	50/0.18 mm Bare	0.6	2.7	11.7
AV2.0	14	2.00	26/0.32 mm Bare	0.6	3.1	17.4
AV3.0	12	3.00	41/0.32 mm Bare	0.7	3.8	26.8
AV5.0	10	5.00	65/0.32 mm Bare	0.8	4.6	40.2
AV8.0	8	8.00	50/0.45 mm Bare	0.9	5.5	61.0
AV10.0	6	10.00	63/0.45 mm Bare	1.0	6.6	81
AV15.0	4	15.00	84/0.45 mm Bare	1.1	7.0	102

- ❑ Can be used in automotive applications for general circuit wiring and automotive or marine applications where Japanese approvals are required.
- ❑ Meets Honda, Toyota, Mitsubishi, Nissan and other Japanese automotive company specifications.
- ❑ We can stripe, print, respool, or drum pack to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Light blue	Purple
Dark blue	Light green	Red
Brown	Orange	Tan
Dark green	Pink	White
Gray		Yellow

Automotive

AVS/AVSF

Automotive Polyvinylchloride (PVC) Wire JIS AVS / AVSF (-40C to 90C)

WCWC P/N	AWG Size	Size mm² Cross Section	Conductor Stranding mm	Nominal Insulation mm	Nominal Diameter mm	Approx. Lbs./Mft.
AVS.3	22	0.30	7/0.26 mm Bare	0.5	1.8	4.1
AVSF.3	22	0.30	15/0.18 mm Bare	0.5	1.8	4.1
AVS.5	20	0.50	7/0.32 mm Bare	0.5	2.0	5.6
AVS.85	18	0.85	11/0.32 mm Bare	0.5	2.2	7.9
AVS1.25	16	1.25	16/0.32 mm Bare	0.5	2.5	10.8
AVS2.0	14	2.00	26/0.32mm Bare	0.5	2.9	16.4
AVS3.0	12	3.00	41/0.32mm Bare	0.6	3.6	26.0
AVS5.0	10	5.00	65/0.32mm Bare	0.7	4.4	39.4

- ❑ Can be used in automotive applications for general circuit wiring and automotive or marine applications where Japanese approvals are required.
- ❑ Meets Honda, Toyota, Mitsubishi, Nissan and other Japanese automotive company specifications.
- ❑ We can stripe, print, respool, or drum pack to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Light blue	Purple
Dark blue	Light green	Red
Brown	Orange	Tan
Dark green	Pink	White
Gray		Yellow

AVSS/AVSSF

Automotive Polyvinylchloride (PVC) Wire JIS AVSS / AVSSF (-40C to 90C)

WCWC P/N	AWG Size	Size mm² Cross Section	Conductor Stranding mm	Nominal Insulation mm	Nominal Diameter mm	Approx. Lbs./Mft.
AVSS.3	22	0.30	7/0.26 mm Bare	0.3	1.4	3.2
AVSSF.3	22	0.30	19/0.16 mm Bare	0.3	1.4	3.2
AVSS.5	20	0.50	7/0.32 mm Bare	0.3	1.6	4.7
AVSSF.5	20	0.50	19/0.19 mm Bare	0.3	1.6	4.7
AVSSF.75	18	0.75	19/0.23 mm Bare	0.3	1.8	6.0
AVSSF.85	18	0.85	19/0.24 mm Bare	0.3	1.8	6.7
AVSS1.25	16	1.25	19/0.29 mm Bare	0.3	2.1	9.4
AVSSF1.25	16	1.25	37/0.21 mm Bare	0.3	2.1	9.4
AVSSF2.0	14	2.00	37/0.26 mm Bare	0.4	2.6	14.3

- ❑ Can be used in automotive applications for general circuit wiring and automotive or marine applications where Japanese approvals are required.
- ❑ Meets Honda, Toyota, Mitsubishi, Nissan and other Japanese automotive company specifications.
- ❑ We can stripe, print, respool, or drum pack to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Light blue	Purple
Dark blue	Light green	Red
Brown	Orange	Tan
Dark green	Pink	White
Gray		Yellow

Automotive

Take note!

WCWC has drum packing capabilities for dyed, topcoated, hot-stamped, striped, and printed wire...

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TFFN/TFN/1316/1408/1452

Polyvinylchloride (PVC)/Nylon Primary Wire (90C) (600 Volts) (UL) (CSA)
UL-1316, 105C Dry, 80C in Oil, 600 Volts
UL-1408, 90C Dry, 60C Wet or in Oil, 600 Volts
UL-1452, 90C Dry, 80C in Oil, 1000 Volts
CSA-TEWN or AWM I A/B 105C, 600 Volts, FT 1

WCWC P/N	AWG Size	Conductor Stranding	Inches PVC	Inches Nylon	Nominal Diameter	Approx. Lbs./Mft.	UL Type	Ampacity NEC*
TFFN18	18	16/30 Bare	.015	.004	.088	8	TFFN/MTW	6
TFFN16	16	26/30 Bare	.015	.004	.100	12	TFFN/MTW	8
TFN18S	18	Solid Bare	.015	.004	.082	8	TFN	6
TFN16S	16	Solid Bare	.015	.004	.093	11	TFN	8

*Per NEC table 310-16

- Can be used for wiring of machine tools, appliances, control circuits, installation in conduit or other raceways and for new construction. Resistant to alkalis, grease, chemicals, gasoline, and oil.
- We can stripe, print, respool or drum pack to your customized specifications.
- Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- Stocked in various solid colors:

Black	Brown	Gray	Light green	Pink	Red	White
Blue	Green	Light blue	Orange	Purple	Tan	Yellow

Take note!

WCWC has quick turnaround on printing, striping, dyeing, topcoating, respooling, and drum packaging.

THHN/THWN/MTW/AWM

Polyvinylchloride (PVC)/Nylon Primary Wire (90C) (600 Volts) (VW1) (UL) (CSA)

WCWC P/N	AWG Size	Conductor Stranding	Inches PVC	Inches Nylon	Nominal Diameter	Approx. Lbs./Mft.	Ampacity 90C
THHN14	14	19/.0147 Bare	.015	.004	.110	16	15
THHN14S	14	Solid Bare	.015	.004	.104	16	15
THHN12	12	19/.0185 Bare	.015	.004	.130	25	20
THHN12S	12	Solid Bare	.015	.004	.121	24	20
THHN10	10	19/.0234 Bare	.020	.004	.170	39	30
THHN10S	10	Solid Bare	.020	.004	.155	37	30
THHN8	8	19/.0295 Bare	.030	.005	.220	64	55
THHN6	6	19/.0372 Bare	.030	.005	.260	96	75
THHN4	4	19/.0469 Bare	.040	.006	.330	154	95
THHN2	2	19/.0591 Bare	.040	.006	.390	236	130
THHN1	1	19/.0664 Bare	.050	.007	.440	300	150
THHN1/0	1/0	19/.0745 Bare	.050	.007	.490	370	170
THHN2/0	2/0	19/.0837 Bare	.050	.007	.540	460	195
THHN3/0	3/0	19/.0940 Bare	.050	.007	.590	575	225
THHN4/0	4/0	19/.1055 Bare	.050	.007	.650	715	260
THHN250	250	37/.0822 Bare	.060	.008	.720	850	290
THHN300	300	37/.0900 Bare	.060	.008	.770	1015	320
THHN350	350	37/.0973 Bare	.060	.008	.830	1175	350
THHN400	400	37/.1040 Bare	.060	.008	.870	1335	380
THHN500	500	37/.1162 Bare	.060	.008	.960	1655	430
THHN600	600	61/.0992 Bare	.070	.009	1.060	2005	475
THHN750	750	61/.1109 Bare	.070	.009	1.170	2500	535
THHN1000	1000	61/.1280 Bare	.070	.009	1.350	3310	615

- ❑ Can be used for wiring of machine tools, appliances, control circuits, installation in conduit or other raceways and for new construction. Resistant to alkalis, grease, chemicals, gasoline, and oil.
- ❑ We can stripe, print, respool or drum pack to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Brown	Gray	Light green	Pink	Red	White
Blue	Green	Light blue	Orange	Purple	Tan	Yellow

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XHHW

XHHW-2 Chemically Cross-linked Polyethylene (XLP) (600 Volts) (90C)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	Ampacity* 90C	Standard Put-up
XHHW14	14	7/.0242 Bare	.030	.15	18	15	1000’
XHHW12	12	7/.0305 Bare	.030	.17	27	20	1000’
XHHW10	10	7/.0385 Bare	.030	.19	40	30	1000’
XHHW8	8	7/.0486 Bare	.045	.25	67	55	1000’
XHHW6	6	7/.0612 Bare	.045	.28	97	75	1000’
XHHW4	4	7/.0772 Bare	.045	.34	149	95	1000’
XHHW2	2	7/.0974 Bare	.045	.40	229	130	1000’
XHHW1	1	19/.0664 Bare	.055	.45	291	150	1000’
XHHW1/0	1/0	19/.0745 Bare	.055	.50	362	170	1000’
XHHW2/0	2/0	19/.0837 Bare	.055	.54	452	195	1000’
XHHW3/0	3/0	19/.0940 Bare	.055	.60	564	225	1000’
XHHW4/0	4/0	19/.1055 Bare	.055	.65	704	260	1000’
XHHW250	250	37/.0822 Bare	.065	.72	844	290	1000’
XHHW300	300	37/.0900 Bare	.065	.77	1005	320	1000’
XHHW350	350	37/.0973 Bare	.065	.82	1168	350	1000’
XHHW400	400	37/.1040 Bare	.065	.85	1323	380	1000’
XHHW500	500	37/.1162 Bare	.065	.95	1647	430	1000’
XHHW600	600	61/.0992 Bare	.080	1.07	1950	475	1000’
XHHW750	750	61/.1109 Bare	.080	1.17	2460	535	1000’
XHHW1000	1000	61/.1208 Bare	.080	1.28	3230	615	500’

- ❑ VW-1 on 14-8 AWG.
- ❑ Can be used for general purpose wiring, for power distribution and branch circuit wiring, where a cable having superior flame retardance is required.
- ❑ Other products available: uninsulated bare, THW, XLP-USE, interlocked armor cable, type MC tray cable, power cable, high voltage and trolley wire.

*Per NEC table 310-16

ROMEX TYPE NM-B

Polyvinylchloride (PVC) Non Metallic Sheathed Cable (90C) (600 Volts) (UL Standard 83 and 719)

WCWC P/N	AWG Size	No. of Conductors	Conductor Stranding	Inches PVC	Inches Nylon	Ground Wire	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.	Ampacity NEC*
RO1402WGND	14	2	Solid Bare	.015	.004	14 Solid Bare	.030	.360 x .162	58	15
RO1403WGND	14	3	Solid Bare	.015	.004	14 Solid Bare	.030	.307	75	15
RO1202WGND	12	2	Solid Bare	.015	.004	12 Solid Bare	.030	.410 x .179	83	20
RO1203WGND	12	3	Solid Bare	.015	.004	12 Solid Bare	.030	.347	109	20
RO1002WGND	10	2	Solid Bare	.020	.004	10 Solid Bare	.030	.495 x .210	126	30
RO1003WGND	10	3	Solid Bare	.020	.004	10 Solid Bare	.030	.422	167	30
RO0802WGND	8	2	7	.030	.005	10 Solid Bare	.030	.612 x .269	187	40
RO0803WGND	8	3	7	.030	.005	10 Solid Bare	.030	.565	254	40
RO0602WGND	6	2	7	.030	.005	10 Solid Bare	.030	.683 x .304	256	55
RO0603WGND	6	3	7	.030	.005	10 Solid Bare	.030	.650	357	55
RO0403WGND	4	3	7	.040	.006	8 Solid Bare	.030	.892	593	70
RO0203WGND	2	3	7	.040	.006	8 Solid Bare	.030	1.034	856	95

*Per table 310.15 and 334.80 of the National Electric Code.

- ❑ May be used for both exposed and concealed work in normally dry locations and is primarily used in residential wiring as branch circuits for outlets, switches, and other loads.
- ❑ Meets federal specification A-A-59544 and requirements of the National Code.
- ❑ Copper conductors are annealed soft bare copper. Stranded conductors are compressed bare stranded.
- ❑ Conductor insulation is 90C rated polyvinylchloride (PVC), nylon jacketed.
- ❑ Cable jacket is color coded for quick size identification: 14AWG=White, 12AWG=Yellow, 10AWG=Orange, 8AWG, 6AWG, 4AWG, & 2AWG=Black.
- ❑ We can respool to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.

Did you know that World Class Wire & Cable stocks many types of electronic wire?

- ☆ Coaxial
- ☆ Computer
- ☆ Communication
- ☆ Control
- ☆ Fire
- ☆ Sound
- ☆ Plenum
- ☆ Security
- ☆ Sound
- ☆ Specialty Cables
- ☆ Video

Consult your salesperson for specification, information, and availability

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Telephone Silver Satin

Polyvinylchloride (PVC) 60C 150V AWM 20251

WCWC P/N	AWG Size	Number of Conductors	Conductor Stranding		Nominal Insulation In.	Nominal Insulation mm	Jacket Thickness In.	Jacket Thickness mm	Nominal Diameter In.	Nominal Diameter mm	Approx Wt. Lbs./Mft
SS2604	26	4	7/.16 mm	7/34	.009"	.23mm	024 "	.6mm	.098 X .197	2.5 X 5.0	12
SS2606	26	6	7/.16 mm	7/34	.009"	.23mm	.024 "	.6mm	.098 X .276	2.5 X 7.0	18
SS2608	26	8	7/.16 mm	7/34	.009"	.23mm	.024 "	.6mm	.098 X .347	2.5 X 8.8	23

- Standard 4C color code: Black, red, green, yellow
- Standard 6C color code: White, black, red, green, yellow, blue
- Standard 8C color code: Blue, orange, black, red, green, yellow, brown, gray*

* Standard color code for 8C is for data application.

Consult your salesperson for availability of 8C color code for voice application. Voice application color code: Gray, orange, black, red, green, yellow, blue, brown

Coaxial, Security, Video, Plenum, and Non-Plenum

RG6, RG8, RG11, RG58, RG59, RG62, RG71, RG122, RG142

RG174, RG178, RG179, RG180, RG187, RG188, RG196,

RG212, RG213, RG214, RG216, RG217, RG223, RG303,

RG316, RG401, RG402, RG405

...and more.

Consult your salesperson for availability, variations, and options

Voice, Data, and Premise Wire Overall Shield/Multiple Conductor

UL Type CMR, CL3R, 75C

AWG Size	Number of Conductors	Conductor Stranding	Nominal Insulation	Nominal Jacket	Nominal Diameter	Approx. Lbs./Mft.
22	2	7BC	.008	.015	.13	12
22	3	7BC	.008	.015	.14	16
22	4	7BC	.008	.015	.15	20
22	6	7BC	.008	.015	.17	26
22	8	7BC	.008	.015	.20	31
22	12	7BC	.008	.015	.23	42
20	2	7BC	.008	.015	.15	17
20	3	7BC	.008	.015	.15	21
20	4	7BC	.008	.015	.17	25
18	2	7BC	.009	.015	.16	21
18	3	7BC	.009	.015	.17	28
18	4	7BC	.009	.015	.19	35
18	6	7BC	.009	.015	.23	50
18	8	7BC	.009	.015	.25	63
18	12	7BC	.009	.015	.30	90
16	2	19BC	.009	.015	.19	29
16	3	19BC	.009	.015	.20	39
16	4	19BC	.009	.015	.22	50
14	2	19BC	.013	.015	.25	46
14	3	19BC	.013	.015	.25	61
14	4	19BC	.013	.015	.27	79

- Can be used in remote control signaling and power-limited circuit applications where protection from electrostatic interference is required, for security, intercom, public address, sound, and audio systems.
- Conductors are soft bare annealed copper per ASTM B-3.
- Insulation is semi-rigid Polyvinylchloride (PVC)
- Overall shield is an Aluminum-polymer tape providing 100% coverage with flexible 7 strand tinned copper drain wire.
- Jacket is gray PVC with a ripcord applied longitudinally under the jacket to facilitate stripping.
- Flame Test- UL1666 flame test
- Additional Standards:
  22AWG-16AWG: UL standard 13, NEC Article 725 Type CL3R and UL Standard 444, NEC Article 800 Type CMR
  14AWG: UL standard 13, NEC Article 725 Type CL3R

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Voice, Data, and Premise Wire
Non-Shielded/Multiple Conductor

UL Type CMR, CL3R, 75C

AWG Size	Number of Conductors	Conductor Stranding	Nominal Insulation	Nominal Jacket	Nominal Diameter	Approx. Lbs./Mft.
22	2	7BC	.008	.015	.12	9
22	3	7BC	.008	.015	.14	13
22	4	7BC	.008	.015	.16	17
22	6	7BC	.008	.015	.17	22
22	8	7BC	.008	.015	.18	27
22	12	7BC	.008	.015	.22	42
20	2	7BC	.008	.015	.13	11
20	3	7BC	.008	.015	.13	18
20	4	7BC	.008	.015	.14	22
18	2	7BC	.009	.015	.16	18
18	3	7BC	.009	.015	.17	24
18	4	7BC	.009	.015	.18	31
18	6	7BC	.009	.015	.23	46
18	8	7BC	.009	.015	.25	59
18	12	7BC	.009	.015	.29	86
16	2	19BC	.009	.015	.18	26
16	3	19BC	.009	.015	.19	35
16	4	19BC	.009	.015	.21	47
14	2	19BC	.013	.015	.22	41
14	3	19BC	.013	.015	.24	55
14	4	19BC	.013	.015	.26	72
12	2	19BC	.013	.015	.26	57

- Can be used in remote control signaling and power-limited circuit applications where protection from electrostatic interference is not required, for security, intercom, public address, sound, and audio systems.
- Conductors are soft bare annealed copper per ASTM B-3.
- Insulation is semi-rigid Polyvinylchloride (PVC)
- Jacket is gray PVC with a ripcord applied longitudinally under the jacket to facilitate stripping.
- Flame Test- UL1666 flame test
- Additional Standards:
  22AWG-16AWG: UL standard 13, NEC Article 725 Type CL3R and UL Standard 444, NEC Article 800 Type CMR
  14AWG: UL standard 13, NEC Article 725 Type CL3R

B, C, D - Military Wire

MIL-W-16878/1 Type B (105C) (600 Volts)

WCWC P/N	AWG NO.	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	Military Specification
B30	30	7/38 Tinned	.010	.031	.085	MIL-W-16878/1 Type B
B28	28	7/36 Tinned	.010	.035	1.08	MIL-W-16878/1 Type B
B26	26	7/34 Tinned	.010	.039	1.46	MIL-W-16878/1 Type B
B24	24	7/32 Tinned	.010	.044	2.18	MIL-W-16878/1 Type B
B24F	24	19/36 Tinned	.010	.044	2.18	MIL-W-16878/1 Type B
B22	22	7/30 Tinned	.010	.051	2.99	MIL-W-16878/1 Type B
B22F	22	19/34 Tinned	.010	.051	3.19	MIL-W-16878/1 Type B
B20	20	7/28 Tinned	.010	.058	4.43	MIL-W-16878/1 Type B
B20F	20	19/32 Tinned	.010	.058	4.72	MIL-W-16878/1 Type B
B18	18	7/26 Tinned	.010	.070	6.68	MIL-W-16878/1 Type B
B18F	18	19/30 Tinned	.010	.070	7.03	MIL-W-16878/1 Type B
B16	16	19/29 Tinned	.010	.077	8.89	MIL-W-16878/1 Type B
B14	14	19/27 Tinned	.010	.090	13.54	MIL-W-16878/1 Type B

See 1061, our UL1061 is also MIL-W-16878/1 Type B approved and printed.

MIL-W-16878/2 Type C (105C) (1000 Volts)

WCWC P/N	AWG NO.	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	Military Specification
C28	28	7/36 Tinned	.017	.047	1.60	MIL-W-16878/2 Type C
C26	26	7/34 Tinned	.017	.051	2.00	MIL-W-16878/2 Type C
C24	24	7/32 Tinned	.017	.058	2.77	MIL-W-16878/2 Type C
C24F	24	19/36 Tinned	.017	.058	2.88	MIL-W-16878/2 Type C
C22	22	7/30 Tinned	.017	.063	3.65	MIL-W-16878/2 Type C
C22F	22	19/34 Tinned	.017	.063	3.84	MIL-W-16878/2 Type C
C20	20	7/28 Tinned	.017	.072	5.17	MIL-W-16878/2 Type C
C20F	20	19/32 Tinned	.017	.072	5.17	MIL-W-16878/2 Type C
C18	18	7/26 Tinned	.017	.082	7.54	MIL-W-16878/2 Type C
C18F	18	19/30 Tinned	.017	.082	8.04	MIL-W-16878/2 Type C
C16	16	19/29 Tinned	.017	.092	9.86	MIL-W-16878/2 Type C
C14	14	19/27 Tinned	.017	.105	14.65	MIL-W-16878/2 Type C
C12	12	19/25 Tinned	.017	.124	22.51	MIL-W-16878/2 Type C

See MIL-W-76D Type MW as an alternate for C24-C12.
See 1007, our UL1007 is also MIL-W-16878/2 Type C approved and printed.

MIL-W-16878/3 Type D (105C) (3000 Volts)

WCWC P/N	AWG NO.	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	Military Specification
D24	24	7/32 Tinned	.031	.086	4.85	MIL-W-16878/3 Type D
D22	22	7/30 Tinned	.031	.093	5.91	MIL-W-16878/3 Type D
D20	20	7/28 Tinned	.031	.100	7.63	MIL-W-16878/3 Type D
D18	18	7/26 Tinned	.031	.110	10.29	MIL-W-16878/3 Type D
D16	16	19/29 Tinned	.031	.120	12.87	MIL-W-16878/3 Type D
D14	14	19/27 Tinned	.031	.134	18.05	MIL-W-16878/3 Type D
D12	12	19/25 Tinned	.037	.160	27.27	MIL-W-16878/3 Type D
D10	10	37/26 Tinned	.037	.182	39.8	MIL-W-16878/3 Type D
D8	8	133/29 Tinned	.037	.245	68.7	MIL-W-16878/3 Type D
D6	6	133/27 Tinned	.037	.295	102.7	MIL-W-16878/3 Type D

Consult your salesperson for availability.

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MIL-W-22759/11

Polytetrafluoroethylene (PTFE) Electronic Hook-up Wire, Single Conductor (600 volts) (200C)

WCWC P/N	Size AWG	Size mm2	Conductor Stranding	Insulation Thickness mils.	Insulation Thickness mm	Nominal O.D. in.	Nominal O.D. mm	Approx. Weight Lbs./Mft.	Approx. Weight Kg/Km
22759/11-26	26	.10	19/38 SPC	10	.25	.038	.97	1.90	2.83
22759/11-24	24	.20	19/36 SPC	10	.25	.043	1.09	2.58	3.84
22759/11-22	22	.32	19/34 SPC	10	.25	.049	1.24	3.72	5.54
22759/11-20	20	.52	19/32 SPC	10	.25	.058	1.47	5.43	8.08
22759/11-18	18	.82	19/30 SPC	10	.25	.068	1.73	8.14	12.11
22759/11-16	16	1.3	19/29 SPC	11	.28	.075	1.90	10.0	14.8
22759/11-14	14	2.1	19/27 SPC	12	.30	.090	2.29	15.1	22.5
22759/11-12	12	3.3	19/25 SPC	14	.36	.111	2.82	24.1	35.8
22759/11-10	10	5.3	37/26 SPC	16	.41	.139	3.53	37.8	56.2
22759/11-8	8	13.0	133/29 SPC	21	.53	.202	5.13	64.2	95.6

- ❑ Can be used for internal wiring of electrical equipment where exposed to mechanical abuse for high temperature applications in computers, business machines, meters and electronic equipment. Resists hot soldering irons.
- ❑ SPC is silver plated copper.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Light blue	Purple
Blue	Light green	Red
Brown	Orange	Tan
Green	Pink	White
Gray		Yellow

MIL-W-22759/16

TEFZEL Ethylene/tetrafluoroethylene (ETFE) Electronic Hook-up Wire, Single Conductor (600 volts) (150C)

WCWC P/N	Size AWG	Size mm2	Conductor Stranding	Insulation Thickness mils.	Insulation Thickness mm	Nominal O.D. in.	Nominal O.D. mm	Approx. Weight Lbs./Mft.	Approx. Weight Kg/Km
22759/16-24	24	.20	19/36 TC	11	.28	.045	1.14	2.58	3.84
22759/16-22	22	.32	19/34 TC	11	.28	.052	1.32	3.72	5.54
22759/16-20	20	.52	19/32 TC	11	.28	.060	1.52	5.43	8.08
22759/16-18	18	.82	19/30 TC	12	.31	.071	1.80	8.14	12.11
22759/16-16	16	1.3	19/29 TC	13	.33	.079	2.01	10.0	14.8
22759/16-14	14	2.1	19/27 TC	13	.33	.093	2.36	15.1	22.5
22759/11-12	12	3.3	37/28 TC	14	.36	.114	2.90	24.1	35.8
22759/11-10	10	5.3	37/26 TC	15	.38	.139	3.53	37.8	56.2

- ❑ Can be used for internal wiring of electrical equipment where exposed to mechanical abuse for high temperature applications in computers, business machines, meters and electronic equipment. Resists hot soldering irons.
- ❑ TC is tinned copper.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Light blue	Purple
Blue	Light green	Red
Brown	Orange	Tan
Green	Pink	White
Gray		Yellow

MIL-W-76D Type MW

Medium Wall Polyvinylchloride (PVC) MIL-Spec Wire (1000 V) (-40C to 80C)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.
MIL76MW24	24	7/32 Tinned	0.016	0.057	2.77
MIL76MW22	22	7/30 Tinned	0.016	0.062	3.65
MIL76MW20	20	10/30 Tinned	0.016	0.070	4.80
MIL76MW18	18	16/30 Tinned	0.016	0.079	7.54
MIL76MW16	16	26/30 Tinned	0.016	0.091	9.86
MIL76MW14	14	41/30 Tinned	0.016	0.110	14.66
MIL76MW12	12	65/30 Tinned	0.016	0.131	22.51

- ❑ Can be used for wiring of electronic equipment.
- ❑ MIL-W-76D superseded MIL-W-76B in September, 1992.
- ❑ We can stripe, print, or respool to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Light blue	Purple
Blue	Light green	Red
Brown	Orange	Tan
Green	Pink	White
Gray		Yellow

1061/Mil-W-16878/1/Type B

Semi-rigid Polyvinylchloride (PVC) (80C) (300 Volts) (UL & CSA)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	UL Style	CSA Type	Mil Type	Copper Wgt. Lbs./Mft.
1061/26	26	7/34 Tinned	.009	.038	1.5	1061	SR-PVC	Mil-W-16878/1 Type B	.85
1061/24	24	7/32 Tinned	.009	.045	2.0	1061	SR-PVC	Mil-W-16878/1 Type B	1.36
1061/22	22	7/30 Tinned	.009	.051	3.0	1061	SR-PVC	Mil-W-16878/1 Type B	2.20
1061/20	20	10/30 Tinned	.009	.058	4.0	1061	SR-PVC	N/A	3.20
1061/18	18	16/30 Tinned	.009	.067	6.5	1061	SR-PVC	N/A	5.00
1061/16	16	26/30 Tinned	.009	.078	8.5	1061	SR-PVC	N/A	7.97

❑ Print Legends:
26, 24, 22 AWG: E_ _ _ _ _ _ _ _AWG UR AWM 1061 80C 300V VW-1--- _ _ _ _ _ _ CSA AWM I A/B 80C 300V FT1 SR PVC---M16878/1B_ 600V 105C "TYPE B"
20, 18, & 16 AWG: E_ _ _ _ _ _ _ _AWG UR AWM 1061 80C 300V VW-1--- _ _ _ _ _ _ _ CSA AWM 80C 300V I A/B SR FT-1 PVC

- ❑ Can be used for wiring of electronic equipment.
- ❑ Our 1061 also meets MIL-W-16878/1 Type B 105C 600 volts for 22 AWG and smaller. #28 is non-printed but tagged. #26 - #22 is printed with "MIL-W-16878/1 Type B".
- ❑ We can stripe, print, respool or drum pack to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quick delivery.
- ❑ Stocked in various solid colors:

Black	Light blue	Purple
Blue	Light green	Red
Brown	Orange	Tan
Green	Pink	White
Gray		Yellow

1007/1569/Mil-W-16878/2 Type C

Polyvinylchloride (PVC) Hookup Wire (VW-1)
UL 1007 80C/300V, CSA TR64 90C/300V
UL1569 105C/300V CSA AWM 1 A/B 105C/300V FT1
Mil-W-16878/2 Type C 105C/1000V

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	UL Style	CSA Type	Mil Type
1007/26	26	7/34 Tinned	.015	.051	2	1007/1569	AWM/TR64	Mil-W-16878/2 Type C
1007/24	24	7/32 Tinned	.015	.057	2.5	1007/1569	AWM/TR64	Mil-W-16878/2 Type C
1007/24F	24	19/36 Tinned	.015	.057	2.5	1007/1569	AWM/TR64	Mil-W-16878/2 Type C
1007/24S	24	Solid Tinned	.015	.052	2.5	1007/1569	AWM/TR64	Mil-W-16878/2 Type C
1007/24TOP	24	7/32 Topcoat	.015	.057	2.5	1007/1569	AWM/TR64	N/A
1007/22	22	7/30 Tinned	.015	.062	3.3	1007/1569	AWM/TR64	Mil-W-16878/2 Type C
1007/22F	22	19/34 Tinned	.015	.062	3.7	1007/1569	AWM/TR64	Mil-W-16878/2 Type C
1007/22S	22	Solid Tinned	.015	.062	3	1007/1569	AWM/TR64	Mil-W-16878/2 Type C
1007/22TOP	22	7/30 Topcoat	.015	.062	4	1007/1569	AWM/TR64	N/A
1007/20	20	10/30 Tinned	.015	.070	4.7	1007/1569	AWM/TR64	Mil-W-16878/2 Type C
1007/20F	20	19/32 Tinned	.015	.073	5	1007/1569	AWM/TR64	Mil-W-16878/2 Type C
1007/20S	20	Solid Tinned	.015	.067	4.7	1007/1569	AWM/TR64	Mil-W-16878/2 Type C
1007/20TOP	20	10/30 Topcoat	.015	.067	4.7	1007/1569	AWM/TR64	N/A
1007/18	18	16/30 Tinned	.015	.079	7	1007/1569	AWM/TR64	Mil-W-16878/2 Type C
1007/18F	18	19/.0092 Tinned	.015	.079	7	1007/1569	AWM/TR64	Mil-W-16878/2 Type C
1007/18S	18	Solid Tinned	.015	.073	6.5	1007/1569	AWM/TR64	Mil-W-16878/2 Type C
1007/18TOP	18	16/30 Topcoat	.015	.079	7	1007/1569	AWM/TR64	N/A
1007/16	16	26/30 Tinned	.015	.095	10.5	1007/1569	AWM/TR64	Mil-W-16878/2 Type C
1007/16S	16	Solid Tinned	.015	.091	10	1007/1569	AWM/TR64	Mil-W-16878/2 Type C
1007/16TOP	16	26/30 Topcoat	.015	.095	10	1007/1569	AWM/TR64	N/A
1569/14	14	41/30 Tinned	.015	.110	16	1569/1581	AWM/TR64	Mil-W-16878/2 Type C
1569/12	12	65/30 Tinned	.015	.131	24	1569/1581	AWM	Mil-W-16878/2 Type C
1569/10	10	105/30Tinned	.015	.145	36	1569/1581	AWM	N/A

- Topcoat, overcoat, bare copper, and 10AWG products are not MIL-W-16878/2 Type C.
- Print Legends:
  26-16 AWG: E_____ __AWG UR AWM 1569 105C OR 1007 80C 300V VW-1--- _____ CSA TR-64 90C OR AWM I A/B 105C 300V FT1--- M16878/2B_ 1000V 105C "TYPE C"

  14 AWG: E_____ 14 AWG UR AWM 1569 105C OR 1581 80C 300V VW-1--- _____ CSA TR-64 90C OR AWM I A/B 105C 300V FT1--- M16878/2B 1000V 105C "TYPE C"

  12 AWG: E_____ 12 AWG UR AWM 1569 105C OR 1581 80C 300V VW-1--- _____ AWM I A/B 105C 300V FT1--- M16878/2B 1000V 105C "TYPE C"

  10 AWG: E_____ 10 AWG UR AWM 1569 105C OR 1581 80C 300V VW-1--- _____ AWM I A/B 105C 300V FT1
- Can be used in internal wiring of appliances and electronic equipment.
- Overcoat, topcoat, and prebond stranding are also available. We can stripe, print, respool or drum pack to your customized specifications.
- Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- Stocked in various solid colors:

Black	Light blue	Purple
Blue	Light green	Red
Brown	Orange	Tan
Green	Pink	White
Gray		Yellow

Take note!

WCWC has same day shipment on stocked items...

1015/1011/1028/1032/1230/1231/1335/1344/MTW/TEW (Bare Copper)

Polyvinylchloride (PVC) Machine Tool Wire (MTW)/Thermoplastic Equipment Wire (TEW)
(90C MTW) (UL & CSA 105C) (VW-1 & Moisture Resistant) (600 Volts) (1032 - 1000 Volts)
Marine approvals for 16-8 AWG meets UL Standard1426 BC-5W2, SAE J378, USCG, ABYC, and NMMA

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	UL Style	CSA Type
1015/22BC	22	7/30 Bare	.030	.091	5	1011/1015/1032/1230/1335	105C TEW or AWM
1015/22S	22	Solid Bare	.030	.088	5	1011/1015/1032/1230/1335	105C TEW or AWM
1015/20BC	20	10/30 Bare	.030	.099	7	1011/1015/1032/1230/1335	105C TEW or AWM
1015/20S	20	Solid Bare	.030	.096	7	1011/1015/1032/1230/1335	105C TEW or AWM
1015/18BC	18	16/30 Bare	.030	.106	9	1011/1015/1032/1230/1335	105C TEW or AWM
1015/18S	18	Solid Bare	.030	.102	9	1011/1015/1032/1230/1335	105C TEW or AWM
1015/16BC	16	26/30 Bare	.030	.117	13	1011/1015/1032/1230/1335	105C TEW or AWM
1015/16S	16	Solid Bare	.030	.112	13	1011/1015/1032/1230/1335	105C TEW or AWM
1015/14BC	14	19/.0147 Bare	.030	.132	18	1011/1015/1032/1230/1335	105C TEW or AWM
1015/14BCF	14	41/30 Bare	.030	.132	18	1011/1015/1032/1230/1335	105C TEW or AWM
1015/14S	14	Solid Bare	.030	.124	18	1011/1015/1032/1230/1335	105C TEW or AWM
1015/12BC	12	19/.0185 Bare	.030	.151	27	1011/1015/1032/1230/1335	105C TEW or AWM
1015/12BCF	12	65/30 Bare	.030	.151	27	1011/1015/1032/1230/1335	105C TEW or AWM
1015/12S	12	Solid Bare	.030	.145	27	1011/1015/1032/1230/1335	105C TEW or AWM
1015/10BC	10	19/.0234 Bare	.030	.175	40	1011/1015/1032/1230/1335	105C TEW or AWM
1015/10BCF	10	105/30 Bare	.030	.175	41	1011/1015/1032/1230/1335	105C TEW or AWM
1015/10S	10	Solid Bare	.030	.165	41	1011/1015/1032/1230/1335	105C TEW or AWM
1028/8BC	8	19/.0295 Bare	.047	.242	68	1028/1032/1231/1344	105C TEW or AWM
1028/8BCF	8	133/29 Bare	.048	.252	67	1028/1032/1231/1344	105C TEW or AWM

- ❑ Can be used for control cabinets, internal wiring of appliances and for machine tools.
- ❑ Overcoat, topcoat, and prebond stranding are also available.
- ❑ We can stripe, print, respool or drum pack to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Brown	Gray	Light green	Pink	Red	White
Blue	Green	Light blue	Orange	Purple	Tan	Yellow

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1232/1283/1284/1338/1339/ 1340/1346/10269/MTW/ TEW (Bare Copper)

Extra Flexible and Standard Large MTW/TEW Polyvinylchloride (PVC) Machine Tool Wire (MTW)/Thermoplastic Equipment Wire (TEW) (90C MTW) (UL & CSA 105C) (VW-1 & Moisture Resistant) (600 Volts)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	UL Style	CSA Type
1283/6BC	6	19/.0372 Bare	.060	.306	110	1232/1283/1346/10269	105C TEW or AWM
1283/6BCFF	6	266/30 Bare	.060	.335	118	1232/1283/1346/10269	105C TEW or AWM
1283/4BC	4	19/.0469 Bare	.060	.355	166	1232/1283/1346/10269	105C TEW or AWM
1283/4BCFF	4	420/30 Bare	.060	.367	164	1232/1283/1346/10269	105C TEW or AWM
1283/2BC	2	19/.0591 Bare	.060	.415	250	1232/1283/1346/10269	105C TEW or AWM
1283/2BCFF	2	665/30 Bare	.060	.432	251	1232/1283/1346/10269	105C TEW or AWM
1284/1BCFF	1	833/30 Bare	.080	.521	332	1232/1284/1338/10269	105C TEW or AWM
1284/1/0BCFF	1/0	1064/30 Bare	.080	.561	402	1232/1284/1338/10269	105C TEW or AWM
1284/2/0BCFF	2/0	1330/30 Bare	.080	.616	492	1232/1284/1338/10269	105C TEW or AWM
1284/3/0BCFF	3/0	1672/30 Bare	.080	.666	612	1232/1284/1338/10269	105C TEW or AWM
1284/4/0BCFF	4/0	2109/30 Bare	.080	.726	758	1232/1284/1338/10269	105C TEW or AWM
1284/250BCFF	250 MCM	2451/30 Bare	.095	.835	956	1284/1339/10269	105C AWM
1284/350BCFF	350MCM	3458/30 Bare	.100	1.045	1350	1284/1339/10269	105C AWM
1284/400BCFF	400MCM	4123/30 Bare	.098	1.16	1475	1284/1339/10269	105C AWM
1284/500BCFF	500MCM	5054/30 Bare	.130	1.275	1968	1284/1339/10269	105C AWM
1284/750BCFF	750MCM	7581/30 Bare	.115	1.38	2853	1284/1340/10269	105C AWM

- Can be used for control cabinets, internal wiring of appliances and for machine tools.
- #6 - 4/0 flexible MTW/TEW includes THHW, boat cable BC-5W2, SAE J1127 Type SGT, UL 10269 - 1000 volts.
- 1/0 - 750 MCM is CT (cable tray) rated.
- We can stripe, print or respool to your customized specifications.
- Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- All sizes stocked in black and red. 6, 4 & 2 stocked in various other colors.
- Consult your salesperson for availability. Other colors available upon special request.

1015/1011/1028/1032/1230/1231/1335/1344/MTW/TEW (Tinned Copper)

Polyvinylchloride (PVC) Machine Tool Wire (MTW)/Thermoplastic Equipment Wire (TEW) (90C MTW) (UL & CSA 105C) (VW-1 & Moisture Resistant) (600 Volts) (1032 - 1000 Volts)
Marine approvals for 16-8 AWG meets UL Standard 1426 BC-5W2, SAE, J378, USCG, ABYC, and NMMA

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	UL Style	CSA Type
1015/26TC	26	7/34 Tinned	.030	.081	4	1011/1015/1032/1230/1335	105C TEW or AWM
1015/24TC	24	7/32 Tinned	.030	.087	4.7	1011/1015/1032/1230/1335	105C TEW or AWM
1015/22TC	22	7/30 Tinned	.030	.091	5	1011/1015/1032/1230/1335	105C TEW or AWM
1015/20TC	20	10/30 Tinned	.030	.099	7	1011/1015/1032/1230/1335	105C TEW or AWM
1015/20TOP	20	10/30 Topcoat	.030	.99	7	1011/1015/1032/1230/1335	105C TEW or AWM
1015/18STC	18	Solid Tinned	.030	.102	9	1011/1015/1032/1230/1335	105C TEW or AWM
1015/18TC	18	16/30 Tinned	.030	.106	9	1011/1015/1032/1230/1335	105C TEW or AWM
1015/18TOP	18	16/30 Topcoat	.030	.106	10	1011/1015/1032/1230/1335	105C TEW or AWM
1015/16TC	16	26/30 Tinned	.030	.117	13	1011/1015/1032/1230/1335	105C TEW or AWM
1015/16TOP	16	26/30 Topcoat	.030	.117	13	1011/1015/1032/1230/1335	105C TEW or AWM
1015/14TC	14	41/30 Tinned	.030	.132	18	1011/1015/1032/1230/1335	105C TEW or AWM
1015/12TC	12	65/30 Tinned	.030	.151	27	1011/1015/1032/1230/1335	105C TEW or AWM
1015/10TC	10	105/30 Tinned	.030	.175	41	1011/1015/1032/1230/1335	105C TEW or AWM
1028/8TCF	8	133/29 Tinned	.048	.252	68	1028/1032/1231/1344	105C TEW or AWM

- ❑ Can be used in appliances, ballasts, controls, electronic circuits, hookups, motors, switchboards and transformers.
- ❑ 24 and 26 AWG tinned is not MTW rated and not marine approved.
- ❑ We can stripe, print, respool, or drum pack to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Brown	Gray	Light green	Pink	Red	White
Blue	Green	Light blue	Orange	Purple	Tan	Yellow

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1232/1283/1284/1338/1339/1340/1346/10269/MTW/TEW (Tinned Copper)

Extra Flexible and Standard Large MTW/TEW Polyvinylchloride (PVC) Machine Tool Wire (MTW)/Thermoplastic Equipment Wire (TEW) (90C MTW) (UL & CSA 105C) (VW-1 & Moisture Resistant) (600 Volts)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	UL Style	CSA Type
1283/6TCFF	6	266/30 Tinned	.060	.322	114	1232/1283/1346/10269	105C TEW or AWM
1283/4TCFF	4	420/30 Tinned	.060	.372	167	1232/1283/1346/10269	105C TEW or AWM
1283/2TCFF	2	665/30 Tinned	.060	.437	252	1232/1283/1346/10269	105C TEW or AWM
1284/1TCFF	1	833/30 Tinned	.080	.521	332	1232/1284/1338/10269	105C TEW or AWM
1284/1/0TCFF	1/0	1064/30 Tinned	.080	.561	402	1232/1284/1338/10269	105C TEW or AWM
1284/2/0TCFF	2/0	1330/30 Tinned	.080	.616	495	1232/1284/1338/10269	105C TEW or AWM
1284/3/0TCFF	3/0	1672/30 Tinned	.080	.666	612	1232/1284/1338/10269	105C TEW or AWM
1284/4/0TCFF	4/0	2109/30 Tinned	.080	.726	758	1232/1284/1338/10269	105C TEW or AWM
1284/250TCFF	250 MCM	2499/30 Tinned	.100	.887	978	1284/1339/10269	105C AWM
1284/350TCFF	350MCM	3458/30 Tinned	.100	1.045	1350	1284/1339/10269	105C AWM
1284/400TCFF	400MCM	4123/30 Tinned	.098	1.16	1475	1284/1339/10269	105C AWM
1284/500TCFF	500MCM	5054/30 Tinned	.130	1.275	1968	1284/1339/10269	105C AWM
1284/750TCFF	750MCM	7581/30 Tinned	.115	1.38	2853	1284/1340/10269	105C AWM

- Can be used for control cabinets, internal wiring of appliances and for machine tools.
- #6 - 4/0 flexible MTW/TEW includes THHW, boat cable BC-5W2, SAE J1127 Type SGT, UL 10269 - 1000 volts.
- 1/0 - 750 MCM is CT (cable tray) rated.
- We can stripe, print or respool to your customized specifications.
- Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- All sizes stocked in black and red. 6, 4 & 2 stocked in various other colors.
- Consult your salesperson for availability. Other colors available upon special request.

1275/1056, 1276/1060

Polyvinylchloride (PVC) Heavy Wall Lead, Hookup Wire and Refrigeration Wire (105C) (VW-1 & Moisture Resistant) (600 Volts) (UL & CSA)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	UL Style	C.S.A. Type
1275/18BC	18	16/30 Bare	.063	.174	18.4	1054/1056/1235/1275	105C TEW/AWM
1275/16BC	16	26/30 Bare	.063	.186	23	1054/1056/1235/1275	105C TEW/AWM
1276/14BCF	14	41/30 Bare	.078	.234	36.3	1058/1060/1322/1276	105C TEW/AWM
1276/12BCF	12	65/30 Bare	.078	.252	46.2	1058/1060/1322/1276	105C TEW/AWM
1276/10BCF	10	105/30 Bare	.078	.280	63.3	1058/1060/1322/1276	105C TEW/AWM

- Print Legend:
  1275/1056 18 and 16 AWG: E _ _ _ _ _ _ _ _ AWG MTW (UL) 600V OR AWM 1056/1275 VW-1 --- LL _ _ _ _ _ CSA TYPE TEW OR AWM I A/B 105C 600V FT1
  1276/1060 14, 12 and 10 AWG: E _ _ _ _ _ _ _ _ AWG (UL) MTW OR AWM 1060/1276/1329 600V VW-1 --- _ _ _ _ _ _ CSA TEW OR AWM I A/B 105C 600V FT1
- Can be used in appliances, equipment, ballasts, controls, electronic circuits, hookups, motors, panels, switchboards, transformers, refrigeration equipment and room cooler units.
- We can stripe, print, respool or drum pack to your customized specifications.
- Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- Stocked in various solid colors:

Black	Brown	Gray	Light green	Pink	Red	White
Blue	Green	Light blue	Orange	Purple	Tan	Yellow

1659

Polytetra Fluoroethylene (PTFE) (600 Volts) (250C)

WCWC P/N	AWG Size	Conductor Stranding	Copper Wt./M'	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.
1659/22F	22	19/.0063 NPC	5.70	.020	.070	5.70
1659/20F	20	19/.0080 NPC	7.65	.020	.078	7.65
1659/18F	18	19/.0100 NPC	10.50	.020	.087	10.5
1659/16	16	19/.0117 NPC	13.40	.020	.096	13.4
1659/14	14	19/.0147 NPC	18.80	.020	.109	18.8
1659/12	12	19/.0185 NPC	27.26	.020	.128	27.6
1659/10	10	37/.0157 NPC	39.00	.020	.154	39.00

- For use in internal wiring of electronic equipment and appliances. PTFE lead wires have a low coefficient of friction, which promotes easy handling. PTFE insulation also resists hot soldering irons, is self-extinguishing, non-flammable, has excellent chemical resistance, and is suitable for immersion in gasoline or gasoline vapor.
- Conductor is nickel plated copper.
- Insulation is a heavy wall of extruded Polytetra Floroethylene (PTFE).
- 1659 provides exceptional savings in both weight and space.
- Other AWGs and stranding choices available.
- Stocked in various solid colors:

Black	Light blue	Purple
Blue	Light green	Red
Brown	Orange	Tan
Green	Pink	White
Gray		Yellow

10086/CSA, Class 1, Group A/B

Tefzel-Extruded ETFE 200C/600V

WCWC P/N	AWG Size	Conductor Stranding	Copper Wgt. Lbs./Mft.	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.
10086/18	18	7/.0152BC	4.967	.010	.066	6
10086/16	16	7/.0192BC	7.90	.010	.078	10
10086/14	14	7/.0242BC	12.50	.010	.092	15
10086/12	12	19/.0185BC	18.80	.015	.119	23

- Conductor also available in tin-plated copper or silver-plated copper
- Can be used in internal wiring of electrical equipment and UL classified appliance wiring service up to 200C

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3173 /3195/3196

Chemically Cross-linked Polyethylene (XLPE) (600 Volts) (UL & CSA) (125C)

WCWC P/N	AWG Size	Conductor Stranding	Copper Wt./M'	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	UL Type	C.S.A. Type
3173/22	22	7/30 Tinned	2.20	.030	.090	5	3173	CL1251/AWM
3173/20	20	10/30 Tinned	3.09	.030	.103	7.5	3173	CL1251/AWM
3173/18	18	16/30 Tinned	4.94	.030	.110	10	3173	CL1251/AWM
3173/16	16	26/30 Tinned	8.03	.030	.121	13	3173	CL1251/AWM
3173/14	14	41/30 Tinned	12.66	.030	.138	19	3173	CL1251/AWM
3173/12	12	65/30 Tinned	20.80	.030	.157	28	3173	CL1251/AWM
3173/10	10	105/30 Tinned	32.50	.030	.187	43	3173	CL1251/AWM
3195/8	8	133/29 Tinned	52.87	.045	.261	69	3195	CL1251/AWM
3196/6	6	133/27 Tinned	83.50	.060	.338	115	3196	CL1251/AWM
3196/4	4	133/25 Tinned	133.00	.060	.392	174	3196	CL1251/AWM

- Print Legends:

22, 20, 18, & 16 AWG: E_ _ _ _ _ _ _ _AWG UR AWM STYLE 3173 125C 600V --- _ _ _ _ _ _ _ CSA CL1251 125C 600V AWM I A/B FT-2 SUITABLE FOR "SWITCHBOARD WIRE"
14, 12, & 10 AWG: E_ _ _ _ _ _ _ _AWG SIS (UL) 600V AND AWM 3173 --- _ _ _ _ _ _ _ CSA CL 1251 600V AWM I A/B FT-2 125C
8 AWG: E_ _ _ _ _ _ 8AWG SIS (UL) 600V AND AWM 3195 --- _ _ _ _ _ _ _ CSA CL 1251 OR AWM I A/B 125C 600V FT2
6 & 4 AWG: E_ _ _ _ _ _ _AWG SIS (UL) 600V AND AWM STYLE 3196 --- LL_ _ _ _ _ CSA CL 1251 OR AWM I A/B 125C 600V FT2

- We can stripe, print, respool or drum pack to your customized specifications.
- Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- Stocked in various solid colors:

Green	Light green	Purple	White
Gray	Orange	Red	Yellow
Light blue	Pink	Tan	

3289/3271

Exar 150®/150C/600 Volts CSA AWM

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation in.	Nominal Insulation mm.	Nominal Diameter in.	Nominal Diameter mm.	Approx. Lbs./Mft	UL Type	C.S.A. Type	Ampacity
3289/22BLK	22	7/30	.030	.760	.031	.790	5.81	3289/3271	AWM	14
3289/20BLK	20	7/28	.030	.760	.038	.970	7.85	3289/3271	AWM	18
3289/18BLK	18	16/30	.030	.760	.045	1.14	9.52	3289/3271	AWM	25
3289/16BLK	16	26/30	.030	.760	.058	1.47	13.3	3289/3271	AWM	31
3289/14BLK	14	41/30	.030	.760	.073	1.85	19	3289/3271	AWM	46
3289/12BLK	12	65/30	.030	.760	.093	2.36	27.1	3289/3271	AWM	60
3289/10BLK	10	65/28	.030	.760	.111	2.82	40.5	3289/3271	AWM	80
3289/8BLK	8	84/27	.060	1.14	.147	3.73	69.2	3289/3271	AWM	106
3289/6BLK	6	84/25	.060	1.52	.183	4.65	111.5	3289/3271	AWM	155
3289/4BLK	4	133/25	.060	1.52	.263	6.68	170.9	3289/3271	AWM	190
3289/2BLK	2	259/26	.060	1.52	.323	8.20	254.5	3289/3271	AWM	255
3289/1BLK	1	259/25	.060	1.52	.372	9.44	335.2	3289/3271	AWM	293
3289/1/0BLK	1/0	259/24	.080	2.03	.424	10.77	421	3289/3271	AWM	339
3289/2/0BLK	2/0	259/23	.080	2.03	.465	11.81	507.2	3289/3271	AWM	390
3289/3/0BLK	3/0	259/22	.080	2.03	.520	13.21	627.2	3289/3271	AWM	451
3289/4/0BLK	4/0	259/21	.080	2.03	.586	14.80	776.8	3289/3271	AWM	529

- Can be used for electrical motors, coil winding, electrical coils, transformers, thermal sensors, fax machines, lighting devices, appliances, electronic devices, heaters, thermal protectors, printers, copiers, and switchboards.
- Irradiated cross-linked polymetric insulation possesses remarkable mechanical, flame resistance, and electrical properties.
- It is compatible with many types of magnet wire and varnishes at bake temperatures up to 190C and processes extremely well on the latest high speed cut and strip machines.
- This product has unusally high chemical resistance including many potting compounds, toners, and solvents.
- We can stripe, print, or respool to your customized specifications.
- Buy standard put-ups or multiples of standard put-ups for quicker delivery.

3321/3505

Chemically Cross-linked Polyethylene Insulation (XLP) (150C) (600 Volts) (CSA FT 1)

WCWC P/N	AWG Size	Conductor Stranding	Copper Wgt. Lbs./Mft	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft	UL Type	C.S.A. Type
3321/20	20	10/30 Tinned	3	.030	.103	7	3321/3505	CL1503/AWM
3321/18	18	16/30 Tinned	5	.030	.110	10	3321/3505	CL1503/AWM
3321/16	16	26/30 Tinned	8	.030	.121	13	3321/3505	CL1503/AWM
3321/14	14	41/30 Tinned	13	.030	.138	19	3321/3505	CL1503/AWM
3321/12	12	65/30 Tinned	20	.030	.157	27	3321/3505	CL1503/AWM
3321/10	10	105/30 Tinned	32	.030	.187	42	3321/3505	CL1503/AWM
3321/8	8	133/29 Tinned	52	.045	.257	66	3321/3505	CL1503/AWM
3321/6	6	133/27 Tinned	82	.060	.335	113	3321/3505	CL1503/AWM

- Print Legend: E_ _ _ _ _ _ _AWG RU AWM 3321 OR 3505 150C 600V ac 750V dc --- _ _ _ _ _ _ CSA CL1503 OR AWM I A 150C 600V FT1
- Can be used in appliances, transformers, electrical & gas heating, motors, ballast, lighting, hairdressing and cooking equipment.
- We can stripe, print, respool or drum pack to your customized specifications.
- Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- Stocked in various solid colors:

Black	Light blue	Purple
Blue	Light green	Red
Brown	Orange	Tan
Green	Pink	White
Gray		Yellow

Take note!

WCWC can ink jet print in black and white

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E/1213/1371

Type E Teflon® (-60C to 200C) (600 Volts)
UL1213 (-60C to 105C) (Voltage - na)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft	UL Style
E28	28	7/36 SPC	.010	.035	1.23	1213/1371
E26	26	7/34 SPC	.010	.039	1.74	1213/1371
E26F	26	19/38 SPC	.010	.039	1.78	1213/1371
E24	24	7/32 SPC	.010	.044	2.35	1213/1371
E24F	24	19/36 SPC	.010	.045	2.46	1213/1371
E22	22	7/30 SPC	.010	.048	3.33	1213/1371
E22F	22	19/34 SPC	.010	.051	3.43	1213/1371
E20	20	7/28 SPC	.010	.057	4.98	1213/1371
E20F	20	19/32 SPC	.010	.058	5.10	1213/1371
E18	18	7/26 SPC	.010	.069	7.70	1213/1371
E18F	18	19/30 SPC	.010	.069	7.75	1213/1371
E16	16	19/29 SPC	.010	.080	10.00	*1213/1371
E14	14	19/27 SPC	.013	.095	16.00	*1371
E12	12	19/25 SPC	.013	.114	24.00	*1371
E10	10	37/26 SPC	.013	.134	34.00	*1371

- ❑ Can be used for internal wiring of electrical equipment where exposed to mechanical abuse for high temperature applications in computers, business machines, meters and electronic equipment.
- ❑ SPC is silver plated copper conductor.
- ❑ UL requires slightly different strand size on 16 AWG and larger.
- ❑ No imprint required for Military or UL. UL requires UL tags.
- ❑ 18 AWG and smaller is UL tagged.
- ❑ 16 AWG and larger is MIL-SPEC only. UL/CSA is available on a special order basis.
- ❑ CSA material rated 150C, 150 volts, and type AWM.
- ❑ Teflon® is a trademark of Dupont.
- ❑ Meets NEMA HP3 and is made to old MIL-W-16878 specification.

EE/1180

Type EE Teflon® (-60C to 200C) (1000 volts)
UL 1180 (-60C to 200C) (300 volts)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	UL Style
EE24	24	7/32 SPC	.015	.054	3.25	1180
EE24F	24	19/36 SPC	.015	.054	3.70	1180
EE22	22	7/30 SPC	.015	.060	4.19	1180
EE22F	22	19/34 SPC	.015	.061	4.32	1180
EE20	20	7/28 SPC	.015	.068	5.85	1180
EE20F	20	19/32 SPC	.015	.069	6.10	1180
EE18	18	7/26 SPC	.015	.079	8.35	1180
EE18F	18	19/30 SPC	.015	.080	8.52	1180
EE16	16	19/29 SPC	.015	.090	11.00	*1180
EE14	14	19/27 SPC	.017	.106	17.00	*1180
EE12	12	19/25 SPC	.017	.125	25.00	*1180
EE10	10	37/26 SPC	.017	.145	37.00	*1180
EE8	8	133/29 SPC	.020	.210	64.00	*1180
EE6	6	133/27 SPC	.030	.263	122.00	*1180

* UL approval requires special stranding. Consult your salesperson for details and availability

- ❑ Can be used for internal wiring of electrical equipment where exposed to mechanical abuse for high temperature applications in computers, business machines, meters and electronic equipment.
- ❑ SPC is silver plated copper conductor.
- ❑ UL requires slightly different strand size on 16 AWG and larger.
- ❑ No imprint required for Military or UL. UL requires UL tags.
- ❑ 18 AWG and smaller is UL tagged.
- ❑ 16 AWG and larger is MIL-SPEC only. UL/CSA is available on a special order basis.
- ❑ CSA material rated 150C, 150 volts, and type AWM.
- ❑ Teflon® is a trademark of Dupont.
- ❑ Meets NEMA HP3 and is made to old MIL-W-16878 specification.

EPDM/3340/3374/CSA CL1503/ AWM

(Ethylene-propylene-diene Monomer) (125C/Flexing, 150C/Non-Flexing) (600 Volts)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	Cu. Wgt. Lbs./Mft.	UL Style	CSA Type
EP150/18BLK	18	16/30 Tinned	.045	.140	12.5	5	3340/3374	CL1503/AWM
EP150/16BLK	16	26/30 Tinned	.045	.153	17	8	3340/3374	CL1503/AWM
EP150/14BLK	14	41/30 Tinned	.045	.168	22	13	3340/3374	CL1503/AWM
EP150/12BLK	12	65/30 Tinned	.045	.187	31.5	20	3340/3374	CL1503/AWM
EP150/10BLK	10	105/30 Tinned	.045	.216	46	32	3340/3374	CL1503/AWM
EP150/8BLK	8	84/27 Tinned	.060	.297	79	52	3340/3374	CL1503/AWM
EP150/6BLK	6	133/27 Tinned	.060	.345	112.5	82	3340/3374	CL1503/AWM
EP150/4BLK	4	133/25 Tinned	.060	.392	168	133	3340/3374	CL1503/AWM
EP150/2FFBLK	2	665/30 Tinned	.060	.465	258	210	3340/3374	CL1503/AWM
EP150/1FFBLK	1	833/30 Tinned	.080	.520	323	260	3340/3374	CL1503/AWM
EP150/1/0FFBLK	1/0	1064/30 Tinned	.080	.550	393	335	3340/3374	CL1503/AWM
EP150/2/0FFBLK	2/0	1330/30Tinned	.080	.620	492	420	3340/3374	CL1503/AWM
EP150/3/0FFBLK	3/0	1672/30Tinned	.080	.694	590	518	3340/3374	CL1503/AWM
EP150/4/0FFBLK	4/0	2109/30 Tinned	.080	.720	743	665	3340/3374	CL1503/AWM

- Print Legend: E_ _ _ _ _ _ _ _AWG RU Style AWM3340 or 3374 125C (Flex)/150C (No-flex) 600V EP. LL_ _ _ _ _CSA CL1503 or AWM 1 A/B 125C 600V FT2-Made in USA.
- Can be used as appliance wire and as lead wire for motors, transformers, coils, ballasts or solenoids where high temperature is required.
- Stocked in black.

Lead Wire

EPDM/3499 - High Voltage

(Ethylene-propylene-diene Monomer) (150C) (7500 Volts)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	Cu. Wgt. Lbs./Mft.	UL Style
EP150/8BLK7.5	8	84/27 Tinned	.125	.431	117	52	3499
EP150/6BLK7.5	6	84/25 Tinned	.125	.473	157	82	3499
EP150/4BLK7.5	4	133/25 Tinned	.125	.526	219	133	3499
EP150/2FFBLK7.5	2	665/30 Tinned	.125	.560	296	210	3499
EP150/1/0FFBLK7.5	1/0	1064/30 Tinned	.125	.635	434	335	3499
EP150/2/0FFBLK7.5	3/0	1330/30 Tinned	.125	.690	529.5	420	3499
EP150/3/0FFBLK7.5	3/0	1672/30 Tinned	.125	.740	646	518	3499
EP150/4/0FFBLK7.5	4/0	2109/30 Tinned	.125	.800	795	665	3499

- Print Legend: E_ _ _ _ _ _ _ _AWG RU AWM 3499 150C 7500V EP-Made in USA.
- Can be used as appliance wire and as lead wire for motors, appliance, transformers, coils, ballasts, or solenoids where high temperature and high voltage are required.
- EPDM has good dielectric strength, excellent abrasion resistance, excellent low temperature flexibility and stripping ability.
- Buy standard put-ups or multiples of standard put-ups for better pricing and quicker delivery.
- Stocked in black.

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SIS/XHHW-2

Chemically Cross-linked Polyethylene (XLP) (90C) (600 Volts) (VW-1) (FT 1)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	UL Type	C.S.A. Type
SIS14	14	7/22 Tinned	.030	.147	17	SIS/VW-1	SIS FT1
SIS14F	14	41/30 Tinned	.030	.150	20	SIS/VW-1	SIS FT1
SIS12	12	7/20 Tinned	.030	.156	23	SIS/VW-1	SIS FT1
SIS12F	12	65/30 Tinned	.030	.160	28	SIS/VW-1	SIS FT1
SIS10F	10	105/30 Tinned	.030	.190	41	SIS/VW-1	SIS FT1
SIS8F	8	133/29 Tinned	.045	.270	74	SIS/VW-1	SIS FT1
SIS6F	6	133/27 Tinned	.045	.304	105	SIS/VW-1	SIS FT1
SIS4F	4	133/25 Tinned	.045	.368	162	SIS/VW-1	SIS FT1
SIS2F	2	133/23 Tinned	.045	.441	252	SIS/VW-1	SIS FT1
SIS1/0F	1/0	1064/30 Tinned	.080	.575	410	SIS/VW-1	SIS FT1
SIS2/0F	2/0	1330/30 Tinned	.080	.605	503	SIS/VW-1	SIS FT1
SIS3/0F	3/0	1672/30 Tinned	.080	.682	617	SIS/VW-1	SIS FT1
SIS4/0F	4/0	2019/30 Tinned	.080	.747	773	SIS/VW-1	SIS FT1

- ❑ Can be used for instrument and control wiring of switchboards, annunciator circuits and industrial control.
- ❑ We can stripe, print, respool or drum pack to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for better pricing and quicker delivery.
- ❑ Stocked in gray.

SR/3212/3213/3214

Braidless Fixture, Apparatus and Motor Lead (600 Volts) (150C)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	UL Style	CSA Type
SR18	18	16/30 Tinned	.045	.135	12	3212	AWM
SR16	16	26/30 Tinned	.045	.148	16	3212	AWM
SR14	14	41/30 Tinned	.045	.164	22	3212	AWM
SR12	12	65/30 Tinned	.045	.180	31	3212	AWM
SR10	10	105/30 Tinned	.045	.205	45	3212	AWM
SR8	8	133/29 Tinned	.060	.285	80	3213	AWM
SR6	6	133/27 Tinned	.060	.326	116	3213	AWM
SR4	4	133/25 Tinned	.060	.381	172	3213	AWM
SR2	2	259/26 Tinned	.060	.449	254	3213	AWM
SR1	1	259/25 Tinned	.080	.532	325	3214	AWM
SR1/0	1/0	259/24 Tinned	.080	.584	402	3214	AWM
SR2/0	2/0	259/23 Tinned	.080	.625	510	3214	AWM
SR3/0	3/0	259/22 Tinned	.080	.675	630	3214	AWM
SR4/0	4/0	259/21 Tinned	.080	.746	773	3214	AWM

- ❑ Can be used for leads to motors, transformers, appliance, electric or other electrical circuits where a flexible conductor is required to operate under high temperature conditions and where moisture may be present.
- ❑ The conductor is flexible stranded. A silicone compound is applied over the conductor.
- ❑ Braidless silicone is more flexible than silicone with a glass braid (SRML).

SRML/3071/3074/3075/3125/3231

Fiberglass Braided Fixture, Apparatus, and Motor Lead Wire (200C) (600 Volts)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Thickness	Glass Braid Thickness	Nominal Diameter	Approx. Lbs./Mft.	UL Style	UL Type	CSA Type
SRML18	18	7/26 Tinned	.030	.010	.111	13	3071	SF-2	SEW-2
SRML16	16	7/24 Tinned	.030	.010	.122	17	3071	SF-2	SEW-2
SRML14	14	7/22 Tinned	.030	.010	.142	23	3071	SF-2	SEW-2
SRML12	12	19/25 Tinned	.030	.010	.165	30	3074	-	SEW-2
SRML10	10	19/23 Tinned	.045	.010	.217	51	3075	-	SEW-2
SRML8	8	54/25 Tinned	.060	.012	.301	90	3125/3231	-	SEW-2
SRML6	6	84/25 Tinned	.060	.013	.323	121	3125/3231	-	SEW-2
SRML4	4	133/25 Tinned	.060	.013	.406	179	3125/3231	-	SEW-2
SRML2	2	259/26 Tinned	.060	.013	.474	274	3125/3231	-	SEW-2
SRML1	1	259/25 Tinned	.080	.013	.557	394	3231	-	SEW-2
SRML1/0	1/0	259/24 Tinned	.080	.013	.609	434	3231	-	SEW-2
SRML2/0	2/0	259/23 Tinned	.080	.030	.685	536	3231	-	SEW-2
SRML3/0	3/0	259/22 Tinned	.080	.030	.735	670	3231	-	SEW-2
SRML4/0	4/0	259/21 Tinned	.080	.030	.808	806	3231	-	SEW-2

- Can be used for leads to motors, transformers, appliance, electric or other electrical circuits where a flexible conductor is required to operate under high temperature conditions and where moisture may be present.
- The conductor is flexible stranded. A silicone compound is applied over the conductor and the wire is then covered with a saturated fray-resistant fiberglass braid.

3239/10475

Braidless Silicone Rubber High Voltage, High Temperature Appliance Lead Wire 15 KVDC, 25 KVDC, 40 KVDC (150C) (VW-1)

WCWC P/N	AWG Size	Conductor Stranding	Copper Wgt. Lbs./Mft.	Nominal Insulation	Nominal Diameter	D.C Voltage	UL Style	Approx. Lbs./Mft.
3239/22-15KV	22	7/30 Tinned	2.20	.045	.115	15KV	3239	8
3239/22-25KV	22	7/30 Tinned	2.20	.062	.149	25KV	3239	11
3239/22-40KV	22	7/30 Tinned	2.20	.097	.219	40KV	3239	21
3239/20-15KV	20	7/28 Tinned	3.09	.045	.128	15KV	3239	10
3239/20-25KV	20	7/28 Tinned	3.09	.062	.162	25KV	3239	14
3239/20-40KV	20	7/28 Tinned	3.09	.097	.232	40KV	3239	25
3239/18-15KV	18	16/30 Tinned	4.94	.045	.135	15KV	3239	12
3239/18-25KV	18	16/30 Tinned	4.94	.062	.169	25KV	3239	16
3239/18-40KV	18	16/30 Tinned	4.94	.097	.239	40KV	3239	28
3239/16-15KV	16	26/30 Tinned	8.03	.045	.148	15KV	3239	16
3239/16-25KV	16	26/30 Tinned	8.03	.062	.182	25KV	3239	21
3239/16-40KV	16	26/30 Tinned	8.03	.097	.252	40KV	3239	33
3239/14-15KV	14	41/30 Tinned	12.66	.045	.164	15KV	3239	22
3239/14-25KV	14	41/30 Tinned	12.66	.062	.198	25KV	3239	27
3239/14-40KV	14	41/30 Tinned	12.66	.097	.268	40KV	3239	40
3239/12-15KV	12	65/30 Tinned	20.80	.045	.181	15KV	3239	31
3239/12-25KV	12	65/30 Tinned	20.80	.062	.215	25KV	3239	36
3239/12/40KV	12	65/30 Tinned	20.80	.097	.285	40KV	3239	50
3239/10-15KV	10	105/30 Tinned	32.50	.045	.214	15KV	3239	44
3239/10-25KV	10	105/30 Tinned	32.50	.062	.248	25KV	3239	51
3239/10-40KV	10	105/30 Tinned	32.50	.097	.318	40KV	3239	67
10475/8-25KV	8	133/29 Tinned	52.87	.068	.301	25KV	10475	80
10475/6-25KV	6	133/27 Tinned	83.50	.068	.342	25KV	10475	115
10475/4-25KV	4	133/25 Tinned	133.00	.068	.401	25KV	10475	166
10475/2-25KV	2	259/26 Tinned	209.73	.068	.465	25KV	10475	259

- Can be used in stoves, heaters, furnaces, dryers, motors, therapeutic devices, signs, lighting fixtures, aircraft, submarines and special electronic devices where high temperatures are incurred.
- Buy standard put-ups for quicker delivery. Respooling and coiling available.
- Stocked in white. Other colors and voltage ratings available upon request.

3257

Braidless Silicone Rubber High Voltage, High Temperature Appliance Lead Wire 10 KVAC, 25 KVDC (250C)

WCWC P/N	AWG Size	Conductor Stranding	Copper Wgt. Lbs./Mft.	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	UL Style
3257/20RED	20	7 NPC	3.5	.078	.194	19	3257
3257/20HWRED	20	7 NPC	3.5	.112	.262	33	3257
3257/18RED	18	16 NPC	5.0	.078	.200	22	3257
3257/16 RED	16	26 NPC	8.0	.078	.2125	27	3257
*3257/16HWRED	16	26 NPC	8.0	.111	.278	41	3257
3257/14RED	14	41 NPC	12.5	.078	.228	34	3257
3257/12RED	12	65 NPC	20.0	.078	.249	44	3257

*Wall increased from .078" to .111" to an increased OD of .278" in order to dual rate and print 16 AWG as 7mm ignition wire.

- ❑ Can be used in high voltage and/or high temperature applications such as gas appliance ignitor systems, oil burner ignition circuits, gas fired infra-red heaters and furnaces where protected from repeated flexing, abrasion and physical damage.
- ❑ Buy standard put-ups for quicker delivery. Respooling and coiling available.
- ❑ Stocked in red. Other colors and voltage ratings available upon request.

TGGS/5256

(TGGS replaces TGGT)
Apparatus Wire (250C) (600 Volts) (UL VW-1 and CSA FT 1)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insul. Inch	Nominal Insul. mm	Diameter Inch	Diameter mm	Approx. Wt #/ Mft.	Approx. Wt #/ Kg./Km.	UL Style	CSA Type
TGGS24	24	7/32 NPC	.015	.381	.069	1.75	3.84	5.72	5256	Class 1, Group A/B AWM
TGGS22	22	7/30 NPC	.015	.381	.075	1.91	5.06	7.53	5256	Class 1, Group A/B AWM
TGGS20	20	10/30 NPC	.015	.381	.081	2.06	6.59	9.8	5256	Class 1, Group A/B AWM
TGGS18	18	16/30 NPC	.015	.381	.090	2.29	8.94	13.3	5256	Class 1, Group A/B AWM
TGGS16	16	26/30 NPC	.018	.457	.108	2.74	13.5	20.1	5256	Class 1, Group A/B AWM
TGGS14	14	41/30 NPC	.018	.457	.123	3.12	19.5	29.0	5256	Class 1, Group A/B AWM
TGGS12	12	65/30 NPC	.018	.457	.144	3.66	28.6	42.6	5256	Class 1, Group A/B AWM
TGGS10	10	105/30 NPC	.018	.457	.181	4.60	42.8	63.7	5256	Class 1, Group A/B AWM
TGGS8	8	133/29 NPC	.018	.457	.213	5.41	64.3	95.7	5256	Class 1, Group A/B AWM
TGGS6	6	133/27 NPC	.023	.584	.274	6.96	103	153	5256	Class 1, Group A/B AWM
TGGS4	4	133/25 NPC	.023	.584	.327	8.31	156	232	5256	Class 1, Group A/B AWM
TGGS2	2	133/23 NPC	.023	.584	.411	10.4	244	363	5256	Class 1, Group A/B AWM

- ❑ TGGS gives you the advantage of small diameter due to the reduced wall, yet still gives you the same temperature and voltage of the TGGT it replaces.
- ❑ TGGS is superior to TGGT in cutting and stripping.
- ❑ TGGS (silicone) reduces or eliminates the skin irritation caused by TGGT (Teflon®).
- ❑ Can be used for wiring of domestic, commercial and industrial ovens, cooking, curing and drying equipment and similar high temperature severe environments including electric heaters, blast furnaces and cement kilns.
- ❑ Flexible, stranded nickel-plated copper (NPC) conductor insulated with a composite of polytelrafluoroethylene (PTFE) tape and fiberglass serve jacketed with an overall fiberglass braid saturated and cured with a silicone saturant. Asbestos and halogen free.
- ❑ Stocked in natural color.

MGS/5359

(MGS SLIPSTRIP R replaces MGT)
Apparatus Wire (450C) (600 Volts) (UL VW-1 and CSA FT 1)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insul. Inch	Nominal Insul. mm	Diameter Inch	Diameter mm	Approx. Wt Lbs./Mft.	Approx. Wt Kg./Km.	UL Style	CSA Type
MGS22	22	7/30 NPC	.016	.410	.077	1.96	4.78	7.11	5359	Class 1, Group A/B (AWM)
MGS20	20	10/30 NPC	.016	.410	.083	2.10	6.27	9.33	5359	Class 1, Group A/B (AWM)
MGS18	18	16/30 NPC	.016	.410	.092	2.32	8.52	12.7	5359	Class 1, Group A/B (AWM)
MGS16	16	26/30 NPC	.016	.410	.104	2.63	12.2	18.1	5359	Class 1, Group A/B (AWM)
MGS14	14	41/30 NPC	.016	.410	.119	3.02	17.9	26.7	5359	Class 1, Group A/B (AWM)
MGS12	12	65/30 NPC	.016	.410	.140	3.56	26.7	39.8	5359	Class 1, Group A/B (AWM)
MGS10	10	105/30 NPC	.020	.510	.185	4.70	41.9	62.3	5359	Class 1, Group A/B (AWM)
MGS8	8	133/29 NPC	.020	.510	.227	5.77	65.8	97.9	5359	Class 1, Group A/B (AWM)
MGS6	6	133/27 NPC	.020	.510	.268	6.81	98.7	147	5359	Class 1, Group A/B (AWM)
MGS4	4	133/25 NPC	.020	.510	.321	8.15	151	224	5359	Class 1, Group A/B (AWM)
MGS2	2	133/23 NPC	.025	.640	.415	10.50	241	359	5359	Class 1, Group A/B (AWM)

- ❑ MGS SLIPSTRIP R gives you the advantage of a smaller diameter due to the reduced wall yet still gives you the same temperature and voltage of the MGT it replaces.
- ❑ MGS is superior to MGT in cutting and stripping.
- ❑ MGS (silicone) reduces or eliminates the skin irritation caused by MGT (Teflon®).
- ❑ Can be used for wiring of domestic and commercial ovens and similar high temperature equipment with operating temperatures up to 450C. Also used for electric heaters, blast furnaces, coke ovens, basic oxygen furnaces and cement kilns.
- ❑ Flexible, stranded, 27% nickel-plated conductor (NPC) insulated with a spiral wrapped composite mica tape jacketed with an overall fiberglass braid impregnated with a silicone saturant. Asbestos and halogen free.
- ❑ Stocked in natural color.

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Boat Cable/1426/BC-5W2

Flat Multi-conductor Marine Cable Polyvinylchloride (PVC) White Jacket (105C Dry) (75C Wet) (600 Volts)

WCWC P/N	AWG Size	No. of Conductors	Conductor Stranding	Insulation in Inches	Jacket in Inches	Approx. Dimensions	Approx. Lbs./Mft.
BC1602MWHT	16	2	26/30 Tinned	0.030	0.030	.204 X .328	44
BC1603MWHT	16	3	26/30 Tinned	0.030	0.030	.204 X .452	64
BC1402MWHT	14	2	41/30 Tinned	0.030	0.030	.221 X .362	59
BC1403MWHT	14	3	41/30 Tinned	0.030	0.030	.220 X .500	85
BC1202MWHT	12	2	65/30 Tinned	0.030	0.030	.238 X .396	78
BC1203MWHT	12	3	65/30 Tinned	0.030	0.030	.240 X .560	114
BC1002MWHT	10	2	105/30 Tinned	0.030	0.030	.274 X .468	113
BC1003MWHT	10	3	105/30 Tinned	0.030	0.030	.275 X .665	168

- ❑ Can be used for marine and brake cable.
- ❑ Meets UL Standard 1426 and UL style BC-5W2.
- ❑ Type III stranding and is tinned copper to resist corrosion.
- ❑ Color code: 2 conductor is black, white; 3 conductor is black, green, white.
- ❑ Outer jacket is white.
- ❑ Consult your salesperson for availability of other color codes and jacket colors.
- ❑ Buy standard put-ups for quicker delivery. Respooling available.

GPTM (Tinned Copper)

Polyvinylchloride (PVC) Marine Wire SAE J-1128 and SAE J-378 (-40C to 105C)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.
GPTM18TC	18	16/30 Tinned	.023	.092	8.1
GPTM16TC	16	19/29 Tinned	.023	.103	10.8
GPTM14TC	14	19/27 Tinned	.023	.117	16
GPTM12TC	12	19/25 Tinned	.026	.142	24.5
GPTM10TC	10	19/23 Tinned	.031	.177	38.6
GPTM8TC	8	19/21 Tinned	.037	.222	61.2

- ❑ Can be used in 105C marine applications and general circuit wiring.
- ❑ Marine spec printed, "MARINE SAE J378 and J-1128 105C ____ AWG".
- ❑ We can stripe, print, respool or drum pack to your customized specifications.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.
- ❑ Stocked in various solid colors:

Black	Light blue	Purple
Blue	Light green	Red
Brown	Orange	Tan
Green	Pink	White
Gray		Yellow

SPT

Polyvinylchloride (PVC) (300 Volts) (105C) (UL & CSA)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	UL/CSA Listed
SPT-1							
SPT11802	18	2	41/34 Bare	.030	.111 x .208	19	SPT-1
SPT11803	18	3	41/34 Bare	.030	.120 x .296	29	SPT-1
SPT-2							
SPT21802	18	2	41/34 Bare	.045	.140 x .270	26	SPT-2
SPT21803	18	3	41/34 Bare	.045	.143 x .334	36	SPT-2
SPT21602	16	2	65/34 Bare	.045	.156 x .302	35	SPT-2
SPT21603	16	3	65/34 Bare	.045	.154 x .375	48	SPT-2
SPT-3							
SPT31802	18	2	16/30 Bare	.060	.177 x .336	36	SPT-3
SPT31803	18	3	16/30 Bare	.060	.175 x .385	45	SPT-3
SPT31602	16	2	26/30 Bare	.060	.190 x .363	45	SPT-3
SPT31603	16	3	26/30 Bare	.060	.187 x .429	58	SPT-3
SPT31402	14	2	41/30 Bare	.075	.235 x .430	69	SPT-3
SPT31403	14	3	41/30 Bare	.075	.235 x .510	89	SPT-3
SPT31202	12	2	65/30 Bare	.080	.290 x .490	101	SPT-3
SPT31203	12	3	65/30 Bare	.080	.281 x .600	131	SPT-3

- ❑ Can be used for fans, clocks, lamps, radios, small display signs and similar appliances where cord is not subject to hard usage.
- ❑ Three conductor wires have green center wire for ground use only.
- ❑ One side is ribbed for circuit identification.
- ❑ Normal colors are black, brown, and white.
- ❑ Buy standard put-ups or multiples of standard put-ups for quicker delivery.

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SJTOOW Portable Service Cord

Polyvinylchloride (PVC) (-40C to 105C) (300 Volts) VW-1 UL Listed/CSA Certified

WCWC P/N	AWG Size	NO. of Cond.	Conductor Stranding	Nominal Insulation	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.	Ampacity NEC*
SJTO1802	18	2	16/30 Bare	.030	.030	.286	37.7	10
SJTO1803	18	3	16/30 Bare	.030	.030	.305	58.4	7
SJTO1804	18	4	16/30 Bare	.030	.030	.330	64.5	7
SJTO1602	16	2	26/30 Bare	.030	.030	.315	46.5	13
SJTO1603	16	3	26/30 Bare	.030	.030	.330	61	10
SJTO1604	16	4	26/30 Bare	.030	.030	.355	80.7	10
SJTO1402	14	2	41/30 Bare	.030	.030	.343	56.9	18
SJTO1403	14	3	41/30 Bare	.030	.030	.365	80.2	15
SJTO1404	14	4	41/30 Bare	.030	.030	.395	99	15
SJTO1202	12	2	65/30 Bare	.030	.030	.415	87.1	25
SJTO1203	12	3	65/30 Bare	.030	.045	.430	136.8	20
SJTO1204	12	4	65/30 Bare	.030	.045	.475	150.9	20
SJTO1002	10	2	104/30 Bare	.045	.045	.546	151.3	30
SJTO1003	10	3	104/30 Bare	.045	.060	.575	240.7	25
SJTO1004	10	4	104/30 Bare	.045	.060	.630	N/A	25

*Per table 400-5 (A) of the NEC.

- ❑ All sizes are fillerless except the 18/2 conductor which has polypropylene fillers as required by UL.
- ❑ Indent Print Legend.
- ❑ Can be used for portable power use when a thermoplastic cord is needed with greater flexibility and resistance to oils, lubricants, and grease. For use in machine shops, mills, garages, aircraft maintenance facilities, machine tools, portable power equipment, portable appliances, mixers, washing machines and polishers. A tough PVC jacket offers superior physical properties and extended service life.
- ❑ Color code: 2 conductor is black, white; 3 conductor is black, white, green; 4 conductor is black, white, red, green.
- ❑ Stocked with black or white outer jacket. Consult your salesperson for other jacket colors.

STOW Portable Service Cord

Polyvinylchloride (PVC) (-35C to 60C) (600 Volts) UL Listed/CSA Certified

WCWC P/N	AWG Size	NO. of Cond.	Conductor Stranding	Nominal Insulation	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.	Ampacity NEC*
STO1802	18	2	16/30 Bare	.030	.060	.340	61	10
STO1803	18	3	16/30 Bare	.030	.060	.370	77	10
STO1804	18	4	16/30 Bare	.030	.060	.395	90	7
STO1602	16	2	26/30 Bare	.030	.060	.375	68	13
STO1603	16	3	26/30 Bare	.030	.060	.390	87	13
STO1604	16	4	26/30 Bare	.030	.060	.420	105	10
STO1402	14	2	41/30 Bare	.045	.080	.505	128	18
STO1403	14	3	41/30 Bare	.045	.080	.530	152	18
STO1404	14	4	41/30 Bare	.045	.080	.575	185	15
STO1202	12	2	65/30 Bare	.045	.095	.575	184	25
STO1203	12	3	65/30 Bare	.045	.095	.600	209	25
STO1204	12	4	65/30 Bare	.045	.095	.650	255	20
STO1002	10	2	105/30 Bare	.045	.095	.625	219	30
STO1003	10	3	105/30 Bare	.045	.095	.660	271	30
STO1004	10	4	105/30 Bare	.045	.095	.715	333	25
STO0803	8	3	65/.016 Bare	.060	.110	.840	430	40
STO0804	8	4	65/.016 Bare	.060	.125	.950	550	35
STO0603	6	3	133/.014 Bare	.060	.125	.990	605	55
STO0604	6	4	133/.014 Bare	.060	.140	1.100	780	45

*Per table 400-5(A) of the NEC.

- ❑ Can be used for portable power use when a thermoplastic cord is needed with greater flexibility and resistance to oils, lubricants and grease. For use in machine shops, mills, garages, aircraft maintenance facilities, machine tools, portable power equipment, portable appliances, mixers, washing machines, and polishers. A tough PVC jacket offers superior physical properties and extended service life.
- ❑ Color code: 2 conductor is black, white; 3 conductor is black, white, green; 4 conductor is black, white, red, green.

SJOOW Portable Service Cord

(-40C to 90C) (300 Volts) UL Listed/CSA Certified

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Nominal Insulation	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.	Ampacity NEC*
SJO1802	18	2	16/30 Bare	.030	.030	.29	45	10
SJO1803	18	3	16/30 Bare	.030	.030	.31	55	10
SJO1804	18	4	16/30 Bare	.030	.030	.34	70	7
SJO1602	16	2	26/30 Bare	.030	.030	.31	55	13
SJO1603	16	3	26/30 Bare	.030	.030	.33	70	13
SJO1604	16	4	26/30 Bare	.030	.030	.37	85	10
SJO1402	14	2	41/30 Bare	.030	.030	.34	75	18
SJO1403	14	3	41/30 Bare	.030	.030	.37	95	18
SJO1404	14	4	41/30 Bare	.030	.030	.41	120	15
SJO1202	12	2	65/30 Bare	.030	.045	.42	110	25
SJO1203	12	3	65/30 Bare	.030	.045	.44	145	25
SJO1204	12	4	65/30 Bare	.030	.045	.48	180	20
SJO1002	10	2	104/30 Bare	.045	.060	.57	170	30
SJO1003	10	3	104/30 Bare	.045	.060	.60	240	30
SJO1004	10	4	104/30 Bare	.045	.060	.66	300	25

* Per table 400-5(A) of the NEC.

- ❑ Can be used indoors and outdoors for garages, portable lights, battery chargers, portable stage lights, heavy tools and equipment exposed to oils, water and acids.
- ❑ Stocked with black outer jacket.
- ❑ Color code: 2 conductor is black, white; 3 conductor is black, white, green; 4 conductor is black, white, green, red.

SOOW Portable Service Cord

(-40C to 90C) (600 Volts) UL Listed/CSA Certified

WCWC P/N	AWG Size	NO. of Cond.	Conductor Stranding	Nominal Insulation	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.	Ampacity NEC*
SO1802	18	2	16/30 Bare	.030	.060	.35	70	10
SO1803	18	3	16/30 Bare	.030	.060	.37	80	10
SO1804	18	4	16/30 Bare	.030	.060	.40	95	7
SO1602	16	2	26/30 Bare	.030	.060	.37	80	13
SO1603	16	3	26/30 Bare	.030	.060	.40	95	13
SO1604	16	4	26/30 Bare	.030	.060	.43	120	10
SO1402	14	2	41/30 Bare	.045	.080	.51	145	18
SO1403	14	3	41/30 Bare	.045	.080	.54	170	18
SO1404	14	4	41/30 Bare	.045	.080	.58	210	15
SO1202	12	2	65/30 Bare	.045	.095	.58	195	25
SO1203	12	3	65/30 Bare	.045	.095	.61	235	25
SO1204	12	4	65/30 Bare	.045	.095	.66	285	20
SO1002	10	2	104/30 Bare	.045	.095	.64	245	30
SO1003	10	3	104/30 Bare	.045	.095	.67	300	30
SO1004	10	4	104/30 Bare	.045	.095	.73	365	25

*Per table 400-5(A) of the NEC

- ❑ Can be used indoors and outdoors for garages, portable lights, battery chargers, portable stage lights, heavy tools and equipment exposed to oils, water and acids.
- ❑ Stocked with black outer jacket.
- ❑ Color code: 2 conductor is black, white; 3 conductor is black, white, green; 4 conductor is black, white, green, red.
- ❑ Portable control cable of 5 conductors or more is also available.

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SJEOOW Service Cord

UL Listed SJEOOW (-50C to 105C) (300 Volts)
CSA Approved SJTOOW (-50C to 105C) (300 Volts)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Nominal Insulation	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.	Ampacity NEC *
SJEO1802	18	2	16/30 Bare	.031	.035	.285	44	10
SJEO1803	18	3	16/30 Bare	.031	.038	.310	55	10
SJEO1804	18	4	16/30 Bare	.031	.034	.330	66	7
SJEO1602	16	2	26/30 Bare	.031	.035	.315	54	13
SJEO1603	16	3	26/30 Bare	.031	.035	.330	69	13
SJEO1604	16	4	26/30 Bare	.031	.032	.355	83	10
SJEO1402	14	2	41/30 Bare	.031	.034	.340	72	18
SJEO1403	14	3	41/30 Bare	.031	.036	.365	91	18
SJEO1404	14	4	41/30 Bare	.031	.033	.395	111	15
SJEO1202	12	2	65/30 Bare	.031	.051	.410	108	25
SJEO1203	12	3	65/30 Bare	.031	.048	.430	131	25
SJEO1204	12	4	65/30 Bare	.031	.049	.470	164	20
SJEO1002	10	2	104/30 Bare	.046	.062	.549	185	30
SJEO1003	10	3	104/30 Bare	.046	.062	.576	225	30
SJEO1004	10	4	104/30 Bare	.046	.062	.640	285	25

*Per table 400-5(A) of the NEC

- ❑ Can be used indoors and outdoors for garages, portable lights, battery chargers, portable stage lights, heavy tools and equipment exposed to oils, water, acids, chemicals, and solvents. Flame retardant with outstanding abrasion resistance.
- ❑ Stocked with black outer jacket.
- ❑ Color code: 2 conductor is black, white; 3 conductor is black, white, green; 4 conductor is black, white, red, green.
- ❑ MSHA, Pennsylvania DEP approved, and Federal spec JC580B.

SEOOW Service Cord

UL Listed SEOOW (-50C to 105C) (600 Volts)
CSA Approved STOOW (-50C to 105C) (600 Volts)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Nominal Insulation	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.	Ampacity NEC *
SEO1802	18	2	16/30 Bare	.031	.065	.345	61	10
SEO1803	18	3	16/30 Bare	.031	.066	.365	71	10
SEO1804	18	4	16/30 Bare	.031	.064	.390	84	7
SEO1602	16	2	26/30 Bare	.031	.065	.370	74	13
SEO1603	16	3	26/30 Bare	.031	.065	.390	87	13
SEO1604	16	4	26/30 Bare	.031	.062	.415	103	10
SEO1402	14	2	41/30 Bare	.046	.084	.500	129	18
SEO1403	14	3	41/30 Bare	.046	.083	.525	151	18
SEO1404	14	4	41/30 Bare	.046	.082	.565	180	15
SEO1202	12	2	65/30 Bare	.046	.101	.570	173	25
SEO1203	12	3	65/30 Bare	.046	.098	.595	203	25
SEO1204	12	4	65/30 Bare	.046	.100	.645	247	20
SEO1002	10	2	104/30 Bare	.046	.097	.620	218	30
SEO1003	10	3	104/30 Bare	.046	.100	.655	265	30
SEO1004	10	4	104/30 Bare	.046	.097	.705	324	25

* Per table 400-5(A) of the NEC.

- ❑ Can be used indoors and outdoors for garages, portable lights, battery chargers, portable stage lights, heavy tools and equipment exposed to oils, water, acids, chemicals, and solvents. Flame retardant with outstanding abrasion resistance.
- ❑ Stocked with black outer jacket.
- ❑ Color code: 2 conductor is black, white; 3 conductor is black, white, green; 4 conductor is black, white, red, green.
- ❑ Control cable (5 conductors or more) also available.
- ❑ MSHA, Pennsylvania DEP approved, and Federal spec JC580B.

SEOOW 18 & 16 Awg Service Cord Multi-Conductor

UL Listed SEOOW (-50C to 105C) (600 Volts)
CSA Approved STOOW (-50C to 105C) (600 Volts)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Nominal Insulation	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.	Ampacity NEC *
SEO1805	18	5	16/30 Bare	.031	.083	.465	112	5.6
SEO1806	18	6	16/30 Bare	.031	.080	.484	119	5.6
SEO1807	18	7	16/30 Bare	.031	.080	.484	132	5.6
SEO1808	18	8	16/30 Bare	.031	.080	.517	143	5.6
SEO1810	18	10	16/30 Bare	.031	.080	.592	171	4.9
SEO1812	18	12	16/30 Bare	.031	.080	.610	193	4.9
SEO1814	18	14	16/30 Bare	.031	.080	.636	219	3.5
SEO1816	18	16	16/30 Bare	.031	.095	.695	256	3.5
SEO1820	18	20	16/30 Bare	.031	.095	.763	290	3.5
SEO1824	18	24	16/30 Bare	.031	.095	.838	359	3.5
SEO1605	16	5	26/30 Bare	.031	.080	.495	135	3.15
SEO1606	16	6	26/30 Bare	.031	.080	.520	158	8
SEO1607	16	7	26/30 Bare	.031	.080	.520	165	8
SEO1608	16	8	26/30 Bare	.031	.080	.560	190	8
SEO1609	16	9	26/30 Bare	.031	.080	.560	202	7
SEO1610	16	10	26/30 Bare	.031	.080	.634	242	7
SEO1612	16	12	26/30 Bare	.031	.095	.690	287	7
SEO1614	16	14	26/30 Bare	.031	.095	.720	311	5
SEO1616	16	16	26/30 Bare	.031	.095	.755	355	5
SEO1620	16	20	26/30 Bare	.031	.095	.827	376	5
SEO1624	16	24	26/30 Bare	.031	.095	.910	465	4.5
SEO1630	16	30	26/30 Bare	.031	.110	.990	532	4.5

- ❑ Can be used for push button remote controls, motor control, indoors and outdoors for garages, portable lights, battery chargers, portable stage lights, temperature controls, heavy tools and equipment exposed to oils, water, acids, chemicals, and solvents. Flame retardant with outstanding abrasion resistance.
- ❑ Stocked with black outer jacket.
- ❑ 5 conductor and more, reference Color Code Chart
- ❑ MSHA, Pennsylvania DEP approved, and Federal spec JC580B.

Color Codes

NUMBER OF CONDUCTORS	CONDUCTOR COLOR	FIRST TRACER COLOR	SECOND TRACER COLOR
1	BLACK	N/A	N/A
2	WHITE	N/A	N/A
3*	RED	N/A	N/A
4	GREEN	N/A	N/A
5	ORANGE	N/A	N/A
6	BLUE	N/A	N/A
7	WHITE	BLACK	N/A
8	RED	BLACK	N/A
9	GREEN	BLACK	N/A
10	ORANGE	BLACK	N/A
11	BLUE	BLACK	N/A
12	BLACK	WHITE	N/A
13	RED	WHITE	N/A
14	GREEN	WHITE	N/A
15	BLUE	WHITE	N/A
16	BLACK	RED	N/A
17	WHITE	RED	N/A
18	ORANGE	RED	N/A
19	BLUE	RED	N/A
20	RED	GREEN	N/A
21	ORANGE	GREEN	N/A
22	BLACK	WHITE	RED
23	WHITE	BLACK	RED
24	RED	BLACK	WHITE
25	GREN	BLACK	WHITE
26	ORANGE	BLACK	WHITE
27	BLUE	BLACK	WHITE
28	BLACK	RED	GREEN
29	WHITE	RED	GREEN
30	RED	BLACK	GREEN

SEOOW 14, 12, & 10 Awg Service Cord Multi-Conductor

UL Listed SEOOW (-50C to 105C) (600 Volts)
CSA Approved STOOW (-50C to 105C) (600 Volts)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Nominal Insulation	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.	Ampacity NEC *
SEO1405	14	5	41/30 Bare	.046	.098	.645	232	12
SEO1406	14	6	41/30 Bare	.046	.095	.690	269	12
SEO1407	14	7	41/30 Bare	.046	.095	.690	280	12
SEO1408	14	8	41/30 Bare	.046	.095	.743	323	10.5
SEO1410	14	10	41/30 Bare	.046	.095	.858	423	10.5
SEO1412	14	12	41/30 Bare	.046	.095	.885	464	7.5
SEO1414	14	14	41/30 Bare	.046	.095	.926	518	7.5
SEO1416	14	16	41/30 Bare	.046	.110	1.007	606	7.5
SEO1205	12	5	65/30 Bare	.046	.107	.710	302	16
SEO1206	12	6	65/30 Bare	.046	.095	.745	343	16
SEO1208	12	8	65/30 Bare	.046	.095	.802	416	14
SEO1210	12	10	65/30 Bare	.046	.095	.930	542	14
SEO1212	12	12	65/30 Bare	.046	.110	.990	630	10
SEO1005	10	5	104/30 Bare	.046	.097	.765	387	20
SEO1006	10	6	104/30 Bare	.046	.097	.820	452	20
SEO1007	10	7	104/30 Bare	.046	.095	.845	495	20
SEO1010	10	10	104/30 Bare	.046	.110	1.052	747	17.5
SEO1012	10	12	104/30 Bare	.046	.112	1.091	839	12.5

* Per table 400-5(A) of the NEC.

- ❑ Can be used for push button remote controls, motor control, indoors and outdoors for garages, portable lights, battery chargers, portable stage lights, temperature controls, heavy tools and equipment exposed to oils, water, acids, chemicals, and solvents. Flame retardant with outstanding abrasion resistance.
- ❑ Stocked with black outer jacket.
- ❑ 5 conductor and more, reference Color Code Chart
- ❑ MSHA, Pennsylvania DEP approved, and Federal spec JC580B.

Color Codes

NUMBER OF CONDUCTORS	CONDUCTOR COLOR	FIRST TRACER COLOR	SECOND TRACER COLOR
1	BLACK	N/A	N/A
2	WHITE	N/A	N/A
3*	RED	N/A	N/A
4	GREEN	N/A	N/A
5	ORANGE	N/A	N/A
6	BLUE	N/A	N/A
7	WHITE	BLACK	N/A
8	RED	BLACK	N/A
9	GREEN	BLACK	N/A
10	ORANGE	BLACK	N/A
11	BLUE	BLACK	N/A
12	BLACK	WHITE	N/A
13	RED	WHITE	N/A
14	GREEN	WHITE	N/A
15	BLUE	WHITE	N/A
16	BLACK	RED	N/A
17	WHITE	RED	N/A
18	ORANGE	RED	N/A
19	BLUE	RED	N/A
20	RED	GREEN	N/A
21	ORANGE	GREEN	N/A
22	BLACK	WHITE	RED
23	WHITE	BLACK	RED
24	RED	BLACK	WHITE
25	GREN	BLACK	WHITE
26	ORANGE	BLACK	WHITE
27	BLUE	BLACK	WHITE
28	BLACK	RED	GREEN
29	WHITE	RED	GREEN
30	RED	BLACK	GREEN

SEOOW Portable Service Cord

(-50C to 105C) (600 Volts)

Non-UL Listed/Non-CSA Certified

WCWC P/N	AWG Size	NO. of Cond.	Conductor Stranding	Nominal Insulation	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.	Ampacity NEC*
SEO0803	8	3	96/28	.048	.090	.701	290	40
SEO0804	8	4	96/28	.048	.100	.783	377	35
SEO0805	8	5	96/28	.048	.100	.851	452	28
SEO0602	6	2	96/26	.048	.090	.752	301	55
SEO0603	6	3	96/26	.048	.100	.818	422	55
SEO0604	6	4	96/26	.048	.100	.892	521	45
SEO0403	4	3	96/24	.048	.110	.913	585	70
SEO0404	4	4	96/24	.048	.125	1.027	771	60
SEO0203	2	3	7x17/.0223	.050	.128	1.158	940	95
SEO0204	2	4	7x17/.0223	.050	.125	1.267	1170	80

*Per table 400-5(B) of the NEC

- Can be used indoors and outdoors for garages, portable lights, battery chargers, portable stage lights, heavy tools and equipment exposed to oils, water, acids, chemicals, and solvents. Flame retardant with outstanding abrasion resistance.
- Stocked with black outer jacket.
- Conductor code: 2 conductor is black, white; 3 conductor is black, white, green; 4 conductor is black, white, green, red; 5 conductor is black, white, red, green, orange.
- Portable control cable of 5 conductors or more is also available.
- MSHA, Pennsylvania DEP approved, and Federal spec JC580B.

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DLO

Diesel Locomotive and Drilling Rig Cable
Ethylene-propylene (EP) Rubber Insulation and Hypalon® Jacket (90C) (2000 Volts)

WCWC P/N	AWG Size	Conductor Stranding	Conductor Diameter	Nominal Insulation	Nominal Jacket	Nominal Diameter	Approx. Lbs./Mft.	Ampacity NEC
DLO8BLK	8	37/24 Tinned	.141	.060	.030	.33	110	83
DLO6BLK	6	61/24 Tinned	.209	.060	.030	.41	150	109
DLO4BLK	4	105/24 Tinned	.265	.060	.030	.46	220	145
DLO3BLK	3	125/24 Tinned	.288	.060	.030	.48	245	167
DLO2BLK	2	150/24 Tinned	.313	.060	.030	.51	265	192
DLO1BLK	1	225/24 Tinned	.380	.080	.045	.65	420	223
DLO1/0BLK	1/0	275/24 Tinned	.409	.080	.045	.68	510	258
DLO2/0BLK	2/0	325/24 Tinned	.449	.080	.045	.72	570	298
DLO3/0BLK	3/0	450/25 Tinned	.540	.080	.045	.81	790	345
DLO4/0BLK	4/0	550/24 Tinned	.573	.080	.045	.84	900	400
DLO262BLK	262.6	650/24 Tinned	.620	.095	.065	.96	1100	458
DLO313BLK	313.3	775/24 Tinned	.688	.095	.065	1.04	1275	514
DLO373BLK	373.7	925/24 Tinned	.774	.095	.065	1.14	1520	574
DLO444BLK	444.4	1100/24 Tinned	.840	.095	.065	1.23	1800	642
DLO535BLK	535.3	1325/24 Tinned	.908	.100	.065	1.32	2120	725
DLO646BLK	646.4	1600/24 Tinned	1.034	.110	.065	1.45	2530	815
DLO777BLK	777.7	1925/24 Tinned	1.123	.110	.065	1.54	3050	910
DLO929BLK	929.9	2318/24 Tinned	1.165	.110	.065	1.63	3740	1.165
DLO1111BLK	1111.0	2745/24 Tinned	1.350	.125	.065	1.83	4350	1.350

*Per table 400-5(A) of the NEC

- ❑ Can be used for the wiring of diesel electric locomotives and rail car equipment. Also recommended for high flexibility uses such as mining and earth moving equipment, motor or generator leads, battery lead wires, welding leads, jumper leads, and offshore drilling rig applications. Tough and abrasion resistant.
- ❑ Extra flexible stranding. Extra flame resistance.
- ❑ Ampacity based on single conductor in free air, 90C conductor temperature.
- ❑ Ambient temperature per ICEA.
- ❑ Stocked in black.
- ❑ Hypalon® is a registered trademark of Dupont.

W

Heavy Duty Portable Power Cable (-40C to 90C) (2000 Volts)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Nominal Diameter	Approx. Lbs./Mft.
W0801	8	1	133	0.49	160
W0601	6	1	259	0.57	220
W0401	4	1	259	0.61	290
W0201	2	1	259	0.68	395
W0101	1	1	259	0.77	390
W1/001	1/0	1	259	0.81	575
W2/001	2/0	1	259	0.89	700
W3/001	3/0	1	259	0.93	820
W4/001	4/0	1	259	0.98	1000
W25001	250	1	627	1.05	1170
W35001	350	1	855	1.15	1520
W50001	500	1	1235	1.31	2090
W0802	8	2	133	0.78	365
W0602	6	2	259	0.60	515
W0402	4	2	259	1.04	730
W0202	2	2	259	1.22	1000
W0102	1	2	259	1.44	1490
W1/002	1/0	2	259	1.52	1710
W2/002	2/0	2	259	1.65	1880
W3/002	3/0	2	259	1.77	2420
W4/002	4/0	2	259	1.92	2490
W0803	8	3	133	0.93	525
W0603	6	3	259	1.00	660
W0403	4	3	259	1.13	900
W0203	2	3	259	1.29	1300
W0103	1	3	259	1.49	1600
W1/003	1/0	3	259	1.65	2280
W2/003	2/0	3	259	1.75	2680
W3/003	3/0	3	259	1.89	3220
W4/003	4/0	3	259	2.04	3900
W25003	250	3	627	2.39	5070
W35003	350	3	855	2.68	6570
W50003	500	3	1235	3.03	8700

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Nominal Diameter	Approx. Lbs./Mft.
W0804	8	4	133	.985	620
W0604	6	4	259	1.09	825
W0404	4	4	259	1.22	1175
W0204	2	4	259	1.42	1650
W0104	1	4	259	1.68	2450
W1/004	1/0	4	259	1.79	2570
W2/004	2/0	4	259	1.93	3450
W3/004	3/0	4	259	2.07	4050
W4/004	4/0	4	259	2.26	4970
W0805	8	5	133	1.05	710
W0605	6	5	259	1.21	1010
W0405	4	5	259	1.55	1400
W0205	2	5	259	1.61	2340
W0105	1	5	259	1.88	3040
W1/005	1/0	5	259	1.96	3460
W2/005	2/0	5	259	2.13	4180
W3/005	3/0	5	259	2.26	4900
W4/005	4/0	5	259	2.46	5980

Ampacity for portable cables, amperes per conductor
90C conductor temperature and 40C ambient temperature

AWG MCM	Single Conductor	Two Conductor	Three Conductor	Four Conductor
8	80	74	74	65
6	105	99	99	87
4	140	130	130	114
2	190	174	174	152
1	220	202	202	177
1/0	260	234	234	205
2/0	300	271	271	237
3/0	350	313	313	274
4/0	405	361	361	316
250	455		402	
350	570		495	
500	700		613	

- ❑ Can be used for cranes, conveyors, mobile equipment, temporary power supply use, portable and stationary heavy-duty equipment, motor leads, locomotive wiring, welding machines and grounding cables.
- ❑ Cable is oil, sunlight, chemical and water resistant.
- ❑ GGC is similar to Type W except for the addition of grounding conductors and a ground check. Type G is similar to Type W except for the addition of grounding conductors only.
- ❑ Color code is black, white, green, red.

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G / GGC

Heavy Duty Portable Power Cable With Grounds (-40C to 90C) (600/2000V)

WCWC P/N	AWG Size	NO of Conductors	Conductor Stranding	Nominal Insulation	Ground No./Size	Ground Check No./Size	Nominal Diameter	Approx. Lbs./Mft.
G0803	8	3	133/.0113 Bare	.060	2 X 10	-	.955	671
G0603	6	3	259/.0100 Bare	.060	2 X 10	-	1.045	872
G0403	4	3	259/.0127 Bare	.060	2 X 8	-	1.170	1169
G0203	2	3	259/.0160 Bare	.060	2 X 7	-	1.305	1566
G0103	1	3	259/.0180 Bare	.080	2 X 6	-	1.505	2016
G1/003	1/0	3	259/.0202 Bare	.080	2 X 5	-	1.635	2492
G2/003	2/0	3	259/.0227 Bare	.080	2 X 4	-	1.740	2909
G3/003	3/0	3	259/.0255 Bare	.080	2 X 3	-	1.885	3426
G4/003	4/0	3	259/.0286 Bare	.080	2 X 2	-	2.095	4500
G25003	250	3	427/.0245 Bare	.095	2 X 2	-	2.380	5445
G35003	350	3	427/.0286 Bare	.095	2 X 1/0	-	2.730	7273
G50003	500	3	427/.0342 Bare	.095	2 X 2/0	-	3.015	9439
G0604	6	4	133/.0142 Bare	.060	4 #12	-	1.130	930
G0404	4	4	133/.0179 Bare	.060	4 #10	-	1.240	1176
G0204	2	4	133/.0223 Bare	.060	4 #9	-	1.400	1644
G2/004	2/0	4	259/.0227 Bare	.080	4 #6	-	1.915	3141
G4/004	4/0	4	259/.0286 Bare	.080	4 #4	-	2.240	4661
GGC0803	8	3	133/.0113 Bare	.060	2 #10	1 #10	0.81	478
GGC0603	6	3	259/.0100 Bare	.060	2 #10	1 #10	0.93	629
GGC0403	4	3	259/.0127 Bare	.060	2 #8	1 #10	1.08	906
GGC0203	2	3	259/.0160 Bare	.060	2 #6	1 #10	1.27	1257
GGC0103	1	3	259/.0180 Bare	.080	2 #6	1 #8	1.44	1648
GGC1/003	1/0	3	259/.0202 Bare	.080	2 #4	1 #8	1.52	1964
GGC2/003	2/0	3	259/.0227 Bare	.080	2 #4	1 #8	1.65	2313
GGC3/003	3/0	3	259/.0255 Bare	.080	2 #2	1 #8	1.77	2705
GGC4/003	4/0	3	259/.0286 Bare	.080	2 #2	1 #8	1.92	3469
GGC25003	250	3	427/.0245 Bare	.095	2 #2	1 #8	2.10	4317

- Can be used for cranes, conveyors, mobile equipment, temporary power supply use, portable and stationary heavy-duty equipment, motor leads, locomotive wiring, welding machines and grounding cables.
- Cable is oil, sunlight, chemical and water resistant.
- GGC is similar to Type W except for the addition of grounding conductors and a ground check. Type G just has grounding conductors.
- Color code is black, white, red and orange.

Stagelighting Entertainment

Chlorinated Polyethylene (CPE) (UL Type SC) (CSA Type PPC) (105C) (600V)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft.	Ampacity* NEC
SC0801	8	163/30	.095	.360	100	80
SC0601	6	258/30	.095	.371	131	105
SC0401	4	410/30	.095	.430	189	140
SC0201	2	649/30	.106	.509	285	190
SC0101	1	815/30	.136	.611	379	220
SC1/001	1/0	1032/30	.136	.672	463	260
SC2/001	2/0	1287/30	.136	.697	549	300
SC3/001	3/0	1622/30	.136	.777	674	350
SC4/001	4/0	2052/30	.136	.803	814	405

*Per NEC table 400-5(B).

- Can be used for portable power systems as well as entertainment industry activities such as theatre, television, night clubs, motion pictures, mobile communication vans, spotlights and sound systems and other similar applications that would require temporary power.
- Both water and sun resistant, and is designed to withstand severe environmental conditions. Withstands exposure to oil, acids, alkalis, heat, flame, moisture and chemicals. Meets or exceeds flame test requirements of MSHA, ICEA and UL.

Flat Festoon - PVC Entertainment

Polyvinylchloride (PVC) (-40C to 105C) (600 Volts) (UL VW-1 and CSA FT 1) Five Conductor Flat Cables (Black)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Insulation Inch	Outer Diameter Inches	Outer Diameter mm	Ampacity USEC*	Approx. Wt. Lbs./Mft.	Approx. Wt. Kg./Km.
FC1205	12	5	65/30	.030	.220 X .970	5.6 X 24.6	29	200	298
FC1005	10	5	105/30	.030	.245 X 1.105	6.2 X 28.1	31	280	417
FC0805	8	5	168/30	.045	.375 X 1.550	9.5 X 39.4	44	530	789
FC0605	6	5	259/30	.060	.430 X 1.860	10.9 X 47.2	57	791	1177
FC0405	4	5	413/30	.060	.510 X 2.210	13.0 X 56.1	73	1140	1696

- Color Code: Green, White, Black, Red, Blue.
- Can be used with festoon systems for the conveyance of electrical power and control to cranes, hoists, or any equipment which travels with a lateral traversing motion. Cables can also be used where space is at a premium, since it can be stacked, or where extreme flexing is a requirement. Recommended bend radius of three to five times cable diameter. Five conductor flat cables are widely used in convention halls and exhibit centers as under carpet cables for distribution and booth lighting.
- Buy standard put-ups for better pricing and quicker delivery.

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Flat Festoon - PVC Cable & PVC Shielded

Polyvinylchloride (PVC) (-40C to 105C) (600 Volts) (UL VW-1 and CSA FT 1) (Black or Yellow)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Insulation Inches	Outer Diameter Inches	Outer Diameter mm	Ampacity USEC*	Approx. Wt. Lbs./Mft.	Approx. Wt. Kg./Km.
FC1608	16	8	65/34	.030	.225 x 1.170	5.7 x 29.7	14	194	289
FC1612	16	12	65/34	.030	.225 x 1.700	5.7 x 43.2	14	292	434
FC1404	14	4	105/34	.030	.240 x 0.690	6.1 x 17.5	27	138	206
FC1408	14	8	105/34	.030	.240 x 1.290	6.1 x 32.8	19	254	377
FC1412	14	12	105/34	.030	.240 x 1.825	6.1 x 46.4	19	380	566
FC1204	12	4	65/30	.030	.260 x 0.800	6.6 x 20.3	33	180	267
FC1208	12	8	65/30	.030	.260 x 1.440	6.6 x 36.6	23	343	510
FC1004	10	4	105/30	.030	.290 x 0.890	7.4 x 22.6	44	239	356
FC0804	8	4	168/30	.045	.375 x 1.225	9.5 x 31.1	60	401	596
FC0604	6	4	259/30	.060	.450 x 1.500	11.4 x 38.1	82	635	945
FC0404	4	4	413/30	.060	.515 x 1.750	13.1 x 44.0	104	896	1333
FC0204	2	4	665/30	.060	.575 x 1.975	14.6 x 50.2	142	1278	1901
FC2/004	2/0	4	1323/30	.080	.800 x 2.820	20.3 x 71.6	213	2613	3888

*United States Electrical Code

Shielded - Polyvinylchloride (PVC) (-40C to 105C) (600 Volts) (UL VW-1 and CSA FT 1) Each Conductor has Tinned Copper Braid Shield (Yellow)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Insulation Inches	Outer Diameter Inches	Outer Diameter mm	Ampacity USEC*	Approx. Wt. Lbs./Mft.	Approx. Wt. Kg./Km.
FC1608SHD	16	8	65/34	.030	.260 x 1.455	6.6 x 36.7	14	220	328
FC1612SHD	16	12	65/34	.030	.260 x 2.125	6.6 x 53.98	14	456	680
FC1412SHD	14	12	105/34	.030	.270 x 2.200	6.86 x 55.88	19	521	754

*United States Electrical Code

- Can be used in festoon systems, power tracks, cranes and hoists, power carriage systems, cable reels, car washes, and other applications.
- Bending radius is approximately four times the minor dimension (thickness).
- Jacket stripping is simplified by the use of ripcords, which are found in all of our flat constructions.
- UL listed for -40C. Can be used for operation at temperatures down to -55C.
- The compound passes the UL rating for the UV resistant test, making the cable suitable for outdoor use.

Color Code - Each individually color coded conductor is printed with a number and a word to identify the conductor number.

Conductor #	Base	Stripe	Conductor #	Base	Stripe
1	Black	-	7	Red	Black
2	Red	-	8	Blue	Black
3	Blue	-	9	Orange	Black
4	Orange	-	10	Yellow	Black
5	Yellow	-	11	Brown	Black
6	Brown	-	12	Black	Red

Pendant

Pendant Cable (90C) (600 Volts) UL, CSA AWM I/II A/B

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	PVC/Nylon Insulation in Inches	Diameter Inches	Diameter mm	Ampacity USEC*	Approx. Wt. Lbs./Mft.	Kg./Km.
PR1608YEL	16	8	65/34 BC	.015/.005	.470	11.93	7	138	206
PR1612YEL	16	12	65/34 BC	.015/.005	.550	13.97	7	198	295
PR1616YEL	16	16	65/34 BC	.015/.005	.610	15.49	7	225	335
PR1624YEL	16	24	65/34 BC	.016/.005	.745	18.90	6	370	551

*United States Electrical Code

Pendant Cable with Two Galvanized Steel Supports (1/16″) (90C) (600 Volts) UL, CSA AWM I/II A/B

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	PVC/Nylon Insulation Inches	Diameter Inches	Diameter mm	Ampacity USEC*	Approx. Wt. Lbs./Mft.	Kg./Km.
PR1608YELSR	16	8	65/34 BC	.015/.005	.495 x .215	12.6 x 5.4	7	179	266
PR1612YELSR	16	12	65/34 BC	.015/.005	.570 x .215	14.4 x 5.4	7	260	394
PR1616YELSR	16	16	65/34 BC	.015/.005	.630 x .215	16.0 x 5.4	7	319	510
PR1624YELSR	16	24	65/34 BC	.016/.005	.765 x .215	19.4 x 5.4	6	440	656

*United States Electrical Code

- Can be used in portable control, festoon systems, pendant stations, power tracks, cranes and hoists, power carriage systems, and other applications. Pendant cable is good in conditions where flame, chemicals, moisture and temperature extremes are considerations.
- Stocked with yellow outer jacket.

Color Code - Each individually color coded conductor is printed with a number and a word to identify the conductor number.

Cond. No.	Base Color	Stripe Color	Cond. No.	Base Color	Stripe Color	Cond. No.	Base Color	Stripe Color
1	Black	-	13	Blue	Red	25	Yellow	Orange
2	Red	-	14	Orange	Red	26	Brown	Orange
3	Blue	-	15	Yellow	Red	27	Black	Yellow
4	Orange	-	*16	Brown	Red	28	Red	Yellow
5	Yellow	-	17	Black	Blue	29	Blue	Yellow
6	Brown	-	18	Red	Blue	*30	Orange	Yellow
7	Red	Black	19	Orange	Blue	31	Brown	Yellow
*8	Blue	Black	20	Yellow	Blue	32	Black	Brown
9	Orange	Black	21	Brown	Blue	33	Red	Brown
10	Yellow	Black	22	Black	Orange	34	Blue	Brown
11	Brown	Black	23	Red	Orange	35	Orange	Brown
*12	Black	Red	*24	Blue	Orange	36	Green	-

*The last conductor of each cable is green, unprinted.

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STOW Pendant Cable

With Steel Core Messenger Yellow Type UL STOW (VW-1) CSA STOW (FT 1) with Black Steel Core Messenger (105C) (600 Volts)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Insulation Inches	Jacket Inches	Diameter Inches	Diameter mm	Ampacity USEC*	Approx. Wt. Lbs./Mft.	Kg./Km.
STO1603STL	16	3	65/34BC	.032	.065	.535	13.6	8	135	201
STO1605STL	16	5	65/34BC	.032	.085	.575	14.6	7	175	260
STO1607STL	16	7	65/34BC	.032	.085	.620	15.7	7	215	320

*United States Electrical Code

- Color code: 3 conductor is yellow, blue, brown; 5 conductor is yellow, blue, brown, red, orange; 7 conductor is yellow, blue, brown, red, orange, white, purple.

Thermostat Cable

Polypropylene Insulation Polyvinylchloride (PVC) Jacket with Sun Resistance (60C) UL Type CL2, NEC Article 725, CUL Type CM/FT 1, California State Fire Marshal

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Nominal Insulations	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.
THERM2002	20	2	Solid	.006”	.014”	.114”	10
THERM2003	20	3	Solid	.006”	.014”	.121”	13
THERM2004	20	4	Solid	.006”	.014”	.132”	17
THERM2005	20	5	Solid	.006”	.015”	.147”	21
THERM2006	20	6	Solid	.006”	.015”	.160”	25
THERM2007	20	7	Solid	.006”	.019”	.168”	29
THERM2008	20	8	Solid	.006”	.019”	.181”	33
THERM2009	20	9	Solid	.006”	.019”	.193”	36
THERM2010	20	10	Solid	.006”	.019”	.210”	40
THERM2012	20	12	Solid	.006”	.014”	.217”	47
THERM1802	18	2	Solid	.006”	.014”	.132”	14
THERM1803	18	3	Solid	.006”	.014”	.140”	20
THERM1804	18	4	Solid	.006”	.014”	.154”	26
THERM1805	18	5	Solid	.006”	.015”	.170”	32
THERM1806	18	6	Solid	.006”	.015”	.186”	38
THERM1807	18	7	Solid	.006”	.019”	.194”	45
THERM1808	18	8	Solid	.006”	.019”	.210”	50
THERM1809	18	9	Solid	.006”	.019”	.226”	56
THERM1810	18	10	Solid	.006”	.019”	.246”	62
THERM1812	18	12	Solid	.006”	.019”	.254”	75

- Normal color code is red, white, green, blue, yellow, brown, orange, black, pink, gray, tan, and purple.
- Can be used in power limited circuit cable for use in thermostat controls, heating and air conditioning units and other low voltage applications.
- Buy standard put-ups or multiples of standard put-ups for quicker delivery.

European Flexible Control Cable

Polyvinylchloride (PVC) Control Tray Cable (90C)(60C Oil) (600 Volts) (UL)(CSA)(VDE)(CE)(VW-1, FT1, FT2)(Oil Resistant)

WCWC P/N	AWG Size	Metric Gauge Size	NO. of Conductors	Conductor Stranding	Nominal Diameter Inch	mm	Approx. Lbs./Mft.
EUR2002	20	0.50 mm	2	17/32BC	0.209	5.3	27
EUR2003	20	0.50 mm	3	17/32BC	0.220	5.6	32
EUR2004	20	0.50 mm	4	17/32BC	0.236	6.0	36
EUR2005	20	0.50 mm	5	17/32BC	0.264	6.7	48
EUR2007	20	0.50 mm	7	17/32BC	0.283	7.2	58
EUR2008	20	0.50 mm	8	17/32BC	0.335	8.5	77
EUR2009	20	0.50 mm	9	17/32BC	0.362	9.2	79
EUR2010	20	0.50 mm	10	17/32BC	0.370	9.4	85
EUR2012	20	0.50 mm	12	17/32BC	0.382	9.7	96
EUR2014	20	0.50 mm	14	17/32BC	0.398	10.1	108
EUR2016	20	0.50 mm	16	17/32BC	0.429	10.9	126
EUR2018	20	0.50 mm	18	17/32BC	0.449	11.4	139
EUR2025	20	0.50 mm	25	17/32BC	0.547	13.9	190
EUR2030	20	0.50 mm	30	17/32BC	0.563	14.3	218
EUR2034	20	0.50 mm	34	17/32BC	0.614	15.6	251
EUR2040	20	0.50 mm	40	17/32BC	0.665	16.9	296
EUR2061	20	0.50 mm	61	17/32BC	0.780	19.8	424
EUR1802	18	0.50 mm	2	30/32BC	0.236	6.0	37
EUR1803	18	1.00 mm	3	30/32BC	0.252	6.4	46
EUR1804	18	1.00 mm	4	30/32BC	0.276	7.0	53
EUR1805	18	1.00 mm	5	30/32BC	0.307	7.8	70
EUR1807	18	1.00 mm	7	30/32BC	0.335	8.5	87
EUR1808	18	1.00 mm	8	30/32BC	0.390	9.9	106
EUR1809	18	1.00 mm	9	30/32BC	0.425	10.8	116
EUR1810	18	1.00 mm	10	30/32BC	0.433	11.0	125
EUR1812	18	1.00 mm	12	30/32BC	0.445	11.3	142
EUR1814	18	1.00 mm	14	30/32BC	0.476	12.1	165
EUR1818	18	1.00 mm	18	30/32BC	0.535	13.6	209
EUR1825	18	1.00 mm	25	30/32BC	0.646	16.4	286
EUR1830	18	1.00 mm	30	30/32BC	0.669	17.0	331
EUR1834	18	1.00 mm	34	30/32BC	0.728	18.5	380
EUR1840	18	1.00 mm	40	30/32BC	0.783	19.9	447
EUR1861	18	1.00 mm	61	30/32BC	0.933	23.7	654

- ❑ Suitable Replacement for Olflex 190 Series
- ❑ Conductor is bare copper.
- ❑ Insulation and Jacket is PVC
- ❑ Color code is black conductors with consecutive numbers according to DIN VDE 0293 + HD 186, green-yellow earth wire from 3 conductors.
- ❑ Special order available with blue, red, and orange conductors and black or orange jacket. Consult your salesperson for mins and lead times.
- ❑ Can be used for use in all electrical equipment in dry, damp, and wet conditions. Recommended applications are machine tools, control systems, assembly lines, CNC machining centers, grinding machines, bottling equipment, data processing equipment, and connections between control panels and machines.

European Flexible Control Cable
(Continued)

Polyvinylchloride (PVC) Control Tray Cable (90C)(60C Oil) (600 Volts) (UL)(CSA)(VDE)(CE)(VW-1, FT1, FT2)(Oil Resistant)

WCWC P/N	AWG Size	Metric Gauge Size	NO. of Conductors	Conductor Stranding	Nominal Diameter Inch	Nominal Diameter mm	Approx. Lbs./Mft.
EUR1602	16	1.50 mm	2	27-29/30BC	0.264	6.7	48
EUR1603	16	1.50 mm	3	27-29/30BC	0.280	7.1	58
EUR1604	16	1.50 mm	4	27-29/30BC	0.311	7.9	71
EUR1605	16	1.50 mm	5	27-29/30BC	0.339	8.6	90
EUR1607	16	1.50 mm	7	27-29/30BC	0.378	9.6	116
EUR1608	16	1.50 mm	8	27-29/30BC	0.441	11.2	149
EUR1609	16	1.50 mm	9	27-29/30BC	0.480	12.2	155
EUR1610	16	1.50 mm	10	27-29/30BC	0.488	12.4	167
EUR1612	16	1.50 mm	12	27-29/30BC	0.504	12.8	191
EUR1614	16	1.50 mm	14	27-29/30BC	0.535	13.6	220
EUR1616	16	1.50 mm	16	27-29/30BC	0.563	14.3	249
EUR1618	16	1.50 mm	18	27-29/30BC	0.602	15.3	282
EUR1625	16	1.50 mm	25	27-29/30BC	0.728	18.5	386
EUR1630	16	1.50 mm	30	27-29/30BC	0.760	19.3	453
EUR1634	16	1.50 mm	34	27-29/30BC	0.827	21.0	519
EUR1640	16	1.50 mm	40	27-29/30BC	0.902	22.9	620
EUR1661	16	1.50 mm	61	27-29/30BC	1.051	26.7	891
EUR1402	14	2.50 mm	2	46/30BC	0.319	8.1	73
EUR1403	14	2.50 mm	3	46/30BC	0.339	8.6	89
EUR1404	14	2.50 mm	4	46/30BC	0.374	9.5	108
EUR1405	14	2.50 mm	5	46/30BC	0.417	10.6	141
EUR1407	14	2.50 mm	7	46/30BC	0.457	11.6	179
EUR1408	14	2.50 mm	8	46/30BC	0.543	13.8	233
EUR1409	14	2.50 mm	9	46/30BC	0.587	14.9	239
EUR1410	14	2.50 mm	10	46/30BC	0.598	15.2	260
EUR1412	14	2.50 mm	12	46/30BC	0.618	15.7	299
EUR1418	14	2.50 mm	18	46/30BC	0.736	18.7	440
EUR1425	14	2.50 mm	25	46/30BC	0.909	23.1	612
EUR1203	12	4.00 mm	3	52/28BC	0.402	10.2	132
EUR1204	12	4.00 mm	4	52/28BC	0.445	11.3	161
EUR1205	12	4.00 mm	5	52/28BC	0.496	12.6	209
EUR1207	12	4.00 mm	7	52/28BC	0.547	13.9	271
EUR1003	10	6.00 mm	3	78/28BC	0.476	12.1	193
EUR1004	10	6.00 mm	4	78/28BC	0.520	13.2	239
EUR1005	10	6.00 mm	5	78/28BC	0.587	14.9	303
EUR0804	8	10.00 mm	4	77/26BC	0.701	17.8	423
EUR0805	8	10.00 mm	5	77/26BC	0.780	19.8	527
EUR0604	6	16.00 mm	4	119/26BC	0.850	21.6	635
EUR0404	4	25.00 mm	4	196/26BC	1.051	26.7	1006
EUR0204	2	35.00 mm	4	280/26BC	1.197	30.4	1368

Tray Cable - PVC

Polyvinylchloride (PVC) Control Tray Cable (90C Dry) (75C Wet) (600 Volts)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Nominal Insulation	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.
TC1602PVC	16	2	Stranded Bare Copper	0.015	0.045	.20 X .30	42
TC1603PVC	16	3	Stranded Bare Copper	0.015	0.045	0.31	55
TC1604PVC	16	4	Stranded Bare Copper	0.015	0.045	0.34	69
TC1605PVC	16	5	Stranded Bare Copper	0.015	0.045	0.36	83
TC1606PVC	16	6	Stranded Bare Copper	0.015	0.045	0.39	96
TC1607PVC	16	7	Stranded Bare Copper	0.015	0.045	0.39	122
TC1609PVC	16	9	Stranded Bare Copper	0.015	0.045	0.43	138
TC1612PVC	16	12	Stranded Bare Copper	0.015	0.045	0.51	174
TC1402PVC	14	2	Stranded Bare Copper	0.015	0.045	.22 X .33	62
TC1403PVC	14	3	Stranded Bare Copper	0.015	0.045	0.35	80
TC1404PVC	14	4	Stranded Bare Copper	0.015	0.045	0.38	99
TC1405PVC	14	5	Stranded Bare Copper	0.015	0.045	0.41	118
TC1406PVC	14	6	Stranded Bare Copper	0.015	0.045	0.45	140
TC1407PVC	14	7	Stranded Bare Copper	0.015	0.045	0.45	153
TC1409PVC	14	9	Stranded Bare Copper	0.015	0.045	0.52	196
TC1412PVC	14	12	Stranded Bare Copper	0.015	0.06	0.61	267
TC1419PVC	14	19	Stranded Bare Copper	0.015	0.06	0.71	396
TC1430PVC	14	30	Stranded Bare Copper	0.015	0.08	0.93	636
TC1437PVC	14	37	Stranded Bare Copper	0.015	0.08	0.98	764
TC1202PVC	12	2	Stranded Bare Copper	0.015	0.045	.24 X .37	77
TC1203PVC	12	3	Stranded Bare Copper	0.015	0.045	0.39	110
TC1204PVC	12	4	Stranded Bare Copper	0.015	0.045	0.42	138
TC1205PVC	12	5	Stranded Bare Copper	0.015	0.045	0.46	165
TC1207PVC	12	7	Stranded Bare Copper	0.015	0.045	0.5	216
TC1209PVC	12	9	Stranded Bare Copper	0.015	0.06	0.62	297
TC1212PVC	12	12	Stranded Bare Copper	0.015	0.06	0.69	378
TC1215PVC	12	15	Stranded Bare Copper	0.015	0.06	0.76	468
TC1219PVC	12	19	Stranded Bare Copper	0.015	0.06	0.80	568
TC1230PVC	12	30	Stranded Bare Copper	0.015	0.08	1.03	910
TC1237PVC	12	37	Stranded Bare Copper	0.015	0.08	1.14	1105
TC1002PVC	10	2	Stranded Bare Copper	0.02	0.045	.27 X .44	131
TC1003PVC	10	3	Stranded Bare Copper	0.02	0.045	0.45	169
TC1004PVC	10	4	Stranded Bare Copper	0.02	0.045	0.5	231
TC1005PVC	10	5	Stranded Bare Copper	0.02	0.06	0.58	276
TC1006PVC	10	6	Stranded Bare Copper	0.02	0.06	0.63	329
TC1007PVC	10	7	Stranded Bare Copper	0.02	0.06	0.63	361
TC1009PVC	10	9	Stranded Bare Copper	0.02	0.06	0.73	465
TC1012PVC	10	12	Stranded Bare Copper	0.02	0.08	0.86	647

Polyvinylchloride (PVC) Control Tray Cable Color Code
ICEA Method 1, K-2

Conductor	Base Color	Tracer Color
1	Black	-
2	Red	-
3	Blue	-
4	Orange	-
5	Yellow	-
6	Brown	-
7	Red	Black
8	Blue	Black
9	Orange	Black
10	Yellow	Black
11	Brown	Black
12	Black	Red
13	Blue	Red
14	Orange	Red
15	Yellow	Red
16	Brown	Red
17	Black	Blue
18	Red	Blue
19	Orange	Blue
20	Yellow	Blue
21	Brown	Blue
22	Black	Orange
23	Red	Orange
24	Blue	Orange
25	Yellow	Orange
26	Brown	Orange
27	Black	Yellow
28	Red	Yellow
29	Blue	Yellow
30	Orange	Yellow
31	Brown	Yellow
32	Black	Brown
33	Red	Brown
34	Blue	Brown
35	Orange	Brown
36	Yellow	Brown

- Can be used for cable tray, raceway, direct burial and aerial installations where supported by a messenger.
- Flame retardant. Moisture, oil, gasoline, chemical and corrosion resistant.
- Flame test: IEEE 383 70,000 BTU/HR.

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Tray Cable - PVC Power

(90C Dry) (75C Wet) (600 Volts)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Nominal Insulation	Nylon Armor	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.
TC0803PVC	8	3	7 Bare	.030	.005	.060	.580	220
TC0804PVC	8	4	7 Bare	.030	.005	.060	.610	286
TC0603PVC	6	3	7 Bare	.030	.005	.060	.690	386
TC0604PVC	6	4	7 Bare	.030	.005	.060	.760	505
TC0403PVC	4	3	7 Bare	.040	.006	.080	.890	630
TC0404PVC	4	4	7 Bare	.040	.006	.080	.970	828
TC0203PVC	2	3	7 Bare	.040	.006	.080	1.030	930
TC0204PVC	2	4	7 Bare	.040	.006	.080	1.130	1213
TC1/003PVC	1/0	3	19 Bare	.050	.007	.080	1.220	1423
TC2/003PVC	2/0	3	19 Bare	.050	.007	.080	1.320	1718
TC4/003PVC	4/0	3	19 Bare	.050	.007	.080	1.540	2592
TC35003PVC	350	3	37 Bare	.060	.008	.110	1.970	4204
TC50003PVC	500	3	37 Bare	.060	.008	.110	2.260	5792

- ❑ Can be used for cable tray, raceway, direct burial and aerial installations when supported by a messenger.
- ❑ Resistant to sunlight, oil, gasoline, and moisture. Flame retardant.
- ❑ Buy standard put-ups for quicker delivery. Respooling and coiling available.
- ❑ May be used in NEC class I and II Division 2 hazardous locations.
- ❑ Flame test: IEEE 383 70,000 BT/HR flame test.
- ❑ Color Code: ICEA Method 4.

Tray Cable - PVC Power with Ground

Polyvinylchloride (PVC) (90C Dry) (75C Wet) (600 Volts)

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Nominal Insulation	Nylon Armor	Jacket Thickness	Nominal Diameter	Approx. Lbs./Mft.
TC0803PVCG	8	3	7/.0486 Bare	.030	.005	.060	.58	220
TC0603PVCG	6	3	7/0.612 Bare	.030	.005	.060	.69	386
TC0403PVCG	4	3	7/.0772 Bare	.040	.006	.060	.89	630
TC0203PVCG	2	3	7/.0974 Bare	.040	.006	.080	1.03	930
TC1/003PVCG	1/0	3	19/.0745 Bare	.050	.007	.080	1.22	1423
TC2/003PVCG	2/0	3	19/.0837 Bare	.050	.007	.080	1.32	1718
TC3/003PVCG	3/0	3	19/.0940 Bare	.050	.007	.080	1.42	2131
TC4/003PVCG	4/0	3	19/.1055 Bare	.050	.007	.080	1.54	2592
TC25003PVCG	250	3	37/.0822 Bare	.060	.008	.110	1.75	3123
TC35003PVCG	350	3	37/.0973 Bare	.060	.008	.110	1.97	4204
TC50003PVCG	500	3	37/.1162 Bare	.060	.008	.110	2.26	5792

Ground Wire

Conductor Size	Ground Wire Size	Stranding
8	10	7/.0385
6 - 4	8	7/.0486
2 - 2/0	6	7/.0612
3/0	4	7/.0772
4/0 - 350	3	7/.0867
500	2	7/.0974

Power Cable Color Coding

ICEA Method 4 Printed

1 - One	10 - Ten	19 - Nineteen	28 - Twenty-eight
2 - Two	11 - Eleven	20 - Twenty	29 - Twenty-nine
3 - Three	12 - Twelve	21 - Twenty-one	30 - Thirty
4 - Four	13 - Thirteen	22 - Twenty-two	31 - Thirty-one
5 - Five	14 - Fourteen	23 - Twenty-three	32 - Thirty-two
6 - Six	15 - Fifteen	24 - Twenty-four	33 - Thirty-three
7 - Seven	16 - Sixteen	25 - Twenty-five	34 - Thirty-four
8 - Eight	17 - Seventeen	26 - Twenty-six	35 - Thirty-five
9 - Nine	18 - Eighteen	27 - Twenty-seven	36 - Thirty-six

- ❑ Conductor identification - the individual conductors are colored black and identified with white alpha numerical printing per ICEA Method 4.
- ❑ Can be used for cable tray, raceway, direct burial and aerial installations when supported by a messenger.
- ❑ Resistant to sunlight, oil, gasoline, flame and moisture.
- ❑ Buy standard put-ups for quicker delivery.
- ❑ Respooling and coiling available.
- ❑ Flame Test: IEEE 383 70,000BTU/HR.

Tray Cable - TPE

600 V (UL) 90C

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Nominal Diameter	Approx. Lbs./Mft.	Ampacity NEC*
COM1805	18	5	16/30 Bare	.355	68	11.20
COM1806	18	6	16/30 Bare	.380	79	11.20
COM1807	18	7	16/30 Bare	.380	85	9.80
COM1808	18	8	16/30 Bare	.410	99	9.80
COM1810	18	10	16/30 Bare	.470	122	7.00
COM1812	18	12	16/30 Bare	.485	138	7.00
COM1816	18	16	16/30 Bare	.565	180	7.00
COM1821	18	21	16/30 Bare	.620	237	6.30
COM1824	18	24	16/30 Bare	.680	271	6.30
COM1830	18	30	16/30 Bare	.715	338	6.30
COM1837	18	37	16/30 Bare	.770	430	5.60
COM1602	16	2	26/30 Bare	.310	48	18.00
COM1603	16	3	26/30 Bare	.330	60	18.00
COM1604	16	4	26/30 Bare	.355	74	14.40
COM1605	16	5	26/30 Bare	.385	94	14.40
COM1606	16	6	26/30 Bare	.415	107	14.40
COM1607	16	7	26/30 Bare	.415	125	12.60
COM1608	16	8	26/30 Bare	.445	132	12.60
COM1610	16	10	26/30 Bare	.515	167	9.00
COM1612	16	12	26/30 Bare	.560	209	9.00
COM1616	16	16	26/30 Bare	.615	261	9.00
COM1621	16	21	26/30 Bare	.675	342	8.10
COM1624	16	24	26/30 Bare	.715	394	8.10
COM1630	16	30	26/30 Bare	.785	472	8.10
COM1402	14	2	41/30 Bare	.335	58	25.00
COM1403	14	3	41/30 Bare	.350	76	25.00
COM1404	14	4	41/30 Bare	.380	96	20.00
COM1405	14	5	41/30 Bare	.410	116	20.00
COM1406	14	6	41/30 Bare	.445	143	20.00
COM1407	14	7	41/30 Bare	.445	174	17.50
COM1408	14	8	41/30 Bare	0.48	180	17.50
COM1410	14	10	41/31 Bare	0.59	245	12.50
COM1412	14	12	41/32 Bare	.605	275	12.50
COM1416	14	16	41/33 Bare	.695	353	12.50
COM1421	14	21	41/34 Bare	0.77	459	11.25
COM1424	14	24	41/35 Bare	.845	510	11.25
COM1430	14	30	41/36 Bare	.935	656	11.25
COM1437	14	37	41/37 Bare	.965	809	10.00

- Can be used in small diameter applications for steel, paper, chemical, textile, petroleum, cranes, hoists, pendants, mechanical arms, and other light and heavy industrial facilities. Designed for tight installations and continuous flexing.
- Good against oil, gasoline, ozone, chemicals and abrasions.
- TPE Tray Cable inner conductors are stranded copper and color coded for identification purposes with a Thermoplastic Elastomer (TPE) jacket.

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Tray Cable - TPE

WCWC P/N	AWG Size	NO. of Conductors	Conductor Stranding	Nominal Diameter	Approx. Lbs./Mft.	Ampacity NEC*
COM1202	12	2	65/30 Bare	0.39	82	30.00
COM1203	12	3	65/30 Bare	0.41	114	30.00
COM1204	12	4	65/30 Bare	.445	147	24.00
COM1205	12	5	65/30 Bare	.485	191	24.00
COM1206	12	6	65/30 Bare	.525	203	24.00
COM1207	12	7	65/30 Bare	0.54	247	21.00
COM1208	12	8	65/30 Bare	0.595	256	21.00
COM1210	12	10	65/30 Bare	0.69	320	15.00
COM1212	12	12	65/30 Bare	0.71	392	15.00
COM1216	12	16	65/30 Bare	.785	522	15.00
COM1221	12	21	65/30 Bare	.905	588	13.50
COM1224	12	24	65/30 Bare	1.002	771	13.50
COM1230	12	30	65/30 Bare	1.045	924	13.50
COM1237	12	37	65/30 Bare	1.16	1110	12.00

* Ampacity is based on 1996 NEC Article 3101Table 310-16.

- Can be used in small diameter applications for steel, paper, chemical, textile, petroleum, cranes, hoists, pendants, mechanical arms, and other light and heavy industrial facilities. Designed for tight installations and continuous flexing.
- Good against oil, gasoline, ozone, chemicals and abrasions.
- TPE Tray Cable inner conductors are stranded copper and color coded for identification purposes with a Thermoplastic Elastomer (TPE) jacket.

Control Cable Color Coding

ICEA Method 1, K2

Base Color	Tracer Color	Base Color	Tracer Color	Base Color	Tracer Color
Black	-	Blue	Red	Yellow	Orange
Red	-	Orange	Red	Brown	Orange
Blue	-	Yellow	Red	Black	Yellow
Orange	-	Brown	Red	Red	Yellow
Yellow	-	Black	Blue	Blue	Yellow
Brown	-	Red	Blue	Orange	Yellow
Red	Black	Orange	Blue	Brown	Yellow
Blue	Black	Yellow	Blue	Black	Brown
Orange	Black	Brown	Blue	Red	Brown
Yellow	Black	Black	Orange	Blue	Brown
Brown	Black	Red	Orange	Orange	Brown
Black	Red	Blue	Orange	Yellow	Brown

Tubing - PVC Heat Shrink

Multi-purpose Heat Shrink Polyvinylchloride (PVC) Tubing (-20C to 105C) (600 Volts) UL224 VW-1 and CSA OFT, MIL-DTL-23053/2 CLASS 2 (2 to 1 Shrink Ratio)

WCWC P/N	Internal Diameter	Expanded I.D. minimum Inch	mm	Recovered I.D. maximum Inch	mm	Recovered wall nominal Inch	mm	Standard Packaging Spool	Box
TU3/64PVC	3/64	.046	1.17	.023	.580	.020	.510	1,000'	2,000'
TU1/16PVC	1/16	.063	1.60	.032	.820	.020	.510	1,000'	2,000'
TU3/32PVC	3/32	.093	2.36	.046	1.170	.025	.640	1,000'	2,000'
TU1/8PVC	1/8	.125	3.18	.063	1.600	.025	.640	1,000'	2,000'
TU3/16PVC	3/16	.187	4.75	.093	2.360	.025	.640	1,000'	2,000'
TU1/4PVC	1/4	.250	6.35	.125	3.180	.025	.640	1,000'	2,000'
TU5/16PVC	5/16	.313	7.94	.157	3.990	.028	.710	500'	1,000'
TU3/8PVC	3/8	.375	9.53	.187	4.750	.028	.710	500'	1,000'
TU1/2PVC	1/2	.500	12.70	.250	6.350	.028	.710	250'	500'
TU5/8PVC	5/8	.625	15.88	.313	7.940	.033	.840	250'	500'
TU3/4PVC	3/4	.750	19.05	.375	9.530	.033	.840	250'	500'
TU1PVC	1	1.000	25.40	.500	12.700	.038	.970	250'	500'
TU1 1/4PVC	1 1/4	1.250	31.75	.625	15.880	.041	1.040	250'	500'
TU1 1/2PVC	1 1/2	1.500	38.10	.750	19.050	.043	1.090	100'	200'
TU2PVC	2	2.000	50.80	1.000	25.040	.048	1.220	100'	200'
TU3PVC	3	3.000	76.20	1.500	38.100	.068	1.730	50'	100'
TU4PVC	4	4.000	101.60	2.000	50.800	.073	1.850	50'	100'

- ❑ Heavy wall also available.
- ❑ Can be used in low shrink temperature, highly flame retardant applications to increase productivity in a variety of applications while protecting sensitive substrates and adjacent components.
- ❑ Stocked in black, white, red, yellow and clear.
- ❑ Cross reference: Coleflex ST100, Essex VC, Markel HT-105, Insultab HS-105.

Tubing - Dual Wall/Polyolefin Heat Shrink

Multi-purpose Flexible Heat Shrink Polyolefin Tubing with Internal Adhesive/Sealant (-55C to 110C) (600 Volts) (3 to 1 Shrink Ratio)

WCWC P/N	Internal Diameter	Minimum inside diam. as supplied Inch	mm	Maximum inside diam. after recovery Inch	mm	Nominal wall thick. after recovery Inch	mm	Normal Standard Packaging
TU1/8POLYDW	1/8	.125	3.2	.023	0.6	.038	1.0	4' Lengths / 200' per Box
TU3/16POLYDW	3/16	.187	4.7	.060	1.5	.045	1.2	4' Lengths / 200' per Box
TU1/4POLYDW	1/4	.250	6.4	.080	2.0	.047	1.3	4' Lengths / 100' per Box
TU5/16POLYDW	5/16	.313	7.9	.104	2.7	.048	1.3	4' Lengths / 100' per Box
TU3/8POLYDW	3/8	.375	9.5	.135	3.4	.050	1.3	4' Lengths / 100' per Box
TU1/2POLYDW	1/2	.500	12.7	.195	5.0	.055	1.4	4' Lengths / 100' per Box
TU3/4POLYDW	3/4	.750	19.1	.313	8.0	.065	1.7	4' Lengths / 100' per Box
TU1POLYDW	1	1.000	25.4	.400	10.2	.075	1.9	4' Lengths / 100' per Box
TU1 1/4POLYDW	1 1/4	1.250	31.8	.500	12.7	.100	2.5	4' Lengths / 60' per Box
TU1 1/2POLYDW	1 1/2	1.500	38.1	.600	15.2	.120	3.0	4' Lengths / 40' per Box

- ❑ Can be used for applications requiring waterproofing for light cable, splices, breakouts, wire harnesses and protection of connector components. This tubing is especially of value for applications as a moisture barrier in high humidity and corrosive environments.
- ❑ Stocked in 4' lengths.
- ❑ Shrink temperature is 120C.
- ❑ Stocked in black, white, red, yellow, blue and clear. Other colors available upon request.
- ❑ Cross reference: Sumitomo W3B2, Canusa CPA100.

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Tubing - Polyolefin Heat Shrink

Multi-purpose Flexible Heat Shrink Polyolefin Tubing (-55C to 135C) (600 Volts) UL224 MIL-DTL-23053/5 Class 1 and Class 2 (2 to 1 Shrink Ratio)

WCWC P/N	Internal Diameter	Min. inside diam. as supplied Inch	mm	Max. inside diam. after recovery Inch	mm	Nom. wall thick. after recovery Inch	mm	Military Specifications	Normal Standard Packaging
TU3/64POLY	3/64	.046	1.2	.023	0.6	.016	0.40	MIL-DTL-23053/5-101	4' Lengths or 1000' Spools
TU1/16POLY	1/16	.063	1.6	.031	0.8	.017	0.43	MIL-DTL-23053/5-102	4' Lengths or 1000' Spools
TU3/32POLY	3/32	.093	2.4	.046	1.2	.020	0.51	MIL-DTL-23053/5-103	4' Lengths or 1000' Spools
TU1/8POLY	1/8	.125	3.2	.062	1.6	.020	0.51	MIL-DTL-23053/5-104	4' Lengths or 1000' Spools
TU3/16POLY	3/16	.187	4.8	.093	2.4	.020	0.51	MIL-DTL-23053/5-105	4' Lengths or 1000' Spools
TU1/4POLY	1/4	.250	6.4	.125	3.2	.025	0.64	MIL-DTL-23053/5-106	4' Lengths or 500' Spools
TU5/16POLY	5/16	.313	7.9	.156	3.97	.025	0.64	N/A	4' Lengths or 500' Spools
TU3/8POLY	3/8	.375	9.5	.187	4.8	.025	0.64	MIL-DTL-23053/5-107	4' Lengths or 200' Spools
TU1/2POLY	1/2	.500	12.7	.250	6.4	.025	0.64	MIL-DTL-23053/5-108	4' Lengths or 200' Spools
TU5/8POLY	5/8	.625	15.9	.313	7.9	.025	0.64	N/A	4' Lengths or 200' Spools
TU3/4POLY	3/4	.750	19.1	.375	9.5	.030	0.76	MIL-DTL-23053/5-109	4' Lengths or 100' Spools
TU1POLY	1	1.000	25.4	.500	12.7	.035	0.89	MIL-DTL-23053/5-110	4' Lengths or 100' Spools
TU1 1/4POLY	1 1/4	1.250	32.0	.630	16.0	.035	0.89	N/A	4' Lengths or 100' Spools
TU1 1/2POLY	1 1/2	1.500	38.1	.750	19.1	.040	1.02	MIL-DTL-23053/5-111	4' Lengths or 100' Spools
TU2POLY	2	2.000	50.8	1.000	25.4	.045	1.14	MIL-DTL-23053/5-112	4' Lengths or 100' Spools
TU3POLY	3	3.000	76.2	1.500	38.1	.050	1.27	MIL-DTL-23053/5-113	4' Lengths or 50' Spools
TU4POLY	4	4.000	101.6	2.000	50.8	.055	1.40	MIL-DTL-23053/5-114	4' Lengths or 50' Spools

- Can be used in general purpose applications such as wire marking, wire bundling, strain reliefs, insulation of terminals, cable jacketing, color coding and electrical insulation of light wire harness assemblies.
- Stocked in 4' lengths and bulk reels.
- Shrink temperature is 120C with indefinite storage life.
- Stocked in black, white, red, yellow, blue and clear. Other colors available upon request.
- Cross reference: ALPHA FIT221, Canusa CPX100, Coleflex ST221, Insultab HS-101, Remtek GPO135, Markel PO135, Raychem RNF-100, 3M/ECC FP301, Sumitomo B2.

Take note!

WCWC can ink jet print in black and white...

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Sleeving - PVC Non-shrink

Multi-purpose Non-shrinkable Polyvinylchloride (PVC) Sleeving (-20C to 105C) UL224 VW-1 and CSA OFT, MIL-DTL-631D Grade C QPL Approved

WCWC P/N	AWG/ Size (In.)	Nominal ID In.	Nominal ID mm	Nominal Wall In.	Nominal Wall mm	Standard Packaging
SLV24PVC	24	0.022	0.56	0.012	0.30	4 x 1,000’
SLV22PVC	22	0.027	0.69	0.012	0.30	4 x 1,000’
SLV20PVC	20	0.034	0.86	0.016	0.41	4 x 1,000’
SLV19PVC	19	0.038	0.97	0.016	0.41	4 x 1,000’
SLV18PVC	18	0.042	1.07	0.016	0.41	4 x 1,000’
SLV17PVC	17	0.047	1.19	0.016	0.41	4 x 1,000’
SLV16PVC	16	0.053	1.35	0.016	0.41	4 x 1,000’
SLV15PVC	15	0.059	1.50	0.016	0.41	4 x 1,000’
SLV14PVC	14	0.066	1.68	0.016	0.41	4 x 1,000’
SLV13PVC	13	0.076	1.93	0.016	0.41	4 x 1,000’
SLV12PVC	12	0.085	2.16	0.016	0.41	4 x 1,000’
SLV11PVC	11	0.095	2.41	0.016	0.41	4 x 1,000’
SLV10PVC	10	0.106	2.69	0.016	0.41	4 x 1,000’
SLV9PVC	9	0.118	3.00	0.020	0.51	4 x 1,000’
SLV8PVC	8	0.133	3.38	0.020	0.51	4 x 1,000’
SLV7PVC	7	0.148	3.76	0.020	0.51	4 x 1,000’
SLV6PVC	6	0.166	4.21	0.020	0.51	2 x 1,000’
SLV5PVC	5	0.186	4.72	0.020	0.51	2 x 1,000’
SLV4PVC	4	0.208	5.28	0.020	0.51	2 x 1,000’
SLV3PVC	3	0.234	5.94	0.020	0.51	2 x 1,000’
SLV1/4PVC	1/4	0.250	6.35	0.020	0.51	2 x 1,000’
SLV2PVC	2	0.263	6.68	0.020	0.51	2 x 1,000’
SLV1PVC	1	0.294	7.47	0.020	0.51	2 x 1,000’
SLV5/16PVC	5/16	0.313	7.94	0.025	0.64	2 x 500’
SLV0PVC	0	0.330	8.38	0.025	0.64	2 x 500’
SLV3/8PVC	3/8	0.375	9.53	0.025	0.64	2 x 500’
SLV7/16PVC	7/16	0.438	11.11	0.025	0.64	2 x 500’
SLV1/2PVC	1/2	0.500	12.7	0.025	0.64	2 x 500’
SLV9/16PVC	9/16	0.563	14.29	0.030	0.76	2 x 250’
SLV5/8PVC	5/8	0.625	15.88	0.030	0.76	2 x 250’
SLV3/4PVC	3/4	0.750	19.05	0.035	0.89	2 x 250’
SLV7/8PVC	7/8	0.875	22.23	0.035	0.89	4 x 100’
SLV1PVC	1	1.000	25.40	0.035	0.89	4 x 100’
SLV1 1/8PVC	1 1/8	1.125	28.58	0.035	0.89	4 x 100’
SLV1 1/4PVC	1 1/4	1.250	31.75	0.040	1.02	4 x 100’
SLV1 3/8PVC	1 3/8	1.375	34.93	0.045	1.14	4 x 50’
SLV1 1/2PVC	1 1/2	1.500	38.10	0.045	1.14	4 x 50’
SLV1 3/4PVC	1 3/4	1.750	44.45	0.055	1.4	4 x 50’
SLV2PVC	2	2.000	50.80	0.060	1.52	4 x 50’
SLV2 1/4PVC	2 1/4	2.250	57.15	0.065	1.65	4 x 50’
SLV2 1/2PVC	2 1/2	2.500	63.50	0.070	1.78	4 x 50’

- ❑ .032 wall also available.
- ❑ Can be used in high dielectric and flexible applications to protect against chafing exposure to most chemicals, oils and acids.
- ❑ Stocked in black, white, red, yellow and clear. Other colors available upon request.
- ❑ Consult your salesperson for availability.
- ❑ Cross reference: Alpha PVC 105, Coleflex P105, Insul 105, Markel HT-105.

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Loom - Black/Poly - Ford

Black, Slit Polyethylene
(-40C) (95C -105C Intermittent Use) (90C Continuous Use)

WCWC P/N	Diameter Inch	Approx. Lbs./Mft.	Full Gaylord	Half Gaylord	UPS #1 22X22X40	UPS #2 20X20X32
LM1/8POLYBLKFORD	1/8”	5.0	N/A	20,000’	10,000’	6,000’
LM1/4POLYBLKFORD	1/4”	8.0	25,000’	12,500’	6,200	3,200’
LM3/8POLYBLKFORD	3/8”	14.5	15,000’	6,800’	3,000’	1,800’
LM1/2POLYBLKFORD	1/2”	21.0	8,000’	4,000’	1,500’	1,200’
LM5/8POLYBLKFORD	5/8”	27.0	6,000’	3,000’	1,000’	800’
LM3/4POLYBLKFORD	3/4”	32.0	4,500’	2,250’	900’	600’
LM1POLYBLKFORD	1”	40.0	2,500’	1,250’	650’	350’
LM1 1/16POLYBLKFORD	1 1/16”	43.0	2,000’	1,000’	500’	250’
LM1 1/4POLYBLKFORD	1 1/4”	50.0	1,700’	850’	350’	200’
LM1 1/2POLYBLKFORD	1 1/2”	61.0	1,500’	750’	N/A	N/A
LM1 5/8POLYBLKFORD	1 5/8”	67.0	1,100’	550’	N/A	N/A
LM1 7/8POLYBLKFORD	1 7/8”	76.0	1,000’	500’	N/A	N/A
LM2POLYBLKFORD	2”	99.0	1,000’	500’	N/A	N/A

- ❑ Can be used to hold groups of wire in position and provides excellent protection against abrasion, crushing, gasoline, oil and many chemicals.
- ❑ Meets Ford specifications.
- ❑ Also available in colors for higher volumes.

Loom - Black/Nylon - Ford

Black, Slit Nylon with Gray Stripe
(-40C) (125C - 190C Intermittent Use) (115C Continuous Use)

WCWC P/N	Diameter Inch	Approx. Lbs/Mft.	Full Gaylord	Half Gaylord	UPS #1 22X22x40	UPS #2 20X20X32
LM1/8NBLKFORD	1/8”	5.0	N/A	20,000’	10,000’	6,000’
LM1/4NBLKFORD	1/4”	8.0	25,000’	12,500’	6,200	3,200’
LM3/8NBLKFORD	3/8”	14.5	15,000’	6,800’	3,000’	1,800’
LM1/2NBLKFORD	1/2”	21.0	8,000’	4,000’	1,500’	1,200’
LM5/8NBLKFORD	5/8”	27.0	6,000’	3,000’	1,000’	800’
LM3/4NBLKFORD	3/4”	32.0	4,500’	2,250’	900’	600’
LM1NBLKFORD	1”	40.0	2,500’	1,250’	650’	350’
LM1 1/16NBLKFORD	1 1/16”	43.0	2,000’	1,000’	500’	250’
LM1 1/4NBLKFORD	1 1/4”	50.0	1,700’	850’	350’	200’
LM1 1/2NBLKFORD	1 1/2”	61.0	1,500’	750’	N/A	N/A
LM1 5/8NBLKFORD	1 5/8”	67.0	1,100’	550’	N/A	N/A
LM1 7/8NBLKFORD	1 7/8”	76.0	1,000’	500’	N/A	N/A
LM2NBLKFORD	2”	99.0	1,000’	500’	N/A	N/A

- ❑ Can be used to hold groups of wire in position and provides excellent protection against abrasion, crushing, gasoline, oil and many chemicals.
- ❑ Meets Ford specifications.
- ❑ Also available in colors for higher volumes.

Loom - Black/Poly Packard/GM

Black, Slit Polyethylene
(-40C) (95C - 105C Intermittent Use) (90C Continuous Use)

WCWC P/N	Internal Metric	mm to Decimal	Common Reference	Approx. Lbs./Mft.	Full Gaylord	Half Gaylord	UPS #1 22X22X40	UPS #2 20X20X32
LM6MMPOLYBLK	6mm	.236	1/4”	8.0	25,000’	12,500’	6,200’	3,200’
LM9MMPOLYBLK	9mm	.354	5/16”	13.5	15,000’	7,500’	3,200’	1,800’
LM10MMPOLYBLK	10mm	.3937	3/8”	14.5	12,000’	6,000’	2,700’	1,700’
LM13MMPOLYBLK	13mm	.512	1/2”	21.0	8,000’	4,000’	1,500’	1,200’
LM16MMPOLYBLK	16mm	.630	5/8”	27.0	6,000’	3,000’	1,000’	800’
LM19MMPOLYBLK	19mm	.748	3/4”	32.0	4,500’	2,250’	900’	600’
LM22MMPOLYBLK	22mm	.866	7/8”	36.0	3,500’	1,750’	800’	450’
LM25MMPOLYBLK	25mm	.984	1”	40.0	2,500’	1,250’	650’	350’
LM30MMPOLYBLK	30mm	1.18	1 1/5”	44.0	2,000’	1,000’	400’	N/A

- Can be used to hold groups of wire in position and provides excellent protection against abrasion, crushing, gasoline, oil and many chemicals.
- Meets Delphi, Packard Electric’s specifications.
- Also available in colors for higher volumes.

Loom - Black/Nylon Packard/GM

Black, Slit Nylon with Gray Stripe
(-40C) (125C - 190C Intermittent Use) (115C Continuous Use)

WCWC P/N	Internal Metric	mm to Decimal	Common Reference	Approx. Lbs./Mft.	Full Gaylord	Half Gaylord	UPS #1 22X22X40	UPS #2 20X20X32
LM6MMNBLK	6mm	.236	1/4”	8.0	25,000’	12,500’	6,200’	3200’
LM9MMNBLK	9mm	.354	5/16”	13.5	15,000’	7,500’	3,200’	1,800’
LM10MMNBLK	10mm	.3937	3/8”	14.5	12,000’	6,000’	2,700’	1,700’
LM13MMNBLK	13mm	.512	1/2”	21.0	8,000’	4,000’	1,500’	1,200’
LM16MMNBLK	16mm	.630	5/8”	27.0	6,000’	3,000’	1,000’	800’
LM19MMNBLK	19mm	.748	3/4”	32.0	4,500’	2,250’	900’	600’
LM22MMNBLK	22mm	.866	7/8”	36.0	3,500’	1,750’	800’	450’
LM25MMNBLK	25mm	.984	1”	40.0	2,500’	1,250’	650’	350’
LM30MMNBLK	30mm	1.18	1 1/5”	44.0	2,000’	1,000’	400’	N/A

- Can be used to hold groups of wire in position and provides excellent protection against abrasion, crushing, gasoline, oil and many chemicals.
- Meets Delphi, Packard Electric’s specifications.
- Also available in colors for higher volumes.

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Uninsulated Solid Bus Bar Wire

MIL-W-3861 Type S, A-A-59551 (Supercedes QQ-W-343 Type S)

WCWC P/N	AWG Size	Conductor Stranding	Nominal Circular Mil. Area	Nominal Diameter	Approx. Lbs./Mft.
UN30S	30	Solid, Bare or Tinned	100.5	.0100	.3042
UN28S	28	Solid, Bare or Tinned	159.8	.0126	.4837
UN26S	26	Solid, Bare or Tinned	254.1	.0159	.7692
UN24S	24	Solid, Bare or Tinned	404.0	.0201	1.223
UN22S	22	Solid, Bare or Tinned	642.4	.0253	1.945
UN20S	20	Solid, Bare or Tinned	1022.0	.0320	3.092
UN18S	18	Solid, Bare or Tinned	1624.0	.0403	4.917
UN16S	16	Solid, Bare or Tinned	2583.0	.0508	7.818
UN14S	14	Solid, Bare or Tinned	4107.0	.0641	12.43
UN12S	12	Solid, Bare or Tinned	6530.0	.0808	19.77
UN10S	10	Solid, Bare or Tinned	10380.0	.1019	31.43
UN8S	8	Solid, Bare or Tinned	16510.0	.1290	50.0

❑ Can be used for applications such as point to point wiring, component leads, and ground wire.

Uninsulated Tinned Copper

Uninsulated Tinned Copper Flat Braids
ASTM-B-33, A-A-59569 (Supersedes QQB575)

WCWC P/N	A-A or QQB	Nominal Flat Width	Nominal Thickness	AWG of Ends	NO. of Strands	NO. of Wire per Strand	Total Ends	AWG Equivalent	Nominal CMA	Nominal AMPS*
UN1/8FTC	F36T0078	1/8”	.020”	36	24	3	72	18	1,800	16.0
UN3/16FTC	F36T0125	3/16”	.020”	36	24	5	120	15	3,000	25.0
UN1/4FTC	F36T0171	1/4”	.030”	36	24	7	168	14	4,200	32.0
UN3/8FTC	-	3/8”	.030”	36	48	6	288	12	7,200	40.0
UN1/2FTC	-	1/2”	.030”	36	48	8	384	10	9,600	53.0
UN3/4FTC	F36T0781	3/4”	.040”	36	48	18	864	7	20,800	85.0
UN1FTC	-	1”	.045”	36	48	18	864	7	20,800	85.0
UN2FTC	-	2”	.140”	30	48	32	1,536	3/0	153,600	290.0
UN3FTC	-	3”	.190	30	48	47	2256	4/0	225,600	780.0

*Values shown are for bare cable in free air at 30C (86F) and are for reference use only.

❑ Can be used for bonding straps, grounding, or connecting moving parts.

Uninsulated Tinned Copper Tubular Braids
ASTM-B-33, A-A-59569 (Supersedes QQB575)

WCWC P/N	A-A or QQB	Nominal ID Rounded	AWG of Ends	NO. of Strands	NO. of Wire per Strand	Total Ends	AWG Equivalent	Nominal CMA	Nominal AMPS*
UN1/8TUBTC	R36T0125	1/8”	36	24	5	120	15	3,000	25.0
UN1/4TUBTC	R36T0250	1/4”	36	24	16	384	10	9,600	53.0
UN3/8TUBTC	R36T0375	3/8”	36	48	8	384	10	9,600	53.0
UN1/2TUBTC	R36T0500	1/2”	36	48	11	528	9	13,200	62.0
UN25/32TUBTC	R36T0781	25/32”	36	48	18	864	7	21,600	88.0

*Values shown are for bare cable in free air at 30C (86F) and are for reference use only.

❑ Can be used for bonding straps, grounding, connecting moving parts, shielding, and for protective covering.

Uninsulated Tinned Extra Flexible Copper Rope
ASTM-B-33 (Bundled per ASTM B172)

WCWC P/N	AWG Size	Conductor Stranding	Construction	Approx. CMA	Ampacity	Nominal Dia. in.	mm	Wt/M’
UN10(413)RTC	10	413/36	7x59/36	10325	51.2	.13	3,30	33
UN8(665)RTC	8	665/36	7x95/36	16625	70.6	.166	4,22	53
UN6(1050)RTC	6	1050/36	7x150/36	26250	96.2	.204	5,18	83
UN4(1666)RTC	4	1666/36	7x7x34/36	41650	131	.29	7,37	134
UN2(665)RTC	2	665/30	7x95/30	68900	181.0	.335	8,51	211

❑ Can be used for applications such as point to point wiring, component leads, grounding, or connecting moving parts.

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Drumcones

- ❑ Keeps your wire clean.
- ❑ Fits standard wire drums.
- ❑ Can be moved from empty drum to full drum easily: no down time.
- ❑ Avoid garbage in drum.
- ❑ Wire tangling down time is virtually eliminated.
- ❑ Pays for itself in the wire you scrap through tangling.
- ❑ Drumcone contains and controls the wire you're pulling.
- ❑ These Drumcones were designed to match the high feed rates of today's wire processing systems.

Clear Polycarbonate

Black High Density Polyethylene

DRUMBOX®

World Class Wire & Cable, Inc.'s DRUMBOX® was registered by the United States Patent and Trademark Office in 2002. The DRUMBOX® was designed for the wire process industry to eliminate wire memory problems that can be a result of tight winding on a spool or reel. You also get the benefits of drum style payout with the ability to get smaller than normal drum size quantities. It also can be shipped UPS where a drum cannot.

UPS DRUMBOX® Quantities Quantities per Gauge and Style

AWG Size	UL 1061 & Type B	UL 1007, TXL & TWP	GPTM, GXL, GPT, TFFN & THHN	1015, 3173, 3321, SIS & SXL	1275, 1276 & HDT
10	n/a	2000'	1500'	1000'	750'
12	n/a	2500'	2000'	1500'	1000'
14	n/a	3500'	3000'	2000'	1500'
16	6000'	5500'	4000'	3000'	2000'
18	8000'	7000'	6000'	4000'	2500'
20	10,000'	9000'	7000'	5000'	3000'

Spools, Reels, Drums & Cones

Spools

WCWC P/N	Flange Diameter	Traverse Length	Barrel Diameter	Arbor Hole
SPOOL1PLASTIC	3.5”	3”	.875”	.750”
SPOOL2PLASTIC	6.5”	2”	2”	.780”
SPOOL3PLASTIC	6.5”	4.5”	2”	.780”
SPOOL4PLASTIC	6.5”	6.5”	2”	.780”
SPOOL5PLASTIC	10.5”	4”	3.5”	1.53”

Reels

WCWC P/N	Flange Diameter	Traverse Length	Barrel Diameter	Arbor Hole
REEL6WOOD	10.5”	6”	3.5”	1.50”
REEL7WOOD	12”	10”	5”	1.75”
REEL8WOOD	16”	10”	6”	1.75”

Fiber Drums

WCWC P/N	Size	Height	Diameter	Weight
DRUMSMALL	35 Gallon	21”	23”	13 lbs.
DRUMMEDIUM	55 Gallon	30”	23”	15 lbs.
DRUMLARGE	75 Gallon	42”	23”	19 lbs.

DRUMBOX®

Size
22” x 22” x 6” Tall

Drum Pak DRUMBOX® Dereelers

WCWC P/N	Description
DRUMCONEBLK	High Density Polyethylene
DRUMCONECLR	Clear Polycarbonate

American Wire Gauge to Metric (AWG - mm²)

AWG	mm2	AWG	mm2	AWG	mm2
30	0.05	12	4	300MCM	150
28	0.08	10	6	350MCM	185
26	0.14	8	10	500MCM	240
24	0.25	6	16	600MCM	300
22	0.34	4	25	750MCM	400
21	0.38	2	35	1,000MCM	500
20	0.5	1	50		
18	0.75	1/0	55		
17	1	2/0	70		
16	1.5	3/0	95		
14	2.5	4/0	120		

Automotive SAE Recommended Conductors

AWG Size	Number of Strands	Nominal O.D. of Strand	AWG Size	Number of Strands	Nominal O.D. of Strand
22	7/30	.0100	6	133/27	.0142
20	7/28	.0126	4	61/22	.0253
18	16/30	.0100	4	133/25	.0179
18	19/32	.0080	2	133/23	.0218
16	19/29	.0113	1	133/22	.0243
14	19/27	.0142	1/0	133/21	.0275
12	19/25	.0179	2/0	133/20	.0309
10	19/23	.0226	3/0	266/22	.0249
8	19/21	.0285	4/0	418/23	.0226
6	37/21	.0285			

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Chrysler/Ford Specification Conversion

Chrysler Specifications

Chrysler P/N	Wire type	WCWC P/N	SAE #
MS-3450	GPT-Standard PVC	GPT AWG/Color	J1128
MS-3494	HDT-Heavy wall PVC	HDT AWG/Color	J1128
MS-5919	SXL-Standard X-LINK	SXL AWG/Color	J1128
MS-7889	TWP-Thin wall PVC	TWP AWG/Color	J1128
MS-8288	TXL-Extra thin wall X-LINK	TXL AWG/Color	J1128
MS-8900	GXL - Thin wall X-LINK	GXL AWG/Color	J1128
MS-3450	Marine GPT-Standard PVC 105C bare & tinned	GPTM AWG/Color	J378 & J1128

Ford Specifications

Ford P/N	Wire type	WCWC P/N	SAE #
M1L 50-A	HDT - Heavy wall PVC	HDT AWG/Color	J1128
M1L 56-A	GPT - Standard PVC	GPT AWG/Color	J1128
M1L 57-A	GPT - Standard PVC w/TC stranding	GPT AWG/TC/Color	J1128
M1L 58-A	GPT - Standard PVC 105C	GPT AWG/Color	J1128
M1L 58-A	Marine GPT - Standard PVC 105C bare	GPTM AWG/Color	J378 & J1128
M1L 59-A	GPT - Standard PVC 105C w/TC stranding	GPT AWG/TC/Color	J1128
M1L 59-A	Marine GPT - Standard PVC 105C w/TC stranding	GPTM AWG/TC/Color	J378 & J1128
M1L 85-A	SXL - Standard X-LINK	SXL AWG/Color	J1128
M1L 85-B	GXL Thin wall X-LINK	GXL AWG/Color	J1128
M1L 86-A	SXL - Standard X-LINK w/TC stranding	SXL AWG/TC/Color	J1128
M1L 120-A	TWP - Thin wall PVC	TWP AWG/Color	J1128
M1L 123-A	TXL - Extra thin wall X-LINK	TXL AWG/Color	J1128

Color Codes

CHART 1 - ICEA - METHOD 1 (K-1)

Insulated Cable Engineers Association **National Electric Code**

Conductor Number	Color Code	Conductor Number	Color Code	Conductor Number	Color Code
1	Black	21	Orange/Green	41	Green/White/Blue
2	White	22	Black/White/Red	42	Orange/Red/Green
3	Red	23	White/Black/Red	43	Blue/Red/Green
4	Green	24	Red/Black/White	44	Black/White/Blue
5	Orange	25	Green/Black/White	45	White/Black/Blue
6	Blue	26	Orange/Black/White	46	Red/White/Blue
7	White/Black	27	Blue/Black/White	47	Green/Orange/Red
8	Red/Black	28	Black/Red/Green	48	Orange/Red/Blue
9	Green/Black	29	White/Red/Green	49	Blue/Red/Orange
10	Orange/Black	30	Red/Black/Green	50	Black/Orange/Red
11	Blue/Black	31	Green/Black/Orange	51	White/Black/Orange
12	Black/White	32	Orange/Black/Green	52	Red/Orange/Black
13	Red/White	33	Blue/White/Orange	53	Green/Red/Blue
14	Green/White	34	Black/White/Orange	54	Orange/Black/Blue
15	Blue/White	35	White/Red/Orange	55	Blue/Black/Orange
16	Black/Red	36	Orange/White/Blue	56	Black/Orange/Green
17	White/Red	37	White/Red/Blue	57	White/Orange/Green
18	Orange/Red	38	Black/White/Green	58	Red/Orange/Green
19	Blue/Red	39	White/Black/Green	59	Green/Black/Blue
20	Red/Green	40	Red/White/Green	60	Orange/Green/Blue

CHART 1 - ICEA - METHOD 1 (K-2)

Insulated Cable Engineers **National Electric Code**

Conductor Number	Color Code	Conductor Number	Color Code
1	Black	19	Orange/Blue
2	Red	20	Yellow/Blue
3	Blue	21	Brown/Blue
4	Orange	22	Black/Orange
5	Yellow	23	Red/Orange
6	Brown	24	Blue/Orange
7	Red/Black	25	Yellow/Orange
8	Blue/Black	26	Brown/Orange
9	Orange/Black	27	Black/Yellow
10	Yellow/Black	28	Red/Yellow
11	Brown/Black	29	Blue/Yellow
12	Black/Red	30	Orange/Yellow
13	Blue/Red	31	Brown/Yellow
14	Orange/Red	32	Black/Brown
15	Yellow/Red	33	Red/Brown
16	Brown/Red	34	Blue/Brown
17	Black/Blue	35	Orange/Brown
18	Red/Blue	36	Yellow/Brown

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Common Physical/Electrical Properties

AWG Conductor Chart

Copper Conductor Data

The following data covers the more commonly used conductor constructions in the electrical and electronics industry. Special constructions, not shown, are available or can be designed to meet specific requirement.

AWG	Stranding	Type Stranding	Diameter[4] Inch	Diameter[4] mm	Area Circ. mils	Area Sq. mm	Weight lbs/M	Weight kg./km.	D.C. Resistance 20 C2 Bare or silver coating ohms/M	Bare or silver coating ohms/km.	Tin coating[3] ohms/M	Tin coating[3] ohms/km.	Break str. lbs.
32	7/40	CO or BU	.0096	.254	100	.051	.21	.31	176	577	-	-	1.986
30	SOLID	-	.010	.254	100	.051	.30	.45	113	371	104	340	3.157
	7/38	BU	.012	.305	112	.057	.35	.52	106	348	92.6	303	
28	SOLID	-	.01264	.321	159	.081	.48	.72	70.8	232	65.3	214	5.020
	7/36	CO	.015	.381	175	.089	.55	.82	67.5	221	59.3	194	
27	SOLID	-	.0142	.361	202	.102	.61	.91	55.6	182	51.4	169	6.331
	7/35	CO or BU	.017	.432	220	.111	.69	1.04	53.8	176	-	-	
26	SOLID	-	.016	.404	253	.128	.77	1.14	44.5	146	41	135	7.983
	7/34	CO or BU	.019	.483	278	.141	.87	1.29	42.5	139	37.3	122	
	10/36	BU	.0193	.490	250	.127	.78	1.15	47.3	155	40.4	133	
	19.38	BU or CO	.021	.533	304	.154	.97	1.44	38.9	128	34.1	112	
24	SOLID	-	.0201	.511	404	.205	1.22	1.82	27.2	89.2	25.7	84.2	12.69
	7/32	CO or BU	.024	.610	448	.227	1.38	2.05	25.7	84.2	23.1	75.9	
	16/36	BU	.024	.610	400	.201	1.25	1.64	29.5	96.8	27.5	90.2	
	19/36	CO or BU	.025	.635	475	.241	1.48	2.20	24.9	81.7	21.8	71.6	
22	SOLID	-	.025	.643	643	.324	1.94	2.89	16.7	54.8	16.2	53.2	19.43
	7/30	CO or BU	.030	.762	700	.355	2.19	3.26	16.6	54.4	14.8	48.6	
	19/34	BU or EQ	.0315	.800	754	.382	2.35	3.50	15.5	50.8	13.8	45.1	
20	SOLID	-	.032	.813	1020	.519	3.10	4.61	10.5	34.4	10.1	33.2	30.89
	7/28	CO or BU	.038	.965	1111	.562	3.49	5.19	10.3	33.8	9.33	30.6	
	10/30	BU	.037	.940	1000	.507	3.14	4.67	11.4	37.4	10.4	34	
	19/32	CO, BU or EQ	.040	1.02	1216	.616	3.84	5.71	9.48	31.1	8.53	28	
	26/34	BU	.039	.940	1032	.523	3.28	4.88	11.3	37.1	-	-	
19	SOLID	-	.0359	.912	1290	.653	3.90	5.80	-	-	8.05	26.4	38.95
18	SOLID	-	.0403	1.024	1620	.823	4.92	7.32	6.77	22.2	6.39	21	49.12
	7/26	CO or BU	.048	1.22	1770	.897	5.55	8.26	6.45	21.2	5.55	19.2	
	16/30	BU	.0475	1.207	1600	.810	5.01	7.45	7.15	23.4	6.48	21.3	
	19/30	CO, BU or EQ	.050	1.27	1900	.963	5.95	8.85	6.10	20	5.46	17.9	
	41/34	BU	.049	1.244	1627	.824	5.09	7.08	7.08	23.2	6.6	21.6	
16	SOLID	-	.0508	1.29	2580	1.31	7.81	11.6	4.47	14.7	4.16	13.6	78.10
	19/294	BU or EQ	.057	1.45	2426	1.23	7.52	11.2	4.82	15.8	4.27	14	
	19/.0117	BU	.0585	1.50	2601	1.32	8.02	11.9	4.39	14.4	4.13	13.5	
	26/30	BU	.0606	1.54	2600	1.32	8.15	12.1	4.39	14.4	3.99	13.1	
	65/34	BU	.060	1.52	2581	1.31	8.20	11.9	4.47	14.7	4.16	13.6	
14	SOLID	-	.0641	1.63	4110	2.08	12.4	18.5	2.68	8.79	2.52	8.28	124.20
	7/.0242	BU	.073	1.85	4100	2.08	12.7	18.9	-	-	2.61	8.56	
	19/274	CO, EQ or UN	.071	1.80	3831	1.94	12.1	18.0	3.05	10	2.71	8.88	
	10/.0147	CU	.074	1.88	4106	2.08	12.7	18.9	-	-	2.61	8.56	
	41/30	BU	.077	1.96	4100	2.08	12.9	19.2	2.81	9.22	2.53	8.3	
12	SOLID	-	.0808	2.05	6530	3.31	19.8	29.5	1.69	5.54	1.59	5.21	197.50
	7/.0305	CO	.092	2.34	6512	3.30	20.2	30.1	-	-	1.64	5.38	
	19/254	CO, EQ or UN	.0905	2.299	6088	3.08	19.4	28.9	1.87	6.13	1.7	5.59	
	19/.0185	BU	.0925	2.35	6503	3.30	20.2	30.1	-	-	1.64	5.25	
	65/30	BU	.094	2.388	6500	3.29	20.8	31.1	1.82	5.97	1.64	5.25	314.50
10	SOLID	-	.1019	2.588	10,380	5.26	31.4	46.8	-	-	1	3.28	
	7/.0385	CO	.116	2.95	10,376	5.25	32.0	47.6	-	-	1	3.28	
	19/.0234	BU	.117	2.97	10,404	5.27	32.0	47.6	-	-	0.98	3.21	
	37/.0169	CO	.112	2.84	9361	4.74	29.2	43.4	-	-	1.25	4.1	
	105/30	BU	.126	3.20	10,500	5.32	33.8	49.2	1.10	3.61	0.99	3.24	
8	7/.0486	CO	.146	3.71	16,534	8.38	50.1	74.5	-	-	0.65	2.13	
	19/.0295	BU or EQ	.144	3.66	16,535	8.38	50.0	74.4	-	-	0.65	2.13	
	133/29	RO 19 7/29	.169	4.293	16,983	8.61	54.0	80.4	.71	2.33	-	-	
	168/30	RO 7 24/30	.174	4.42	16,800	8.51	53.4	79.0	.70	2.3	-	-	
6	19/.0374	BU	.188	4.775	26,576	13.33	81.1	121	-	-	0.4	1.3	
	133/27	RO 19 7/27	.213	5.41	26,818	13.60	84.1	125	.43	1.41	-	-	
	266/30	RO 7 38/30	.222	5.64	26,600	13.49	83.2	124	.44	1.44	-	-	
4	133/25	RO 19 7/25	.257	6.53	42,615	21.61	135	201	.29	0.95	-	-	
	420/30	RO 7 60/30	.270	6.85	42,000	21.29	140	208	.28	0.92	-	-	
2	665/30	RO 19 35/30	.338	8.59	66,500	33.72	213	317	.18	0.59	-	-	

[1]BU - Bunched; CO - Concentric; EQ - Equilay; RO - Rope; UN - Unilay

[2]Typical D.C. resistance values for uninsulated wires. Multiply by 1.04 for typical values after insulation.

[3]Values are for tinned, heavy tinned, prefused, overcoated to topcoated conductors.

[4]Does not meet UL conductor stranding requirements.

Comparative Properties of Fluoropolymers

	FEP TEFLON	TEFZEL (ETFE)	TFE TEFLON	SOLEF/KYNAR (PVDF)/PVF	HALAR (E-CTFE)
Oxidation Resistance	O	E	O	O	O
Heat Resistance	O	E	O	O	O
Oil Resistance	O	E	E-O	E	O
Low Temperature Flexibility	O	E	O	F	O
Weather, Sun Resistance	O	E	O	E-O	O
Ozone Resistance	E	E	O	E	E
Abrasion Resistance	E	E	O	E	E
Electrical Properties	E	E	E	G-E	E
Flame Resistance	O	G	E	E	E-O
Nuclear Radiation Resistance	P-G	E	P	E	E
Water Resistance	E	E	E	E	E
Acid Resistance	E	E	E	G-E	E
Alkali Resistance	E	E	E	E	E
Gasoline, Kerosene, Etc. (Aliphatic Hydrocarbons) Resistance	E	E	E	E	E
Benzol, Toluol, Etc. (Aromatic Hydrocarbons) Resistance	E	E	E	G-E	E
Degreaser Solvents (Halogenated Hydrocarbons) Resistance	E	E	E	G	E
Alcohol Resistance	E	E	E	E	E
Underground Burial	E	E	E	E	E

P = Poor F = Fair G = Good E = Excellent O = Outstanding

These ratings are based on average performance of general purpose compounds. Any given property can usually be improved by the use of selective compounding.

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Comparative Properties of Plastics

	PVC	Low-Density Polyethylene	Cellular Polyethylene	High-Density Polyethylene	Polypropylene	Cellular Polypropylene	Polyurethane	Nylon	CPE
Oxidation Resistance	E	E	E	E	E	E	E	E	E
Heat Resistance	G-E	G	G	E	E	E	G	E	E
Oil Resistance	F	G-E	G	G-E	F	F	E	E	E
Low Temperature Flexibility	P-G	E	E	E	P	P	G	G	E
Weather, Sun Resistance	G-E	E	E	E	E	E	G	E	E
Ozone Resistance	E	E	E	E	E	E	E	E	E
Abrasion Resistance	F-G	G	F	E	F-G	F-G	O	E	E-O
Electrical Properties	F-G	E	E	E	E	E	P	P	E
Flame Resistance	E	P	P	P	P	P	P	P	E
Nuclear Radiation Resistance	F	G-E	G	G-E	F	F	G	F-G	O
Water Resistance	F-G	E	E	E	E	E	P-G	P-F	O
Acid Resistance	G-E	G-E	G-E	E	E	E	F	P-F	E
Alkali Resistance	G-E	G-E	G-E	E	E	E	F	E	E
Gasoline, Kerosene, Etc. (Aliphatic Hydrocarbons) Resistance	P	G-E	G	G-E	P-F	P	P-G	G	E
Benzol, Toluol, Etc. (Aromatic Hydrocarbons) Resistance	P-F	P	P	P	P-F	P	P-G	G	G-E
Degreaser Solvents (Halogenated Hydrocarbons) Resistance	P-F	G	G	G	P	P	P-G	G	E
Alcohol Resistance	G-E	E	E	E	E	E	P-G	P	E
Underground Burial	P-G	G	N/A	E	N/A	N/A	G	P	E-O

P = Poor F = Fair G = Good E = Excellent O = Outstanding

These ratings are based on average performance of general purpose compounds. Any given property can usually be improved by the use of selective compounding.

Comparative Properties of Rubber

	Silicone	Neoprene	Hypalon (Chlorosulfonated Polyethylene)	EPDM (Ethylene-propylene-diene monomer)	Rubber
Oxidation Resistance	E	G	E	E	F
Heat Resistance	O	G	E	E	F
Oil Resistance	F-G	G	G	P	P
Low Temperature Flexibility	O	F-G	F	G-E	G
Weather, Sun Resistance	O	G	E	E	F
Ozone Resistance	O	G	E	E	P
Abrasion Resistance	P	G-E	G	G	E
Electrical Properties	G	P	G	E	G
Flame Resistance	F-G	G	G	P	P
Nuclear Radiation Resistance	E	F-G	E	G	F
Water Resistance	G-E	E	E	G-E	G
Acid Resistance	F-G	G	E	G-E	F-G
Alkali Resistance	F-G	G	E	G-E	F-G
Gasoline, Kerosene, Etc. (Aliphatic Hydrocarbons) Resistance	P-F	G	F	P	P
Benzol, Toluol, Etc. (Halogenated Hydrocarbons) Resistance	P	P-F	F	F	P
Degreaser Solvents (Halogenated Hydrocarbons) Resistance	P-G	P	P-F	P	P
Alcohol Resistance	G	F	G	P	G

These ratings are based on average performance of general purpose compounds. Any given property can usually be improved by the use of selective compounding.

P = Poor F = Fair G = Good E = Excellent O = Outstanding

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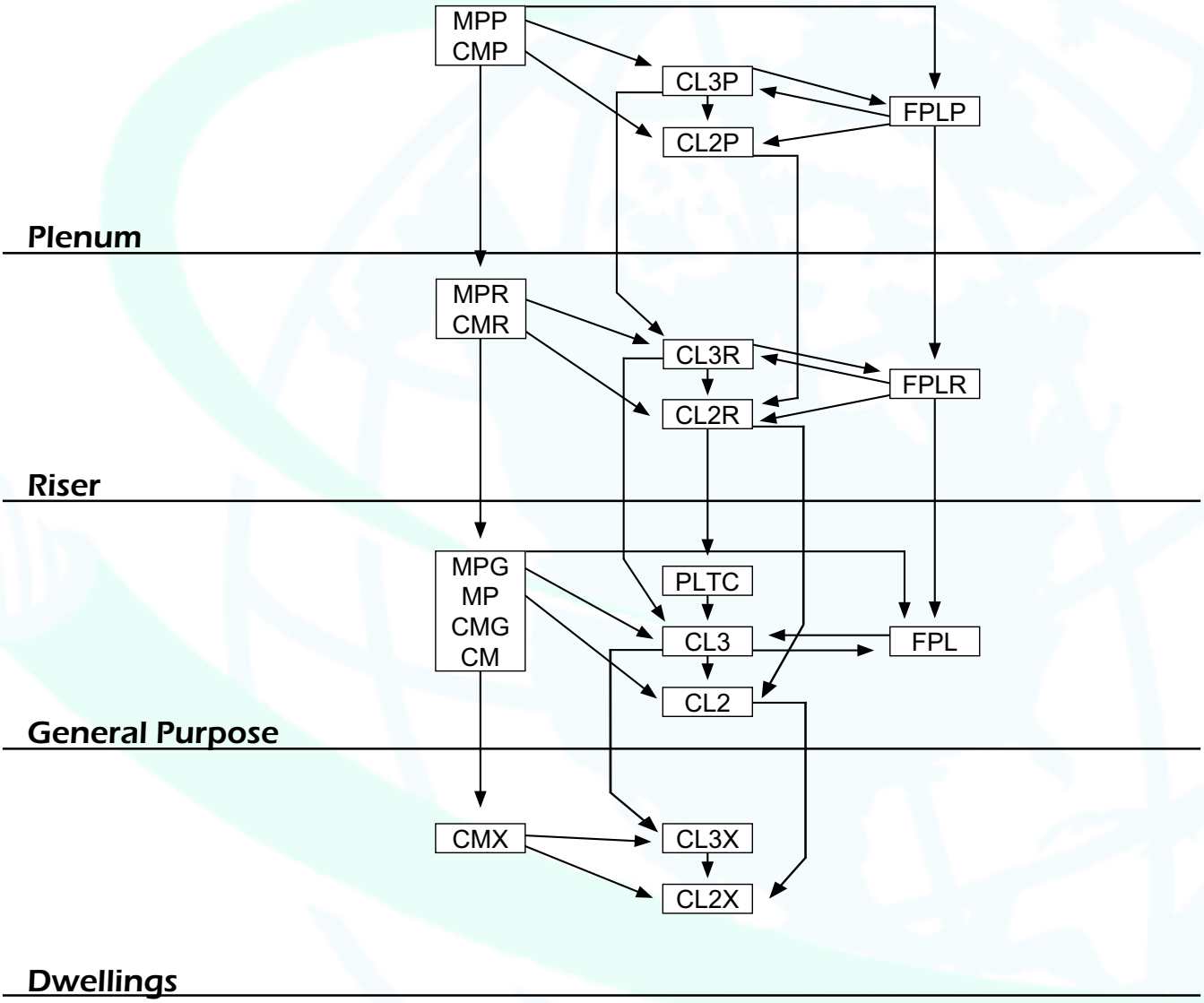
Conduit Fill Chart

Trade Size		Wire Size (THWN, THHN) conductor Size AWG/kcmil																				
		14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0	250	300	350	400	500	600	700	750
	EMT	12	9	5	3	2	1	1	1	1	1											
1/2	IMC	14	10	6	3	2	1	1	1	1	1	1										
	GRC	13	9	6	3	2	1	1	1	1	1											
	EMT	22	16	10	6	4	2	1	1	1	1	1	1	1								
3/4	IMC	24	17	11	6	4	3	2	1	1	1	1	1	1								
	GRC	22	16	10	6	4	2	1	1	1	1	1	1	1								
	EMT	35	26	16	9	7	4	3	3	1	1	1	1	1	1	1	1					
1	IMC	39	29	18	10	7	4	4	3	2	1	1	1	1	1	1	1	1				
	GRC	36	26	17	9	7	4	3	3	1	1	1	1	1	1	1	1	1				
	EMT	61	45	28	16	12	7	6	5	4	3	2	1	1	1	1	1	1	1	1	1	
1 1/4	IMC	68	49	31	18	13	8	6	5	4	3	2	1	1	1	1	1	1	1	1	1	1
	GRC	63	46	29	16	12	7	6	5	4	3	2	1	1	1	1	1	1	1	1	1	
	EMT	84	61	38	22	16	10	8	7	5	4	3	2	1	1	1	1	1	1	1	1	1
1 1/2	IMC	91	67	42	24	17	10	9	7	5	4	4	3	3	2	1	1	1	1	1	1	1
	GRC	85	62	39	22	16	10	8	7	5	4	3	3	2	1	1	1	1	1	1	1	1
	EMT	138	101	63	36	26	16	13	11	8	7	6	5	4	3	2	1	1	1	1	1	1
2	IMC	149	109	68	39	38	17	15	12	9	8	6	5	4	3	3	2	2	1	1	1	1
	GRC	140	102	64	37	27	16	14	11	8	7	6	5	4	3	3	2	2	1	1	1	1
	EMT	241	176	111	64	46	28	24	20	15	12	10	8	7	6	5	4	4	3	2	2	1
2 1/2	IMC	211	154	97	56	40	25	21	17	13	11	9	7	6	5	4	4	3	3	2	1	1
	GRC	200	146	92	53	38	23	20	17	12	10	8	7	6	5	4	3	3	2	1	1	1
	EMT	364	226	167	96	69	43	36	30	22	19	16	13	11	9	7	6	6	5	4	3	3
3	IMC	362	238	150	86	62	38	32	27	20	17	14	12	9	8	7	6	5	4	3	3	3
	GRC	309	225	142	82	59	36	31	26	19	16	13	11	9	7	6	5	5	4	3	3	3
	EMT	476	347	219	126	91	56	47	40	29	25	20	17	14	11	10	9	8	6	5	4	4
3 1/2	IMC	436	318	200	115	83	51	43	36	27	23	19	16	13	10	9	8	7	6	5	4	4
	GRC	412	301	189	109	79	48	41	34	25	21	18	15	12	10	8	7	7	5	4	4	4
	EMT	608	443	279	161	116	71	60	51	37	32	26	22	18	15	13	11	10	8	7	6	5
4	IMC	562	410	258	149	107	66	56	47	35	29	24	20	17	13	12	10	9	7	6	5	5
	GRC	531	387	244	140	101	62	53	44	33	27	23	19	16	13	11	10	8	7	6	5	5

- For Reference only.
- Above information referenced from tables C1, C4, and C8 of 1996 NEC.
- EMT- Electrical Metallic Tubing (EMT). Circualr wireway with much more workable properties than intermediate metal conduits (IMT), or rigid metal conduit (RMC); may be cut, formed and bent more easily.
- IMC- Intermediate metal conduit (IMC). Rigid raceway with thinner walls than rigid metal conduit (RMC), but the same outside diameter.
- GRC- Galvanized rigid conduit (GRC). Metal conduit that has been coated with zinc, and often other agents, to increase resistance to abrasion and corrosion.

Data Cable Substitution Hierarchy



TYPE CM -	Communications Wires and Cables
TYPE CL2 & CL3 -	Class 2 and Class 3 Remote-control, Signaling
TYPE FPL -	and Power-limited Cables.
TYPE MP -	Power Limited Fire Alarm Cables
TYPE PLTC -	Multipurpose Cables

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Decimal Conversion Factors

Fractions, decimals and millimeter conversion chart

Fractions of an inch						Equivalents		Fractions of an inch						Equivalents	
64	32	16	8	4	2	Decimal	mm	64	32	16	8	4	2	Decimal	mm
1						0.016	0.41	33						0.516	13.10
2	1					0.031	0.79	34	17					0.531	13.49
3						0.047	1.19	35						0.547	13.89
4	2	1				0.063	1.60	36	18	9				0.563	14.30
5						0.078	1.19	37						0.578	14.68
6	3					0.094	1.60	38	19					0.594	15.09
7						0.109	1.98	39						0.609	15.47
8	4	2	1			0.125	2.39	40	20	10	5			0.625	15.88
9						0.141	2.77	41						0.641	16.28
10	5					0.156	3.18	42	21					0.656	16.66
11						0.172	4.37	43						0.672	17.07
12	6	3				0.187	4.75	44	22	11				0.687	17.45
13						0.203	5.16	45						0.703	17.86
14	7					0.219	5.56	46	23					0.719	18.26
15						0.234	5.95	47						0.734	18.64
16	8	4	2	1		0.250	6.35	48	24	12	6	3		0.750	19.05
17						0.266	6.76	49						0.766	19.45
18	9					0.281	7.14	50	25					0.781	19.84
19						0.297	7.54	51						0.797	20.24
20	10	5				0.313	7.95	52	26	13				0.813	20.65
21						0.328	8.33	53						0.828	21.03
22	11					0.344	8.73	54	27					0.844	21.44
23						0.359	9.13	55						0.859	21.82
24	12	6	3			0.375	9.53	56	28	14	7			0.875	22.23
25						0.391	9.93	57						0.891	22.63
26	13					0.406	10.31	58	29					0.906	23.01
27						0.422	10.72	59						0.922	23.42
28	14	7				0.437	11.10	60	30	15				0.937	23.80
29						0.453	11.51	61						0.953	24.21
30	15					0.469	11.91	62	31					0.969	24.61
31						0.484	12.29	63						0.984	24.99
32	16	8	4	2	1	0.500	12.70	64	32	16	8	4	2	1.000	25.40

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Metric Conversion Table

Square millimeters to square inches and circular mils

Square mm	Square inch	Circular mils.	Square mm	Square inch	Circular mils.	Square mm	Square inch	Circular mils.
1000	1.550	1,974,000	95	0.1472	187,530	9.5	0.01472	18,753
975	1.511	1,924,700	90	0.1395	177,660	9.0	0.01395	17,766
950	1.472	1,875,300	85	0.1317	167,790	8.5	0.01317	16,779
925	1.434	1,826,000	80	0.1240	157,920	8.0	0.01240	15,792
900	1.395	1,776,600	75	0.1163	148,050	7.5	0.01163	14,805
875	1.356	1,727,300	70	0.1085	138,180	7.0	0.01085	13,818
850	1.317	1,677,900	60	0.0930	118,440	6.0	0.00930	11,844
825	1.240	1,579,200	55	0.0853	108,570	5.5	0.00853	10,857
775	1.201	1,529,900	50	0.0775	98,700	5.0	0.00775	9,870
750	1.163	1,480,500	45	0.0698	88,830	4.75	0.00736	9,377
725	1.124	1,431,200	40	0.0620	78,960	4.50	0.00698	8,883
700	1.085	1,381,800	35	0.0542	69,090	4.25	0.00659	8,390
675	1.046	1,332,500	30	0.0465	59,220	4.00	0.00620	7,896
650	1.008	1,283,100	25	0.0388	49,350	3.75	0.00581	7,403
625	0.969	1,233,800	20.0	0.0310	39,480	3.50	0.00542	6,909
600	0.930	1,184,400	19.5	0.0302	38,490	3.25	0.00504	6,416
575	0.891	1,135,100	19.0	0.0294	37,510	3.00	0.00465	5,922
550	0.891	1,085,700	18.5	0.0287	35,530	2.75	0.00426	4,935
525	0.814	1,036,400	18.0	0.0279	35,530	2.50	0.00388	4,935
500	0.775	987,000	17.5	0.0271	34,550	2.25	0.00349	4,442
475	0.736	937,700	17.0	0.0264	33,560	2.00	0.00310	3,948
450	0.698	888,300	16.5	0.0256	32,560	1.75	0.00271	3,455
425	0.659	839,000	16.0	0.0248	31,580	1.50	0.00233	2,961
400	0.620	789,600	15.5	0.0240	30,600	1.25	0.00194	2,468
375	0.581	740,300	15.0	0.0233	29,610	1.00	0.00155	1,974
350	0.542	690,900	14.5	0.0225	28,620	0.90	0.00140	1,777
325	0.504	641,600	14.0	0.0217	27,640	0.80	0.00124	1,579
300	0.465	592,200	13.5	0.0209	26,650	0.75	0.00116	1,481
275	0.426	542,900	13.0	0.0201	26,650	0.70	0.00109	1,481
250	0.388	493,500	12.5	0.0194	24,680	0.60	0.000930	1,184
225	0.349	444,200	12.0	0.0186	23,690	0.50	0.000775	987
200	0.310	394,800	11.5	0.0178	22,700	-	-	-
175	0.291	345,500	11.0	0.0171	21,700	-	-	-
150	0.233	296,100	10.5	0.0163	20,730	-	-	-
125	0.1938	246,800	10.0	0.0155	19,740	-	-	-
100	0.1550	197,400						

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Military Part Number

Specified Per MIL-W-16878

M16878/# - # - # - # - #

Military Spec Sheet Number "Slash Sheet"		Conductor Material	AWG Size		Stranding		Military Color Code	
1 = B	18 = CN	A = Bare Copper	A	32	A	Solid	0	BLK
2 = C	19 = DN	B = Coated Copper	B	30	B	7	1	BRN
3 = D	20 = ET W Ag	C = Coated Copper Covered Stl.	C	28	C	10	2	RED
4 = E X Ag	21 = E W Ag	D = Coated High Strength Copper Alloy	D	26	D	16	3	ORG
5 = EE X Ag	22 = EE W Ag		E	24	E	19	4	YEL
6 = ET Ag	23 = ET X NI		F	22	F	26	5	GRN
7 = F6 Ag	24 = ET W NI		G	20	G	37	6	BLU
8 = FFI Ag	25 = E X NI		H	18	H	41	7	VLT
10 = J	26 = E W NI		J	16	J	65	8	GRY
11 = K Ag	27 = EE X NI		K	14	K	105	9	WHT
12 = KK Ag	28 = EE W NI		L	12	L	133		
13 = KT Ag	29 = F 6 TC		M	10	M	259		
14 = KLPE6	30 = FF 1 TC		N	8	N	427		
15 = XLPE1	31 = FF1TCGB		P	6	P	665		
16 = XLPE3	32 = FFIAgGB		R	4	R	817		
17 = BN	33 = JN		S	2	S	1045		
			T	1	T	1330		
			V	0	V	1672		
			W	00	W	2109		
			Y	000				
			Z	0000				

Solid Copper Wire

AWG Size	Nominal Diameter Inches	mm	Circular mil area	Weight Pounds per 1000'	Resistance @ 68F Ohms per 1000'
10	.1019	2.60	10380.0	31.43	.9989
11	.0907	2.30	8234.0	24.92	1.260
12	.0808	2.05	6530.0	19.77	1.588
13	.0720	1.83	5178.0	15.68	2.003
14	.0641	1.63	4107.0	12.43	2.525
15	.0571	1.45	3260.0	9.858	3.184
16	.0508	1.29	2583.0	7.818	4.016
17	.0453	1.15	2050.0	6.200	5.064
18	.0403	1.02	1620.0	4.917	6.385
19	.0359	.912	1200.0	3.899	8.051
20	.0320	.813	1020.0	3.092	10.15
21	.0285	.724	812.1	2.452	12.80
22	.0253	.643	640.4	1.945	16.14
23	.0226	.574	511.5	1.542	20.36
24	.0201	.511	404.0	1.223	25.67
25	.0179	.455	320.4	.9699	32.37
26	.0159	.404	253.0	.7692	40.81
27	.0142	.361	201.5	.6100	51.47
28	.0126	.320	159.8	.4837	64.90
29	.0113	.287	126.7	.3836	81.83
30	.0100	.254	100.5	.3042	103.2
31	.0089	.226	79.7	.2413	130.1
32	.0080	.203	63.21	.1913	164.1
33	.0079	.180	50.13	.1517	206.9
34	.0063	.160	39.75	.1203	260.9
35	.0056	.142	31.52	.09542	331.0
36	.0050	.127	25.00	.07568	414.8
37	.0045	.114	19.83	.06130	512.1
38	.0040	.102	15.72	.04759	648.6
39	.0035	.089	12.20	.03774	847.8
40	.0031	.079	9.61	.02993	1080.0

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Sales Fax: 262.951.7778

Stranded Copper Wire

AWG Size	Stranding (nom AWG)	Min. avg. O.D. of strand	Approximate O.D. Inches	Approximate O.D. mm	ASTM min. circular mil area	Min. weight Pounds per 1000'	Max. resist.* @ 68F OHMS per 1000'
36	7/44	.0019	.006	.153	25	.076	414.8
34	7/42	.0024	.0075	.191	39.7	.121	260.9
32	7/40	.0030	.0093	.203	64	.195	164.1
32	19/44	.0018	.010	.229	64	.195	164.1
30	7/38	.0040	.012	.305	100	.304	112
30	19/42	.0023	.012	.305	100	.304	112
28	7/36	.0050	.015	.381	159	.484	70.7
28	19/40	.0029	.016	.406	159	.484	70.7
27	7/35	.0056	.017	.457	202	.614	55.6
26	7/34	.0063	.019	.483	253	.770	44.4
26	10/36	.0050	.021	.553	253	.770	44.4
26	19/38	.0040	.020	.508	253	.770	44.4
24	7/32	.0080	.024	.610	404	1.229	27.7
24	10/34	.0063	.024	.584	404	1.229	27.7
24	19/36	.0050	.024	.610	404	1.229	27.7
24	42/40	.0031	.023	.584	404	1.229	27.7
22	7/30	.0100	.030	.762	640	1.947	17.5
22	19/34	.0058	.031	.787	640	1.947	17.5
22	26/36	.0050	.030	.762	640	1.947	17.5
20	7/28	.0126	.037	.890	1,020	3.103	10.9
20	10/30	.0100	.037	.890	1,020	3.103	10.9
20	19/32	.0080	.037	.940	1,020	3.103	10.9
20	26/34	.0063	.036	.914	1,020	3.103	10.9
20	42/36	.0050	.036	.914	1,020	3.103	10.9
18	7/26	.0159	.048	1.22	1,620	4.93	6.92
18	16/30	.0100	.047	1.20	1,620	4.93	6.92
18	19/30	.0100	.049	1.24	1,620	4.93	6.92
18	42/34	.0063	.047	1.20	1,620	4.93	6.92
18	65/36	.0050	.047	1.20	1,620	4.93	6.92
16	7/24	.0201	.060	1.52	2,580	7.85	4.35
16	19/29	.0113	.058	1.47	2,580	7.85	4.35
16	26/30	.0100	.059	1.50	2,580	7.85	4.35
16	65/34	.0063	.059	1.50	2,580	7.85	4.35
16	105/36	.0050	.059	1.50	2,580	7.85	4.35
14	7/22	.0253	.076	1.85	4,110	12.5	2.73
14	19/26	.0159	.071	1.85	4,110	12.5	2.73
14	42/30	.0100	.075	1.85	4,110	12.5	2.73
14	105/34	.0063	.075	1.85	4,110	12.5	2.73
12	7/20	.0320	.096	2.44	6,530	19.86	1.71
12	19/25	.0179	.093	2.36	6,530	19.86	1.71
12	65/30	.0100	.095	2.41	6,530	19.86	1.71
12	165/34	.0063	.095	2.41	6,530	31.58	1.71
10	37/26	.0159	.115	32.92	10,380	31.58	1.08
10	65/28	.0126	.120	2.95	10,380	31.58	1.08
10	105/30	.0100	.118	2.95	10,380	31.58	1.08
8	49/25	.0179	.188	4.78	16,851	47.53	.67
8	133/29	.0113	.166	4.22	16,851	51.42	.61
8	655/36	.0050	.166	4.22	16,851	49.58	.62
6	133/27	.0142	.210	5.33	26,029	81.14	.47
6	259/30	.0010	.210	5.33	26,029	78.35	.40
6	1050/36	.0050	.204	5.18	26,029	79.47	.39
4	133/25	.0179	.257	6.53	41,338	129.01	.24
4	259/28	.0126	.261	6.63	41,338	158.02	.20
4	1666/36	.0050	.290	7.37	41,338	126.10	.25

Stranded Copper Wire

AWG Size	Stranding (nom AWG)	Min. avg. O.D. of strand	Approximate O.D.		ASTM min. circular mil area	Min. weight Pounds per 1000'	Max. resist.* @ 68F OHMS per 1000'
			Inches	mm			
2	133/23	.0226	.328	8.33	66,832	205.62	.15
2	259/26	.0159	.325	8.26	66,832	198.14	.16
2	665/30	.0100	.335	8.51	66,832	201.16	.16
2	2646/36	.0050	.379	9.63	66,832	200.28	.16
1	133/22	.0253	.365	9.27	84,015	257.60	.12
1	259/25	.0179	.375	9.53	84,015	251.20	.13
1	836/30	.0010	.377	9.58	84,015	247.10	.13
1	2107/34	.0063	.375	9.53	84,015	253.29	.12
1/0	133/21	.0285	.464	11.79	104,636	327.05	.096
1/0	259/24	.0201	.422	10.67	104,636	316.76	.099
2/0	133/20	.0320	.500	12.70	131,960	412.17	.077
2/0	259/23	.0226	.473	12.01	131,960	400.41	.077
3/0	259/22	.0253	.509	12.93	167,401	501.70	.062
3/0	427/24	.0201	.538	13.67	167,401	522.20	.059
4/0	259/21	.0285	.606	15.39	212,342	638.88	.049
4/0	427/23	.0226	.605	15.37	212,342	660.01	.047

Stranding Classes

TYPICAL WIRE STRANDS

AWG Sizes	Solid	Class B	Class C	Class H	Class K	Class L	Class M	Class O
26	.0167	-	-	-	-	7/.008	7/.0063	-
24	.0201	7/.0080	19/.0046	-	-	7/.008	-	19/.005
22	.0253	7/.0100	19/.0058	-	7/.010	7/.008	19/.0063	-
20	.0320	7/.0126	19/.0080	-	10/.010	16/.008	26/.0063	41/.005
19	.03589	-	-	-	-	-	-	-
18	.0403	7/.0152	19/.0100	-	16/.010	26/.008	41/.0063	65/.005
16	.0508	7/.0192	19/.0113	-	26/.010	41/.008	65/.0063	104/.005
14	.0641	7/.0242	19/.0147	-	41/.010	65/.008	104/.0063	-
12	.0808	7/.0305	19/.0185	-	65/.010	104/.008	168/.0063	-
10	.1019	7/.0385	19/.0234	-	104/.010	165/.008	259/.0063	-
9	.1144	7/.0432	19/.0262	133/.0099	133/.010	-	336/.0063	-
8	.1285	7/.0486	19/.0295	133/.0111	168/.010	-	420/.0063	-
6	-	7/.0612	19/.0372	133/.0142	266/.010	-	665/.0063	-
4	-	7/.0772	19/.0469	133/.0179	420/.010	-	1064/.0063	-
2	-	7/.0974	19/.0591	133/.0223	665/.010	-	1666/.0063	-
1	-	19/.0664	37/.0476	259/.0180	836/.010	-	2107/.0063	-
1/0	-	19/.0745	37/.0534	259/.0202	1064/.010	-	2646/.0063	-
2/0	-	19/.0837	37/.0600	259/.0227	1323/.010	-	3325/.0063	-
3/0	-	19/.0940	37/.0673	259/.0255	1666/.010	-	4256/.0063	-
4/0	-	19/.1055	37/.0756	259/.0286	2107/.010	-	5320/.0063	-
250 MCM	-	37/.0822	61/.0640	427/.0242	2499/.010	-	6384/.0063	-
300 MCM	-	37/.0900	61/.0701	427/.0265	2989/.010	-	7581/.0063	-
350 MCM	-	37/.0973	61/.0757	427/.0287	3458/.010	-	8806/.0063	-
400 MCM	-	37/.1040	61/.0810	427/.0306	3990/.010	-	10101/.0063	-
500 MCM	-	37/.1162	61/.0905	427/.0342	5054/.010	-	12691/.0063	-
750 MCM	-	61/.1109	91/.0908	427/.0417	7581/.010	-	18788/.0063	-
1000 MCM	-	61/.1280	91/.1048	427/.0484	10101/.010	-	25193/.0063	-

Note: For UL listed or recognized 200C cables requiring 200C and tin-coated copper strands, each strand diameter should be .015" or larger.

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Suggested Ampacities

All types of insulations
Based on National Electrical Code

	Copper						Aluminum					
	Not more than 3 conductors in raceway or cable		Single conductor in free air				Not more than 3 conductors in raceway or cable		Single conductor in free air			
	Conductor Temperature Rating						Conductor Temperature Rating					
Size AWG or MCM	85-90 C Temp (185 F)	110 C Temp (230 F)	85-90 C Temp (185 F)	110 C Temp (230 F)	125 C Temp (257 F)	200 C Temp (392 F)	85-90 C Temp (185 F)	110 C Temp (230 F)	85-90 C Temp (185 F)	110 C Temp (230 F)	125 C Temp (257 F)	200 C Temp (392 F)
	Amperes per Conductor 100% Load Factor						Amperes per Conductor 100% Load Factor					
14	25	30	30	40	40	45	-	-	-	-	-	-
12	30	35	40	50	50	55	25	25	30	40	40	45
10	40	45	55	65	70	75	30	35	45	50	55	60
8	55	60	75	85	90	100	40	45	55	65	70	80
6	70	80	100	120	125	135	55	60	80	95	100	105
4	95	105	135	160	170	180	75	80	105	125	135	140
2	125	135	185	210	225	240	100	105	140	165	175	185
1	145	160	215	245	265	280	110	125	165	190	205	220
1/0	165	190	250	285	305	325	130	150	190	220	240	255
2/0	190	215	290	330	355	370	145	170	220	255	275	290
3/0	215	245	335	385	410	430	170	195	255	300	320	335
4/0	250	275	390	445	475	510	195	215	300	345	370	400
250	275	315	440	495	530	-	220	250	330	385	415	-
300	310	345	485	555	590	-	250	275	375	435	460	-
350	340	390	550	610	655	-	270	310	415	475	510	-
400	365	420	595	665	710	-	295	335	450	520	555	-
500	415	470	675	765	815	-	335	380	515	595	635	-
600	460	525	750	855	910	-	370	425	585	675	720	-
700	500	560	825	940	1005	-	405	455	645	745	795	-
750	515	580	855	980	1045	-	420	470	670	775	825	-
800	535	600	885	1020	1085	-	430	485	695	805	855	-
900	565	-	950	-	-	-	465	-	750	-	-	-
1000	590	680	1020	1165	1240	-	485	560	800	930	990	-
	Correction factors for various ambient air temperatures											
40 C	0.90	0.94	0.90	0.94	0.95	-	0.90	0.94	0.90	0.94	0.95	-
50	0.80	0.87	0.80	0.87	0.89	-	0.80	0.87	0.80	0.87	0.89	-
60	0.67	0.79	0.67	0.79	0.83	0.91	0.67	0.79	0.67	0.79	0.83	0.91
70	0.52	0.71	0.52	0.71	0.76	0.87	0.52	0.71	0.52	0.71	0.76	0.87
80	0.30	0.61	0.30	0.61	0.69	0.84	0.30	0.61	0.30	0.61	0.69	0.84
90	-	0.50	-	0.50	0.61	0.80	-	0.50	-	0.50	0.61	0.80
100	-	-	-	-	0.51	0.77	-	-	-	-	0.51	0.77
120	-	-	-	-	-	0.69	-	-	-	-	-	0.69
140	-	-	-	-	-	-	0.59	-	-	-	-	0.59

Based on ambient temperature of 30C (86 F).

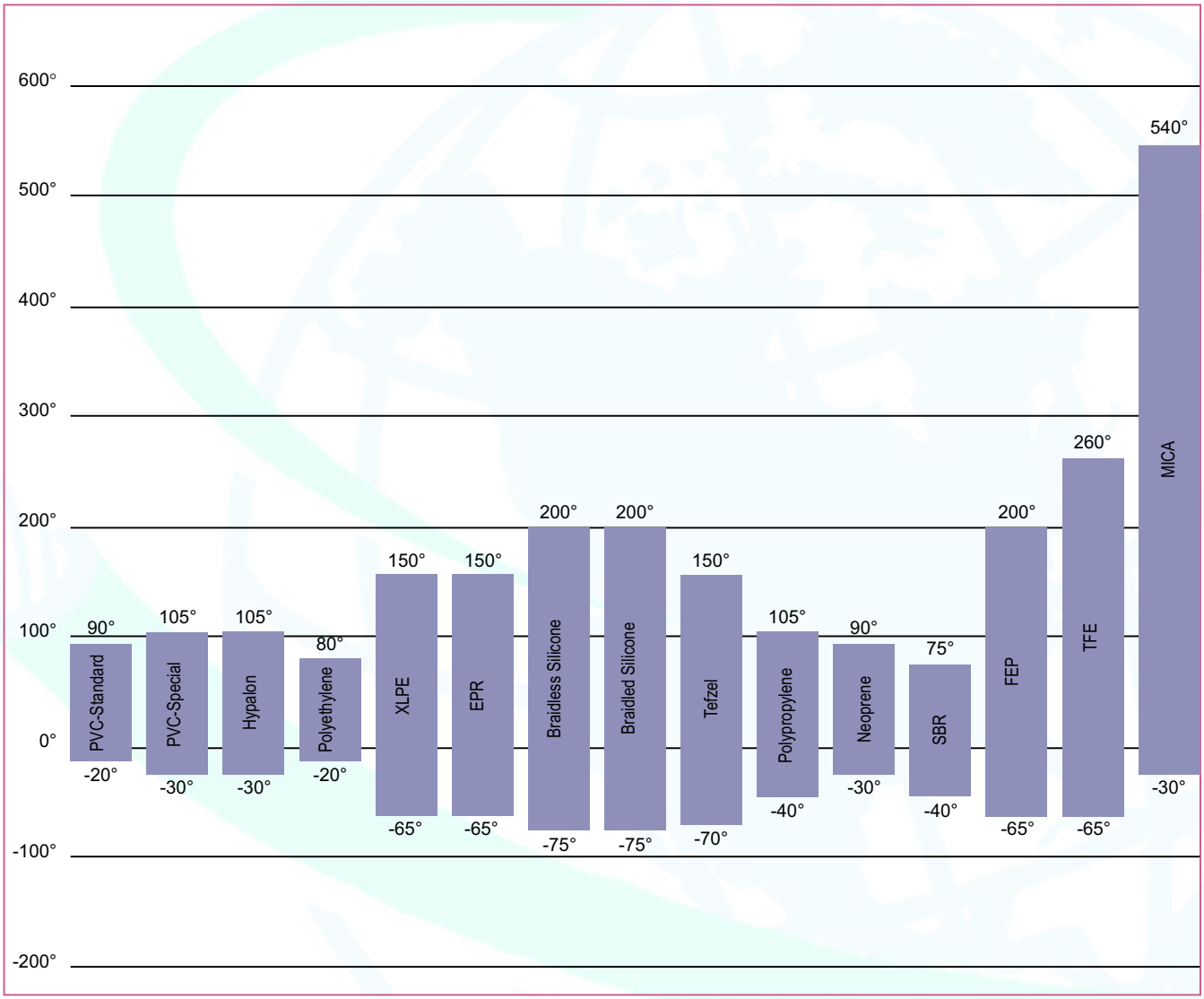
Technical

Typical Temperature Range

Insulation & Jacket Materials

Temperatures may vary depending on formulation of compound.

Temperature Centigrade



Temperature Conversion Formula

C= 5/9 (F-32) **F= 9/5 (C+32)**

Technical

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Temperature Conversion

Find the known temperature in the center column. If you need the Centigrade conversion, go to the C column. If you need the Fahrenheit conversion, go to the F column.

°C	TEMP.	°F
-45.0	-49.0	-56.2
-44.4	-48.0	-54.4
-43.9	-47.0	-52.6
-43.3	-46.0	-50.8
-42.8	-45.0	-49.0
-42.2	-44.0	-47.2
-41.7	-43.0	-45.4
-41.1	-42.0	-43.6
-40.6	-41.0	-41.8
-40.0	-40.0	-40.0
-39.4	-39.0	-38.2
-38.9	-38.0	-36.4
-38.3	-37.0	-34.6
-37.8	-36.0	-32.8
-37.2	-35.0	-31.0
-36.7	-34.0	-29.2
-36.1	-33.0	-27.4
-35.6	-32.0	-25.6
-35.0	.31.0	-23.8
-34.4	-30.0	-22.0
-33.9	-29.0	-20.2
-33.3	-28.0	-18.4
-32.8	-27.0	-16.6
-32.2	-26.0	-14.8
-31.7	-25.0	-13.0
-31.1	-24.0	-11.2
-30.6	-23.0	-9.4
-30.0	-22.0	-7.6
-29.4	-21.0	-5.8
-28.9	-20.0	-4.0
-28.3	-19.0	-2.2
-27.8	-18.0	-0.4
-27.2	-17.0	1.4
-26.7	-16.0	3.2
-26.1	-15.0	5.0
-25.6	-14.0	6.8
-25.0	-13.0	8.6
-24.4	-12.0	10.4
-23.9	-11.0	12.2
-23.3	-10.0	14.0
-22.8	-9.0	15.8
-22.2	-8.0	17.6
-21.7	-7.0	19.4
-21.1	-6.0	21.2
-20.6	-5.0	23.0
-20.0	-4.0	24.8
-19.4	-3.0	26.6
-18.9	-2.0	28.4
-18.3	-1.0	30.2
-17.8	0.0	32.0

°C	TEMP.	°F
-17.2	1.0	33.8
-16.7	2.0	35.6
-16.1	3.0	37.4
-15.6	4.0	39.2
-15.0	5.0	41.0
-14.4	6.0	42.8
-13.9	7.0	44.6
-13.3	8.0	46.4
-12.8	9.0	48.2
-12.2	10.0	50.0
-11.7	11.0	51.8
-11.1	12.0	53.6
-10.6	13.0	55.4
-10.0	14.0	57.2
-9.4	15.0	59.0
-8.9	16.0	60.8
-8.3	17.0	62.6
-7.8	18.0	64.4
-7.2	19.0	66.2
-6.7	20.0	68.0
-6.1	21.0	69.8
-5.6	22.0	71.6
-5.0	23.0	73.4
-4.4	24.0	75.2
-3.9	25.0	77.0
-3.3	26.0	78.8
-2.8	27.0	80.6
-2.2	28.0	82.4
-1.7	29.0	84.2
-1.1	30.0	86.0
-0.6	31.0	87.8
0.0	32.0	89.6
0.6	33.0	91.4
1.1	34.0	93.2
1.7	35.0	95.0
2.2	36.0	96.8
2.8	37.0	98.6
3.3	38.0	100.4
3.9	39.0	102.2
4.4	40.0	104.0
5.0	41.0	105.8
5.6	42.0	107.6
6.1	43.0	109.4
6.7	44.0	111.2
7.2	45.0	113.0
7.8	46.0	114.8
8.3	47.0	116.6
8.9	48.0	118.4
9.4	49.0	120.2
10.0	50.0	122.0

°C	TEMP.	°F
10.6	51.0	123.8
11.1	52.0	125.6
11.7	53.0	127.4
12.2	54.0	129.2
12.8	55.0	131.0
13.3	56.0	132.8
13.9	57.0	134.6
14.4	58.0	136.4
15.0	59.0	138.2
15.6	60.0	140.0
16.1	61.0	141.8
16.7	62.0	143.6
17.2	63.0	145.4
17.8	64.0	147.2
18.3	65.0	149.0
18.9	66.0	150.8
19.4	67.0	152.6
20.0	68.0	154.4
20.6	69.0	156.2
21.1	70.0	158.0
21.7	71.0	159.8
22.2	72.0	161.6
22.8	73.0	163.4
23.3	74.0	165.2
23.9	75.0	167.0
24.4	76.0	168.8
25.0	77.0	170.6
25.6	78.0	172.4
26.1	79.0	174.2
26.7	80.0	176.0
27.2	81.0	177.8
27.8	82.0	179.6
28.3	83.0	181.4
28.9	84.0	183.2
29.4	85.0	185.0
30.0	86.0	186.8
30.6	87.0	188.6
31.1	88.0	190.4
31.7	89.0	192.2
32.2	90.0	194.0
32.8	91.0	195.8
33.3	92.0	197.6
33.9	93.0	199.4
34.4	94.0	201.2
35.0	95.0	203.0
35.6	96.0	204.8
36.1	97.0	206.6
36.7	98.0	208.4
37.2	99.0	210.2
37.8	100.0	212.0

°C	TEMP.	°F
38.3	101.0	213.8
38.9	102.0	215.6
39.4	103.0	217.4
40.0	104.0	219.2
40.6	105.0	221.0
41.1	106.0	222.8
41.7	107.0	224.6
42.2	108.0	226.4
42.8	109.0	228.2
43.3	110.0	230.0
43.9	111.0	231.8
44.4	112.0	233.6
45.0	113.0	235.4
45.6	114.0	237.2
46.1	115.0	239.0
46.7	116.0	240.8
47.2	117.0	242.6
47.8	118.0	244.4
48.3	119.0	246.2
48.9	120.0	248.0
49.4	121.0	249.8
50.0	122.0	251.6
50.6	123.0	253.4
51.1	124.0	255.2
51.7	125.0	257.0
52.2	126.0	258.8
52.8	127.0	260.6
53.3	128.0	262.4
53.9	129.0	264.2
54.4	130.0	266.0
55.0	131.0	267.8
55.6	132.0	269.6
56.1	133.0	271.4
56.7	134.0	273.2
57.2	135.0	275.0
57.8	136.0	276.8
58.3	137.0	278.6
58.9	138.0	280.4
59.4	139.0	282.2
60.0	140.0	284.0
60.6	141.0	285.8
61.1	142.0	587.6
61.7	143.0	289.4
62.2	144.0	291.2
62.8	145.0	293.0
63.3	146.0	294.8
63.9	147.0	296.6
64.4	148.0	289.4
65.0	149.0	300.2
65.6	150.0	302.0

°C	TEMP.	°F
66.1	151.0	303.8
66.7	152.0	305.6
67.2	153.0	307.4
67.8	154.0	309.2
68.3	155.0	311.0
68.9	156.0	312.8
69.4	157.0	314.6
70.0	158.0	316.4
70.6	159.0	318.2
71.1	160.0	320.0
71.7	161.0	321.8
72.2	162.0	323.6
72.8	163.0	325.4
73.3	164.0	327.2
73.9	165.0	329.0
74.4	166.0	330.8
75.0	167.0	332.6
75.6	168.0	334.4
76.1	169.0	336.2
76.7	170.0	338.0
77.2	171.0	339.8
77.8	172.0	341.6
78.3	173.0	343.4
78.9	174.0	345.2
79.4	175.0	347.0
80.0	176.0	348.8
80.6	177.0	350.6
81.1	178.0	352.4
81.7	179.0	354.2
82.2	180.0	356.0
82.8	181.0	357.8
83.3	182.0	359.6
83.9	183.0	361.4
84.4	184.0	363.2
85.0	185.0	365.0
85.6	186.0	366.8
86.1	187.0	368.6
86.7	188.0	370.4
87.2	189.0	372.2
87.8	190.0	374.0
88.3	191.0	375.8
88.9	192.0	377.6
89.4	193.0	379.4
90.0	194.0	381.2
90.6	195.0	383.0
91.1	196.0	384.8
91.7	197.0	386.6
92.2	198.0	388.4
92.8	199.0	390.2
93.3	200.0	392.0

Temperature Conversion Formula

C= 5/9 (F-32) F= 9/5 (C+32)

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Unit Conversion Factors

Conversion Factors

Unit	X	Constant	=	Unit
Btu		778.0		Foot-pound (ft-lb)
Btu		1054.8		Joules
Btu		0.293		Watt-hours (w-hr)
Centimeters (cm)		0.032808		Feet (ft)
Centimeters (cm)		0.3937		Inches (in)
Centimeters (cm)		0.00001		Kilometers (km)
Centimeters (cm)		0.010		Meters (m)
Centimeters (cm)		10.0		Millimeters (mm)
Circular mils		0.00064516		Circular millimeters
Circular mils		0.0000007854		Inches2 (in2)
Circular mils		0.00050671		Square Millimeters (mm2)
Circular mils		0.7854		Mils2
Circular mils		0.7854		Square mile
Cubic centimeter (cm3)		0.000035314		Cubic foot (ft3)
Cubic centimeter (cm3)		0.061023		Cubic inch (in3)
Cubic centimeter (cm3)		0.000001		Cubic meter (m3)
Cubic centimeter (cm3)		0.00026417		Gallons
Cubic foot (ft3)		1728.0		Cubic inch (in3)
Cubic foot (ft3)		28317.016		Cubic centimeter (cm3)
Cubic foot		0.02832		Cubic meter
Cubic inch (in3)		0.0005787		Cubic foot (ft3)
Cubic inch (in3)		0.000016387		Cubic meter (m3)
Cubic inch (in3)		16.387162		Cubic centimeter (cm3)
Cubic meter (m3)		1000000.0		Centimeter (cm)
Cubic meter (m3)		35.314456		Cubic foot (ft3)
Cubic meter (m3)		264.17		Gallons
Feet (ft)		0.00018939		Miles
Feet (ft)		0.33333		Yards (yd)
Feet (ft)		12		Inches (in)
Feet (ft)		0.0003048		Kilometer (km)
Feet (ft)		0.3048		Meters (m)
Feet (ft)		30.48		Centimeter (cm)
Feet (ft)		304.8		Millimeters (mm)
Feet/pound (ft/lb)		0.00067197		Meters/grams (m/g)
Foot-pound (ft-lb)		0.001285		Btu
Foot-pound (ft-lb)		1.356		Joules
Foot-pound (ft-lb)		0.1383		Kilogram/meter (kg/m)
Gallons		3.785332		Liters (l)
Gallons		0.13368		Cubic foot (ft3)
Gallons		231.0		Cubic inch (in3)
Gallons		3785.332		Cubic centimeter (cm3)
Grams (g)		15.432		Grains
Gram		0.03527		Ounce
Gram/centimeter3 (gm/cm3)		0.0361275		Pounds/in3 (lb/m3)

Unit	X	Constant	=	Unit
Horsepower (hp)		33000.0		Ft-lb/min
Horsepower (hp)		550.0		Ft-lb/sec
Horsepower (hp)		745.7		Watts (w)
Inch (in)		0.027178		Yards (yd)
Inch (in)		0.083333		Feet (ft)
Inch (in)		0.0000254		Kilometers (km)
Inch (in)		0.0254		Meters (m)
Inch (in)		2.54000514		Centimeters (cm)
Inch (in)		25.4000514		Millimeters (mm)
Inch (in)		1000.0		Mils
Joules		0.000948		Btu
Joules		107		Ergs
Kilogram		2.205		Pound
Kilogram/km		0.6214		Pound/kft
Kilometers		0.6214		Miles
Liters (l)		61.025		Cubic inch (in3)
Meters (m)		1.093611		Yards (yd)
Meters (m)		3.2808333		Feet (ft)
Meters (m)		39.37		Inch (in)
Meters (m)		100.0		Centimeters (cm)
Miles		1760.0		Yards (yd)
Miles		5280.0		Feet (ft)
Miles		1.6093		Kilometers (km)
Millimeters (mm)		0.0032808		Feet (ft)
Millimeters (mm)		0.03937		Inch (in)
Millimeters (mm)		0.001		Meters (m)
Millimeters (mm)		0.01		Centimeters (cm)
Millimeters (mm)		39.3701		Mils
Millimeters (mm)		1000		Microns
Ohms/km		0.3048		Ohms/kft
Ounce		28.35		Gram
Pound		0.4536		Kilogram
Pound/kft		1.4881		Kilogram/km
Square inch		6.452		Square centimeter
Square centimeter		0.155		Square inch
Square foot		0.0929		Square meter
Square meter		10.76		Square foot
Square miles		2.59		Square kilometer
Square kilometer		0.3861		Square mile
Watts (w)		44.25		Ft-lb/minute
Watts (w)		0.737562		Ft-lb/sec
Watts (w)		0.001341		Horsepower (hp)
Watt-hour (w-hr)		3.41266		Btu

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A - Common abbreviation for Ampere.

AAR - American Association of Railroads.

Abrasion Resistance - Ability to resist surface wear.

ABSwitch - A coaxial cable switch capable of switching one cable to one of two branch cables, A or B.

AC - Alternating Current.

AC - A UL cable type branch circuit and feeder cables with flexible metal tape armor.

ACAR - Aluminum conductor, aluminum-reinforced cable.

Accelerated Aging - A test that duplicates long time environmental conditions in a relatively short time.

Acceptance Test - Made to demonstrate the degree of compliance with specified requirements.

ACF - Access Control Facility. A group of IBM products that implement SNA concepts such as distribution of function and resource sharing.

ACK - Acknowledgement Character. In binary synchronous communications, a control character sent to indicate that the previous transmission block was accepted by the receiver, and that it is ready to accept the next block.

ACSR - Aluminum conductor, steel reinforced transmission cable. A bare composite of aluminum and steel wires, usually aluminum around steel.

ACSR/AW - Aluminum conductor, steel reinforced, using aluminum clad steel wire.

ACSR/AZ - Aluminum conductor, steel reinforced, using aluminum steel wire.

ACSR/GA - Aluminum conductor, steel reinforced, using class A zinc coated steel wire.

ACSR/GB - Aluminum conductor, steel reinforced, using class B zinc coated steel wire.

ACSR/GC - Aluminum conductor, steel reinforced, using class C zinc coated steel wire.

ACT - Acknowledgement. A control character used (with NAK) in BSC communications protocol to indicate that the previous transmission block was correctly received and that the receiver is ready to accept the next block. Also used as a ready reply in other communications protocols, such as Hewlett-Packard's ENQ/ACK protocol and the ETX/ACK method of flow control.

ACU - Automatic Calling Unit. A unit, which may or may not be integrated within a modem, that automatically dials calls based on digits supplied by the attached business machine.

A/D - Analog/Digital. An integrated circuit device that converts analog signals such as varying levels of heat to cold, soft to hard, quiet to loud, dim to bright, increased to decreased flow, etc., to digital signals initiating them.

ADCCP - Advanced Data Communications Control Procedure. The USA Federal Standard communications protocol.

Address - The location of a terminal, a peripheral device, a node, or any other unit or component in a network.

Administrative Authority - An organization exercising jurisdiction over the National Electrical Safety Code.

Admittance - A measure of how easily alternating current flows in a circuit. Admittance is the reciprocal of impedance. Admittance (Y) can be expressed as a complex number, Y=G+jB. The first terms or real part is called conductance and is denoted as G. The second term or imaginary part is called susceptance and is denoted as B. It is expressed in mhos.

ADP - Automatic Data Processing.

ADPCM - Adaptive Differential Pulse Code Modulation. An encoding technique, standardized by the CCITT that allows an analog voice conversation to be carried within a 32k bps digital channel. Three or four bits are used to describe each sample, which represents the difference between two adjacent samples. Sampling is done 8,000 times per second.

ADU - Asynchronous Data Unit

ADVM - Adaptive (variable slope) Delta Modulation Voice Modem.

AEC - Atomic Energy Commission – Now defunct; see ERDA and NRC.

AEIC - Association of Edison Illuminating Companies.

AF - Audio Frequency.

AGC - Automatic Gain Control.

aging - The irreversible change of material properties after exposure to an environment for an interval of time.

AIA - Aluminum Interlocked Armor. A type of cable sheath.

AL - Aluminum

alloy - A substance having metallic properties and being composed of an elemental metal and one or more chemical elements.

alternating current - Electric current that periodically reverses direction. Alternating current is generally abbreviated ac.

AM - Amplitude modulation. A method of adding information to an electronic signal where the height (amplitude) of the wave is changed to convey the added information.

ambient - Conditions existing at a test operation location prior to energizing of equipment (example: ambient temperature.

ambient temperature - The temperature of a cable group when there is no load on any cable of the group or of the duct containing the group.

ampacity - The rms current which a device can carry within specified temperature limitations in a specified environment: dependent upon a) temperature rating, b) power loss or c) heat dissipation.

ampere - A standard unit of current. Designed as the amount of current that occurs when one volt of emf is applied across one ohm of resistance. An ampere of current is produced by one coulomb of charge passing a point in one second.

ampere-turn - The product of amperes times the number of turns in a coil.

amplifier - A device used to boost the strength of an electronic signal.

amplitude - The maximum value of a varying waveform.
analog - Not digital. A continuously varying waveform.

anneal - To soften and relieve strains in any solid material, such as metal or glass, by heating to just below its melting point and then slowly cooling it. This also generally lowers the tensile strength of the material while improving its flex life.

annealed wire - See soft wire.

annunciator wire - Usually single solid copper, sometimes twisted pair or triplexed for open wiring of bell circuits and other low voltage systems.

ANSI - American National Standards Institute. An organization that publishes nationally recognized standards.

antenna lead-in wire - (Not coaxial) Parallel twin lead construction, plastic jacketed with fixed 300 Ohm impedance for connecting remote antenna to receivers.

antenna rotor cable - Multi-conductor flat or round cable used to supply power to motorized antenna, and control wires for changing direction of rotation.

antioxidant - Retards or prevents degradation of materials exposed to oxygen (air) or peroxides.

approved - 1) Acceptable to the authority having legal enforcement: a product that has been tested to standards and found suitable for general application, subject to limitations outlined in the nationally recognized testing lab's listing.

ARC - Attached Resource Computer. The local networking products and philosophy developed by Datapoint Corporation.

armature - 1) Rotating machine: the member in which alternating voltage is generated, 2) electromagnetic: the member which is moved by magnetic force.

armor - Mechanical protector for cables; usually a helical winding of metal tape, formed so that each convolution locks mechanically upon the previous one (interlocked armor); may be a formed metal tube or a helical wrap of wires.

ARPA - Advanced Research Projects Agency – Agency that developed the first major packet-switched network, ARPANET.

ARQ - Automatic Request for Retransmission. An error control method in which the receiving device informs the transmitting device which transmission blocks were received successfully; the transmitting device retransmits any blocks not successfully received.

Arrhenius Plot - A statistical method used to predict time-to-failure, based on a device's performance at different temperatures. One method is given in IEEE Standard 101.

ASC - Automatic digital network Switching Center.

ASCII - American National Standard Code for Information Interchange. A seven bit plus parity code established by the American National Standards Institute to achieve compatibility among data services and consisting of 96 displayed upper and lower case characters and 32 non-displayed control codes.

Askarel - A synthetic insulating oil which is nonflammable but very toxic. It is being replaced by silicone oils.

ASTM - American Society for Testing and Materials – A group writing standards for testing materials, and specifications for materials.

ASYNC - Asynchronous.

asynchronous - Transmission in which each information character is individually synchronized, usually by means of start and stop elements. Also called start-stop transmission.

ATDM - Asynchronous Time-Division Multiplexing. A TDM that multiplexes asynchronous signals by over sampling; also infrequently used to mean concentrator.

ATE - Automatic Test Equipment.

AT&T - American Telephone and Telegraph. A major common carrier for long distance telephone lines.

attenuation - The decrease in magnitude of a wave as it travels through any transmitting medium, such as a cable or circuitry. Attenuation is measured as a ratio or

as the logarithm of a ratio (decibel).

attenuation constant - A rating for a cable or other transmitting medium, which is the relative rate of amplitude decrease of voltage or current in the direction of travel. It is measured in decibels per unit length of cable.

audio - A term used to describe sounds within the range of human hearing. Also used to describe devices which are designed to operate within this range.

audio frequency - That range of frequencies lying within the range of human hearing; approximately 20 to 20,000 Hz.

AUI - Attachment Unit Interface. The interface between the Ethernet/IEEE 802.3 controller and the baseband transceiver or broadband modem.

AUTODIN - Automatic Digital Network. The worldwide data communications network of the U.S. Department of Defense.

AVD - Alternate Voice Data. Telephone lines which have been electronically treated to handle both voice and data signals. Typically used on leased overseas circuits to save money.

AWG - American Wire Gauge. A wire diameter specification. The lower the AWG number the larger the wire diameter.

AWM - Appliance Wiring Material.

B

backfill – The materials placed to fill an excavation, such as sand in a trench.

balanced line – A cable having two identical conductors with the same electromagnetic characteristics in relation to other conductors and to ground.

ballast – A device designed to stabilize current flow.

bandwidth – The width of a communication channel, measured as frequency (in cycles per second or hertz). A channel's bandwidth is a major factor in determining how much information it can carry.

bare conductor – A conductor having no insulation or jacket.

Baseband – A signaling technique in which the signal is transmitted in its original form and not changed by modulation.

Baseband LAN – A local area network employing baseband signaling.

Baud – The number of signal (or state) changed in a carrier per second. Also referred to as baud rate. The maximum baud rate of a modem is limited by the bandwidth of the phone line. Named in honor of J.M.E. Baudot, a 19th century French telegraph engineer.

BCD – Binary Coded Decimal. Group of binary digits represented in decimal numbers with each number allocated four binary digits. This system is widely used in telecommunications computer projects.

Bel – A unit that represents the logarithm of the ratio of two levels. The number of bels is equal to the logarithm10 of (P1/P2). See db.

Belfoil R – Belden trademark for highly effective electrostatic shield using reinforced metallic foil.

Bell 103 – The North American standard for 300-bps modems, implemented by Bell Labs (now a division of AT&T) in 1963.

Bell 212A – The North American standard for 1,200-bps modems, implemented in 1976.

BER – Bit Error Rate. The ratio of received bits that are in error, relative to a specific amount of bits received, usually expressed as a number referenced to a power of 10.

BIL – Basic Impulse Level. A reference impulse insulation strength. The crest value of a lighting impulse voltage of a specified wave shape which a high-voltage cable or termination is required to withstand under specified conditions.

binary – A half-duplex, character-oriented synchronous data communications protocol originated by IBM in 1964.

binder – A tape or thread used for holding assembled cable components in place.

birdcage – The undesired unwinding of a stranded cable.

Bits Per Second (bps) – The number of bits of data transmitted by a modem through a phone line in one second. To get the bps rate of a modem, multiply the number of signal changes per second (baud rate) by the number of bits of information carried by each change.

BNC – Common connector for coax. BNC is said to be short for bayonet-niell-concelman.

bonding – The method used to produce good electrical contact between metallic parts of any device. Used extensively in automobiles and aircraft to prevent static buildup. Also refers to the connectors and straps used to ground equipment.

booster – A device inserted into a line, or cable, to increase the voltage. Boosting generators are also used to raise the level of a dc line. Transformers are usually employed to boost ac voltages. The term booster is also applied to antenna preamplifiers.

border light cable – Same as stage cable but more that two conductors. Type SO cable is often used.

bore hole cable – Power and/or communication cable suspended down a vertically drilled hole to equipment underground.

BPS or B/S – Bits Per Second. The number of bits passing a point per SECOND. A measure of the speed of transmission of digital information; used to describe the information transfer rate on a circuit.

BPSK – Binary Phase Shift Keying. A modulation method in which binary data is encoded as a 0 or 180 degree shift in the carrier phase.

BPSS – Basic Packet Switched System.

BRH-50 – Single conductor, Hypalon heat resisting insulation, voltage limit 5000 – maximum operating temperature 105C.

BRS-CJ - Multi-conductor control cable, silicone rubber insulation, silicone rubber jacket overall, voltage limit 600 – maximum operating temperature 200C.

BRS-M – Single flexible conductor lead wire, silicone rubber insulation, fiberglass braid overall, voltage limit 600 – maximum operating temperature 200C.

braid – Textile or metallic filaments interwoven to form a tubular structure which may be applied over one or more wires or flattened to form a strap.

branch joint – A cable joint used for connecting one or more cables to a main cable.

brazing – The joining of ends of two wires, rods or groups of wires with nonferrous filler metal at temperatures above 800F (427C).

breaking strength – The maximum load that a conductor attains when tested in tension to rupture.

bridge – A circuit which measures by balancing four impedances through which the same current flows:

Wheatstone – resistance
Kelvin – low resistance
Schering – capacitance, dissipation factor, dielectric constant
Wien – capacitance, dissipation factor

bridge – Equipment that allows the interconnection of LANs, allowing communication between devices on separate networks using similar protocols.

Broadban LAN – LAN which used FDM (frequency division multiplexing) to divide a single physical channel into a number of smaller independent frequency channels. The different channels created by FDM can be used to transfer different forms of information – voice, data and video.

broadcast – The act of sending a signal from none station on a LAN to all other stations, all of which are capable of receiving that signal.

B&S – Brown and Sharpe wire gauge – same as AWG.

BSC – Binary Synchronous Communications. A byte or character-oriented IBM communications protocol which has become an industry standard. It uses a defined set of control characters and sequences for synchronized transmission of binary-coded data between stations in a data communications system.

BSL – Basic Switching Impulse Insulation Level. The crest value of a switching impulse voltage of a specified wave shape which a high-voltage cable termination is required to withstand under specified conditions.

BTT – A plastic insulated thermostat cable with two or more conductors with a treated cotton braid overall.

buffer – A protective coating in intimate contact with an optical fiber.

Buna – A synthetic rubber insulation of styrene butadiene. Was known as GR-S, now as SBR.

bunch strand – Conductors twisted together with the same lay and direction without regard to geometric pattern.

bunch-stranded conductor – A conductor composed of wires twisted together with a given length and direction of lay in such manner that the respective wires at successive cross sections along the length of the conductor do not necessarily form a symmetrical geometric pattern, not necessarily occupy the same positions relative to each other.

buoyant cable – Originally military type Mil-C-2401 with built-in flotation ability. Many applications have been developed using buoyancy to advantage – numerous types and sizes for power, communications, and telecommunications have resulted.

bus – A network topology which functions like a signal line which is shared by a number of nodes.

bus-bar wire – Uninsulated tinned copper wire used as a common lead.

Butyl Rubber – A synthetic rubber used for electrical insulating purposes.

BW – denotes a braided wire armor, outer covering. Basket weave.

BWG – Birmingham wire gauge.

BX – Building wire with flexible interlocked steel armor.

C

C – Symbol designation for: capacitance, bias supply and centigrade.

cable, belted – A multi-conductor cable having a layer of insulation over the assembled insulated conductors.

cable, bore-hole – The term given vertical riser cables in mines.

cable joint – A complete insulated splice, or group of insulated splices, contained within a single productive covering or housing. In some designs, the insulating

material may also serve as the protective covering. Insulated end caps are considered joints in this context.

cable loss – The amount of RF (radio frequency) signal attenuated by coaxial cable transmission. The cable attenuation is a function of frequency, media type, and cable distance. For coaxial cable, higher frequencies have greater loss than lower frequencies and follow a logarithmic function. Cable losses are usually calculated for the highest frequency carried on the cable.

cable, pressurized – A cable having a pressurized fluid (gas or oil) as part of the insulation; nitrogen and oil are the most common fluid.

cable, spacer – An aerial distribution cable made of covered conductors held in place by insulated spacers; designed for wooded areas.

cable, tray – A multi-conductor cable having a non-metallic jacket, designed for use in cable trays per the National Electrical Code.

cabling – The method by which a group of insulated conductors is mechanically assembled (or twisted together)

CAC – Flexible conductor, insulation, dielectric tape insert, felted asbestos, lacquered, braid overall. 1000V, 125C.

CAD – Computer-Aided Design

CALC – Customer Access Line Charges. Basic rates paid for lines from customer premises to the central office.

CAM – Computer-Aided Manufacture

candela (cd) – The basic SI unit for luminous intensity: the candela is defined as the luminous intensity of 1/600,000 of a square meter of a blackbody at the temperature of freezing platinum (2045*K) at 101 325 Pascal.

Canvasite Cord – 2 conductors, stranded copper rubber insulation and braid twisted together and finished with weather proof braid.

capacitance – The ability of a dielectric material between conductors to store electricity when a difference of potential exists between the conductors. The unit of measurement is the farad, which is the capacitance value which will store a charge of one coulomb when a one-volt potential difference exists between the conductors. In as, one farad is the capacitance value which will permit one ampere of current, when the voltage across the capacitor changes at the rate of one volt per second.

capacitive reactance – The opposition to alternating current due to the capacitance of a capacitor, cable or circuit. It is measured in ohms and is equal to 1/6.28fC where f is the frequency in Hz and C is the capacitance in farads.

capacitor - Two conducting surfaces separated by a dielectric material. The capacitance is determined by the area of the surface, types of dielectric, and spacing between the conducting surfaces.

capillary action – The traveling of liquid along a small interstice due to surface tension.

carrier - An ac electrical signal that is used to carry information.

cathode – 1)The negative electrode through which current leaves a nonmetallic conductor, such as an electrolytic cell, 2)the positive pole of a storage battery, 3)vacuum tube – the electrode that emits electrons.

cathode-ray tube – The electronic tube which has a screen upon which a beam of electrons from the cathode can be made to create images; for example: the television picture tube.

cathodic protection – Reduction or prevention of corrosion by making the metal to be protected the cathode in a direct current circuit.

CATV – Community antenna television. Refers to the use of a coaxial cable to transmit television or other signals to subscribers from a single head end location.

CATV Cable – General term for all cables used for community Antenna TV service and feeders, distribution and house drops.

CB – Citizens band. One type of two-way radio communication.

CB – Brewery cord, rubber insulation, cotton braid treated with a weather proof compound, conductors twisted together, no outer covering. Voltage limit 300.

CBO – Portable cord known as brewery cord, neoprene insulation, conductors twisted together, no outer covering. 300V.

CCIS – Common Channel Interface Signaling. An electronic means of signaling between any two switching systems independent of the voice path. The use of CCIS makes possible new customer services, versatile net-work features, more flexible call routing, and faster call connections.

CCITT – A United Nations-sponsored organization, in Geneva, Switzerland, devoted to establishing worldwide communications standards. In English, it is known as the International Consultative Committee for Telephone and Telegraph.

C Conditioning – A type of line conditioning that controls attenuation, distortion, and delay distortion so they lie within specific limits.

C Connector – A bayonet-locking connector for coax; C is named after Carl Concelman.

CCTV – Closed-circuit television. One of the many services often found on broadband networks.

CCW – Continuously corrugated and welded. A type of Cable sheath.

CD – Collision Detect. The ability of a transmitting node to detect simultaneous transmission attempts on a shared medium.

CD – Carrier Detect. An RS-232 control signal (on pin 8) which indicates that the local modem is receiving a signal from the remote modem. Also called Received Line Signal Detector (RSLD) and Date Carrier Detect (DCD).

cellular polyethylene - Expanded or "foam" polyethylene, consisting of individual closed cells of inert gas suspended in a polyethylene medium, resulting in a desirable reduction of dielectric constant.

CFC – Two or three types of fixture wires twisted together, no outer covering. 300V, 90C.

CFR – (Code of Federal Regulations) The general and Permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government.

CFPD – Two or Three type of fixture wires cabled together with a cotton or rayon braid overall. 300V, 90C.

CFPO – Two type of fixture wires laid parallel with a cotton or rayon braid overall. 300V, 90C.

channel - 1) A path for electrical transmission. Also called a circuit facility, line, link or path. 2) A specific and discrete bandwidth allocation in the radio frequency spectrum (for example, in a broadband LAN) utilized to transmit one information signal at a time.

channel translator – Device used in broadband LANs to increase carrier frequency, converting upstream (toward the head-end) signals into downstream signals (away from the head-end).

charge – The cause of material bodies exerting forces on each other of repulsion or attraction. The unit of measure is the coulomb, which corresponds to a charge of 6.24x10 electrons.

charging current – See current, charging.

chlorosulfonated polyethylene (CSPE) – better known as Hypalon (a DuPont trademark). Used as a 105C rated motor lead wire insulation, but is primarily a jacketing compound. The material has low moisture absorbtion, excellent resistance to flame and heat, and good dielectric properties.

CIM – Computer Integrated Manufacturing. The automation architecture requiring open communication between intelligent factory devices and the controlling computer systems.

circuit – A system of conducting mediums designed to pass an electric current.

circuit switching – A switching technique in which an information path (i.e., circuit) between calling and called stations is established on demand for exclusive use by the connected parties until the connection is released.

circular mil – A term used to define cross sectional areas using an arithmetic short-cut in which the area of a round wire is taken as "diameter in mils (.001") squared. The cross-sectional area in circular mills is equal to the square of the diameter in mils.

Clad Wire – Different from coated wire, is any metal covered with a relatively heavy coating of different metal, such as copperweld (copper over steel) or alum-o-weld (aluminum over steel). See coated wire.

CLC – IBM's acronym for cluster controller. The central node in a star-shaped cluster network, which governs all messages traffic to and from the other nodes.

CM – Circular Mils.

CMIP – Common Management Information Protocol. The network management standard by OSI.

CMX – A thermocouple wire.

CMX Series – Ungermann-Bass' 3270 multi-plexer Product line.

C/N – Carrier-to-Noise ratio.

Coated Wire – Any metal covered by a relatively thin coating of a different metal such as tin, zinc or other alloy by a dip bath and wipe process, often at high speeds in line with insulating equipment.

coaxial cable – A cylindrical transmission line comprised of a conductor centered inside a metallic tube or shield, separated by a dielectric material, and usually covered by an insulating jacket.

codec – An assembly comprising an encoder and a decoder in the same equipment.

coil effect – The inductive effect exhibited by a spiral wrapped shield, especially above audio frequencies.

cold-drawing – reducing the cross section by pulling through a die or dies, at a temperature lower than the recrystallization temperature.

collision detection (CD) – The ability of a transmitting node to detect simultaneous transmission attempts on a shared medium.

combination stranded conductor – a conventional concentric conductor in which the wires in the outer layer are larger in diameter than the wires in the inner layer or layers and the diameters of all wires are within plus and minus 5 percent of the nominal wire diameter

for the same size non-combination stranded conductor.

compact stranded conductor - a unidirectional or conventional concentric conductor manufactured to a specified diameter, approximately 8 to 10% below the nominal diameter of a non-compact conductor of the same cross-sectional area.

composite conductor – a conductor consisting if two or more types of wire, each type of wire being plain, clad, or coated stranded together to operate mechanically and electrically as a single conductor.

compound filled splice – Joints in which the joint housing is filled with an insulating compound that is non-fluid at normal operating temperatures.

compressed stranded conductor – a conventional concentric conductor manufactured to a diameter not more than 3% below the nominal diameter of a non-compressed conductor of the same cross-sectional area.

compression lug or splice – installed by compressing the connector onto the strand, hopefully into a cold weld.

concentric stranding – A group of uninsulated wires twisted together and containing a center core with subsequent layers spirally wrapped around the core to form a single conductor.

Conductance – The real part of admittances. It is the reciprocal of resistance and is measured in ohms.

conductivity – The ability of a material to allow electrons to flow, measured by the current per unit of voltage applied. Also, it is the reciprocal of resistivity. It has units of mhos/meter.

conductor – A material suitable for carrying an electric current. Several types are as follows:

concentric-lay conductor – conductor constructed with a central core surrounded by one or more layers of helically laid wires.

compact round conductor – a conductor constructed with a central core surrounded by one or more layers of helically laid wires and formed into final shape by rolling, drawing or other means.

conventional concentric conductor -conductor constructed with a central core surrounded by one or more layers of helically laid wires. The direction of lay is reversed in successive layers and generally with an increase in length of lay for successive layers.

equilay conductor – conductor constructed with a central core surrounded by more than one layer of helically laid wires, all layers having a common length of lay, direction of lay being reversed in successive layers.

parallel conductor – conductor constructed with a central core of parallel-laid wires surrounded by one layer of helically laid wires.

rope-lay conductor – conductor constructed of a bunch-stranded or a concentric-stranded member or members, as a central core, around which are laid one or more helical layers of such members.

unidirectional conductor - conductor constructed with a central core surrounded by more than one layer of helically laid wires, all layers having a common direction of lay, with increase in length of lay for each successive layer.

unilay conductor – conductor constructed with a central core surrounded by more than one layer of helically laid wires, all layers having a common length and direction of lay.

conductor core - the center strand or member about which one or more layers of wires or members are laid helically to form a concentric-lay or rope-lay conductor.

conductor shield – The conducting layer applied to make the conductor a smooth surface in intimate contact with the insulation; formerly called extruded strand shield (ESS).

connection, delta - Interconnection of 3 electrical equipment windings in a delta (triangular) configuration.

connection, star – Interconnection of 3 electrical equipment windings in star (wye) configuration.

connector - A metallic device of suitable electric conductance and mechanical strength, used to splice the ends of two or more cable conductors, or as a terminal connector on a single conductor.
Connectors usually fall into one of the following types:
-solder
-welded
-mechanical
-compression or indent
Conductors are sometimes spliced without connectors, by soldering, brazing or welding.

contention – A “dispute” between two or more devices over the use of a common channel at the same time.

copolymer – A polymer consisting of a “mixture” of two or more polymers.

Copperweld - Trademark of Copperweld Steel Co. for copper clad steel conductor.

cord – A very flexible insulated cable.

core – The light transmitting portion of an optical fiber which has a higher index of refraction than the cladding. The core is typically 50 or 62.5 microns in diameter for multi-mode and 8-9 microns for single-mode.

core, annular, conductor – a conductor in which one or more layers of wires are laid helically around a central core of metallic or non-metallic material. The core is used as a mandrel for the application of subsequent layers of wire to maintain consistent spacing of these members around the conductor axis.

corona – The ionization of gasses about a conductor which results when the potential gradient reaches a certain value.

coulomb – The derived SI unit for quantity of electricityor electrical charge: One coulomb equals one ampere-second.

counter emf – The voltage opposing the applied voltage and the current in a coil; caused by a flow of current in the coil; also know as back emf.

Counter-poise Wire - Bare copper wire used to offset the impact of lightning surges along high voltageoverhead lines and around base towers. Buried counter-poise wire is connected to overhead ground wires and towers. Numerous methods of application are used dependent upon resistance of soil at the tower base.

coupling – The transfer of energy between two or more cables or components of a circuit.

CPE – Dow chemical trademark for chlorinated polyethylene. A jacketing compound.

CPE – Customer Premises Equipment. A telecommunications term for voice or data equipment that resides at their customer’s premises.

CPI – Computer-to-PBX interface. A voice/data standard (supported by DEC) for using T1 transmission that involves 56 kbps channels, representing a move toward an open architecture. Compare with DMI.

CPP – Cable Patch Panel. A panel, half of which is used to terminate cables coming from faceplates, and half of which is used to terminate cables coming from network or host connection. The connections are joined using patch cables.

CPS – Cycles per second. This is an obsolete designation and is now called Hertz (Hz). The SI unit is the Hertz, one cycle per second.

CPU - Central Processing Unit. Actually the heart of a computer, but often used as a synonym for computer.

CR – Carriage Return. An ASCIL or ADCDIC control character used to position the print mechanism at the left margin on a printer – or the cursor at the left margin on a display terminal.

CRC - (Cyclical Redundancy Check) An error-checking Algorithm which is included in a packet before transmission. The receiver checks the CRC on each packet it receives and strips it off before giving the packet to the station. If the CRC is incorrect, there are two options: either discard the packet, or deliver the damaged packet with an appropriate status indicating a CRC error.

creepage surface – The insulating surface between a conductor and ground in cable insulators, splices and terminations.

crosstalk – A type of interference caused by audio frequencies from one line being coupled into adjacent lines. The term is loosely used also to include coupling at higher frequencies.

CRS – Configuration Report Server. Part of the IBM LAN manager that runs as a Netview/PC application. Forwards LAN configuration exchange notification to IBM LAN Manager.

CRT - Cathode-Ray Tube. A television-like picture tube. Used in terminal; CRT is commonly used as a synonym for the CRT terminal.

CRT Wire – High voltage lead wire for energizing Cathode ray tubes.

CSA (Canadian Standards Association) – Similar to UL in the United States.

CSMA – (Carrier Sense Multiple Access) A contention technique which allows multiple stations to gain access to a single channel.
A contended access method in which stations listen before transmission, send a packet and then free the line for other stations. With CSMA, although stations do not transmit until the medium is clear, collisions still occur; two alternative versions (CSMA/CA and CSMA/CD) attempt to reduce both the number of collisions and the severity of their impact.

CSMA/CD/CA – (Carrier Sense Multiple Access with Collision Detection) A contention technique which allows multiple stations to successfully share a broadcast channel by avoiding contention via carrier sense and deference, and managing collisions via collision detection and packet retransmission. See CSMA and collision detection (CD).

CSPE – A Dupont jacketing compound based on chlorosulfon-ated polyethylene (Hypalon). Sometimes abbreviated CSP.

CT – Cable Tray, NEC Art. 318. A cable marking indicating a single conductor cable suitable for use in a cable tray.

CTS – Clear-To-Send. An RS-232 modem interface control signal (sent from the modem to the DTE on pin 5) which indicates that the attached DTE may begin transmitting issued in response to the DTE’s RTS. Called Ready-For Sending in CCITT V.24.
cure – To change the properties of a polymeric system into a more stable, usable condition by the use of heat, radiation, or reaction with chemical additives.

Current – The rate of transfer of electricity. The unit of current is the ampere, a rate of one coulomb/second.

current/charging – The current needed to bring the cable up to voltage; determined by the capacitance

of the cable. The charging current will be 90* out of phase with the voltage.

current density – The current per cross sectional area in units of amperes/meters to the second power.

current, direct (dc) – Electrical current whose electrons flow in one direction only. It may be constant or pulsating as long as their movement is in the same direction.

cut-through resistance – The ability of a material to withstand mechanical pressure without damage.

CV – Continuous Vulcanization. An insulation and jacketing curing process.

CX – A two conductor twisted pair cord, plastic insulation, size 18 AWG only, for Christmas tree lighting. 300V.

CXR –Carrier. A continuous light wave or radio frequency that is transmitted over a cable and is modulated with a signal. The receiving terminal interprets any change in signal as information. Changes to the signal made by outside influences (noise) can cause the receiving terminal to misinterpret the information transmitted.

CXT – A two conductor twisted pair cord, plastic insulation, size 18 AWG only, for Christmas tree lighting. 300V.

D – Denotes a type of steel armor consisting of a "D" shaped steel strip wound around the outer surface of a cable or cable assembly with two or more conductors.

D/A – Digital to Analog

DAA – Data Access Arrangement. DCE furnished or approved by common carrier that permits privately owned DCE or DTE to be attached to the common carrier's network; all modems not built for the public telephone network have integral DAAs.

DAC – Digital to Analog Converter. A device that converts a digital input signal to an analog output signal carrying equivalent information.

data compression – Packing data into a reduced format. Compressed data is in "shorthand" form and must be decompressed before it can be used by the receiving computer.

datagram – A packet that includes a complete destination address specification (provided by the user, not the network) along with whatever data it carries.

data link service – A service which guarantees transmission between two stations sharing the same physical medium.

data rate – A measure of the signaling rate of a data link.

DAV – Data Above Voice.

db – Decibel. The standard unit used to express the relative strength of two signals. When referring to a single signal measured at two places in a transmission system, it expresses either a gain or loss in power between the input and output devices. The reference level must always be indicated, such as 1 milli-watt for power ratio.

DB – Denotes direct burial or double braid.

dBmV – (decibel milli-volt) The level at any point in a system expressed in dBs above or below a 1 millivolt/75 ohm standard is said to be the level in decibel-milli-volts or dBmV. Zero is equal to 1 milli-volt across 75 ohms.

DBPSK – Differential Binary Phase Shift Keying. Similar to BPSK except that the phase shifts are relative to the previous phase of the carrier.

DC – Direct current. (see current, direct.)

DCE – Data Communications Equipment. In common usage, synonymous with modem; the equipment that provides the functions required to establish, maintain, and terminate a connection as well as the signal conversion required for communications between the DTE and the telephone line or data circuit.

DCL - Data Carrier Level

Dc resistance – see resistance

DDCMP – (Digital Data Communications Message Protocol) A byte-oriented synchronous protocol developed by Digital Equipment Corporation that supports half- or full-duplex modes, and either point-to-point or multi-point lines in a DNA (Digital Network Architecture) network.

DDD – Direct Distance Dialing. A telephone service in North America which enables users to call their subscribers outside their local area without operator assistance. In the United Kingdom and some other countries, this service is known as STD, subscriber trunk dialing.

DDP – Distributed Data Processing. An organization of data processing.

DDS – Dataphone Digital Service. A communications service offered in the form of leased lines by AT & T that transmits data in digital rather than analog form, eliminating the need for modems.

DEBET – An active network device that is used to join two Ethernet LANs to create an extended LAN. The bridge is a specialized store-and-forward and packet filtering system that synchronizes traffic between LANs and isolates local traffic.

DEC (Digital Equipment Corporation) – A leading manufacturer of minicomputers. The Unix operating system developed at Bell Labs, runs on DEC computers.

decibel (db) – One-tenth of a bal. It is equal to 10 times the logarithm of the power ratio, 20 times the log of the voltage ratio, or 20 times the log of the current ratio. One decibel is the amount by which the pressure of a pure sine wave of sound must be varied in order for the change to be detected by the average human ear. The decibel can express an actual level only when comparing with some definite reference level that is assumed to be zero db.

DECNET - Digital Equipment Corporation Network. trademark for DEC's communications architecture that permits interconnection of DEC computers using DDCMP.

DECOM – A transceiver used with broadband Ethernet.

DEFTR – A frequency translator used with broadband Ethernet.

DELNI – A local network interconnect product that provides eight separate network interfaces from a single transceiver tap.

demand - 1)the measure of the maximum load of a utility's customer over a short period of time. 2) the load integrated over a specified time interval.

DEMPR – A multi-port repeater that provides eight Thinwire Ethernet drops from a single standard Ethernet connection.

DEMUX – Demultiplexer.

DEQNA – An Ethernet communications controller for computers based on the Q-bus hardware.

derating factor – A factor used to reduce ampacity when the cable is used in environments other than the standard.

DEREP - A device used to extend the length, topology, or interconnectivity of the physical network medium beyond the limits imposed by a single segment. Repeaters perform the basic actions of restoring signal amplitude, waveform, and timing applied to normal data and collision signals.

DESTA – A station adapter that acts as a Thinwire Ethernet transceiver.

destination - Receiver of data; data sink.

DEUNA – An Ethernet communications controller for computers based on the UNIBUS hardware.

dew point – The temperature at which vapor starts to condense (liquefy) from a gas-vapor mixture at constant pressure.

DEXJB – A junction box used with different types of fiber optic cable.

DEXJK - An Etherkjack.

dial-up line – Your average everyday home or business phone line. (See also leased line.)

dielectric – An insulating (nonconducting) medium.

dielectric absorption – The storage of charges within an insulation; evidenced by the decrease of current flow after the application of dc voltage.

dielectric breakdown – Any change in the properties of a dielectric that causes it to become conductive. Normally the failure of an insulation because of excessive voltage.

Dielectric Constant – the property of an insulation which determines the electrostatic energy stored per unit volume for unit potential gradient. It is expressed as a ratio. "K" for air is 1.0, while that for polyethylene is 2.2. Therefore, the capacitance of polyethylene is 2.2 times that of air. It is also referred to as Specific Inductive Capacity or Permitivity.

dielectric dispersion - The change in relative capacitance due to change in frequency.

dielectric heating – The heating of an insulating material when placed in a radio-frequency field, caused by internal losses during the rapid polarization reversal of molecules in the material.

dielectric loss – The power dissipated in a dielectric as the result of the friction produced by molecular motion when an alternating electric field is applied.

dielectric strength – The maximum voltage which an insulation can withstand without breaking down; usually expressed as a gradient in vpm (volts per mil.) Polyethylene for example has a dielectric strength of about 800 vpm.

Dielectric strength testing - A common safety test for electrical product safety called hio-pot testing. Voltages many times higher than normal operating voltages are applied across the insulation. This test not only proves the integrity of the insulation system but increases product reliability by detecting faulty workmanship.

DIN - Deutsches Institut fur Normung(DIN). The German Standard for many products.

directional coupler – A passive device used in a cable system to divide or combine uni-directional RF power sources.

direction of lay – the lateral direction, designated as left-hand or right-hand, in which the wires of a member or units of a conductor run over the top of the member as they recede from an observer looking along the axis of the member or conductor.

dissipation factor - Energy lost when voltage is applied across an insulation. The cotangent of the phase angle between voltage and current in a reactive component. Dissipation factor is quite sensitive to contamination

and deterioration of insulation. Also known as power factor (of dielectrics).

distortion factor – An undesired change in waveform as the signal passes through a device.

distribution cable - In a CATV system, the transmission cable from the distribution amplifier to the drop cable. In an electric power system, provides low voltage service to the customer.

distribution, statistical analysis – A statistical method used to analyze data by correlating data to a theoretical curve to : 1) test validity of data and 2) predict performance at conditions different from those used to produce the data. The normal distribution curve is the most common.

DIW – D-Inside Wire. Also called unshielded twisted pair (UTP). The standard wire originally designated for voice communications. Typically, DIW consists of four pairs of copper wire in the same sheath. Each pair is twisted around on another.

DLC – Data Link Control. A communications protocol that sets up, controls, checks and terminates information transfer between two stations on a data link.

DMI - Digital Multiplexed Interface. A voice/data PABX standard for using T1 transmission that involves 64 kbps channel, representing a move toward an open architecture via ISDN. Compare with CPI.

DNA - (Digital Network Architecture) Digital Equipment Corporation's overall specification for networking with DEC computers.

DOD – Department of Defense. Part of the U.S. government executive branch that handles military matters, including data communications; responsible for some LAN associated protocols and standards such as TCP/IP.

DOS – Disc Operating System. As in MS-DOS, which stands for (MicrosSoftDOS) or PC-DOS (IBM Personal Computer DOS). The operating system of the computer that organizes how it reads, writes and reacts with its disks – floppy or hard – and talks to its various input/output devices including keyboards, screens, serial and parallel ports, driving printers, modems, etc.

download – The process of loading software into the nodes of a network from one node or device over the network media.

DPSK – Differential phase Shift Keying. The modulation technique used in Bell 201 modems.

drain wire - An uninsulated wire in contact with a shield throughout its length, used for terminating the shield.

drawing, wiring diagram – Shows how the devices are interconnected.

drop cable - In a CATV system, the transmission cable from the distribution cable to a dwelling.

DSR – Data Set Ready. One of the control signals on a standard RS-232-C connector. It indicates whether the data communications equipment is connected and ready to start handshaking control signals so that transmission can start.

DSU – Data Service Unit. Device designed to transmit digital data on transmission facilities. Typically a device that interfaces DTE(Data Terminal Equipment) to a line connecting a dataport channel to allow digital communications without a modem. It is used with a CSU when the DTE lacks complete digital line interface capability or alone (i.e. without a CSU) when the DTE includes digital line interface capability.

DTE – (Data Terminal Equipment) – User equipment. The end user machine (terminal, computer, controller, etc.)which plugs into a unit which is the termination point of the communications circuit (DCE).

DTMF – Dual-Tone Multiple-Frequency. Term used to describe the audio signaling frequencies on Touch-Tone, push button telephones.

DTR – Data Terminal Ready. An RS-232 modem interface control signal (sent from the DTE to the modem on pin 20) which indicates that the DTE is ready for data transmission and which requests that the modem be connected to the telephone circuit.

dual cable – A two-cable system in broadband LANs in which the coaxial cable provides two physical paths for transmission, one for transmit and one for receive, instead of dividing the capacity of a single cable.

Duofoil – Belden trademark for a shield in which metallic foil is applied to both sides of a supporting plastic film.

DX – Duplex Signaling. Signaling system that occupies that same cable pair as the voice path, yet does not require filters.

E – Voltage (electromotive force)

E – A UL cable type elevator lighting and control cable. Rubber insulation on conductors, color coded braid over conductor – with closely woven cotton braid outer covering treated for moisture and flame resistance. Voltage limit 300.

earth – British terminology for zero-reference ground.

EBCDIC - Extended Binary Coded Decimal Interexchange code. It is the way IBM codes characters, letters and numbers into a digital binary stream for use in its larger computers. EBCDIC codes characters into eight bits. This gives it 256 possible characters, or twice as many as the rival ASCII coding, which is a seven bit scheme. This is mainly used in IBM mainframes and minicomputers, while ASCII is used in IBM and non-IBM desk top microcomputers.

echo – 1) A faint return of the transmitted signal to the originating modem when a signal is related by a communications satellite. 2) The interference caused when a modem receives its own signal, experienced when two 9,600-bps modems communicate, each using most of the available bandwidth.

ECMA – (European Computer Manufactures Association) Standard organization dedicated to the development of data processing standards; not a trade organization. ECMA was the first group to define the OSI Transport Layer Protocol.

ECTFE - (Halar) An Ausimont Co. trademark for ethylene chlorotrifluoro ethylene. Used as an insulation or jacketing material.

ED – Ending Delimiter. In the FDDI frame-and Token-format blocks, this contains non-data symbols to indicate the end of the frame. The delimiter is eight bits long for a token (two consecutive T symbols) and four bits long (a single T symbol) for all other frames.

EDC - Error Detecting Code.

Eddy current – An electric current induced in a conductor by a varying magnetic field.

EFS – End of Frame Sequence. In the FDDI frame-and token format blocks, this consists of ED (encoding delimiter) and FS (frame status) fields, which ensure a clear function occurs close to each frame.

EIA - Electronic Industries Association (Formerly RMA or RETMA). The U.S. national organization of electronic manufacturers. It is responsible for the development and maintenance of industry standards for the interface between data processing machines and data communications equipment.

elastomer - Any material that will return to its original dimensions after being stretched or distorted.

Electric Blanket Wire – PVC plastic insulated and jacketed. Resistance wire for stringing through electric blankets and heating pads, mats, gloves boots, etc.

electromagnet - A device consisting of a ferromagnetic core and a coil that produces appreciable magnetic effects only when an electric current exists in the coil.

electromagnetic – Referring to the combined electric and magnetic fields caused by electron motion through conductors.

electromagnetic coupling – The transfer of energy by means of a varying magnetic field. Inductive coupling.

Electro-Mechanical Cables – Dual purpose composite cables made up of support strands capable of supporting predetermined loads together with communication, coaxial, or power as integral members of a finished cable.

electron – An elementary particle containing the smallest negative electric charge.

electron volt - A measure of the energy gained by an electron passing through an electric field produced by one volt.

electro-osmosis – The movement of fluids through dielectrics because of electric current.
electrostatic coupling - The transfer of energy by means of a varying electrostatic field.

Electrostatic discharge – (ESD) An instantaneous flow of an electrical charge on a nonconductor through a conductor to ground.

Elexar – (TPE) Shell trademark for thermoplastic elastomer.

EMA – (Electrical Moisture Absorption) A water tank test during which the sample cables are subjected to voltage while the water is maintained at rated temperature; the immersion time is long, with the object being to accelerate failure due to moisture in the insulation; simulates buried cable.

EMF – Electromotive force. See voltage.

EMI – Electromagnetic Interference. External signals that disrupt the data being transmitted on the local area network or electronic device being operated. Typically, these external signals emanate from universal motors with brushes, florescent lights, personal computers, printers or other devices including copy machines, etc. The Federal Communications Commission (FCC) regulates this emission area.

endosmosis – The penetration of water into a cable by osmosis; aggravated and accelerated by dc voltage on the cable.

environment – 1) the universe within which a system must operate 2) all the elements over which the designer has no control and that affect a system or its inputs and outputs.

EO – A UL cable type. Elevator lighting and control cable with thermoset insulation.

EOT – End of Transmission Character. A transmission control character used to indicate the end of transmission, which may include one or more texts and any associated message headings.

EP, EPR, EPM, EPDM – Designations for synthetic rubber based upon ethylene-propylene hydrocarbon.

EPA – (Environmental Protection Agency) The federal regulatory agency responsible for keeping and improving the quality of our living environment – mainly air and water.

EPDM – Ethylene Propylene Diene Monomer.

EPRDM – Erasable Programmable Read Only Memory.

EPR – Ethylene propylene rubber.

equilay conductor – see concentric-lay conductor.

error reduction - A hardware protocol that enables the receiving modem to examine incoming data for errors and to correct most of those it finds without requiring data to be re-sent. (See also trellis-code modulation.)

ET – A UL cable type. Elevator lighting and control cable with thermoplastic insulation, three braids, flame-retardant and moisture-retardant finish. May have steel supporting strand in center, 300V.

ETFE – (Tefzel) Dupont trademark for ethylene tetrafluoro ethylene.

Ethernet – A baseband local area network specification developed jointly by Xerox Corporation, Intel Corporation, and Digital Equipment Corporation to interconnect computer equipment using coaxial cable and "Transceivers".

ETL – Electrical Testing Laboratory.

ETX - End of Text. A control character used to indicate the conclusion of a message; it immediately precedes the lock check character (BCC) in transmission blocks.

excitation losses – Losses in a transformer or electrical device because of voltage.
facsimile - The remote reproduction of graphic material: an exact copy.

F

Farad – A unit of capacitance when a difference of potential of 1 volt produces a displacement of one coulomb in a capacitor. The farad is a very large unit and a much smaller unit, the microfarad is more commonly used.

fault, ground – A fault to ground.

FCC – Federal Communications Commission. Has the authority to regulate all interstate communications originating in the United States. It is run by seven board members appointed by the President. It sets prices for interstate phone, data and video service, determines who can or cannot get into the business of providing telecommunications service or equipment in the U.S. and determines the electrical and physical standards for telecommunications equipment.

FDDI (Fiber Distributed Interface) – An ANSI defined token-passing ring using fiber optic media to attain a 100mbps transmission rate.

FDM - (Frequency Division Multiplexing) Method by which the available transmission frequency range is divided into narrower bands, each used for a separate channel. As used by broadband technology, the frequency spectrum is divided up among discrete channels, to allow one user or a set of users access to single channels.

FDMA – Frequency Division Multiple Access.

FDX – Full Duplex. Transmission in two directions simultaneously, or, more technically, bi-directional, simultaneous two-way communications.

Femto – A prefix meaning 0.000000000000001

FEP – (Teflon) Dupont trademark for fluorinated ethylene propylene.

FEPB – A UL cable type. Fluorinated ethylene propylene insulated wire with glass braid.

FF – Flexible, single conductor, rubber insulated with cotton braid, 300V, 60C.

FFH – Same as FF, but insulated with a heat resisting rubber, 300V, 60C.

FFH-2 – A UL type of fixture wire with a 600V rating.

fiber optics – Transmission of energy by light through glass fibers. A technology that uses light as an information carrier. Fiber optic cables (light guides) are a direct replacement for conventional coaxial cable and wire pairs. The glass-based transmission cable occupies far less physical volume for an equivalent transmission capacity; the fibers are immune to electrical interference.

field molded splice - A joint in which the solid-dielectric joint insulation is fused and cured thermally at the job site.

field tests – Tests which may be made on a cable system including the high-voltage cable termination(s) by the user after installation, as an acceptance or proof test.

filing compound – A dielectric material poured or otherwise injected into a splice housing to prevent the entry of water. Filling compounds may require heating or mixing prior to filling. Some filling compounds may also serve as the insulation.

fission - (nuclear power) The splitting of an atom into two fragments, by bombarding its nucleus with particles releasing high kinetic energy and two or three neutrons along with radiation; the most important type of fission is that caused by neutrons because it can be self sustaining due to chain reaction; the newly released neutrons can cause other fissions to occur.

flashover - A disruptive discharge around or over the surface of an insulating member, between parts of different potential or polarity, produced by the application of voltage wherein the breakdown path becomes sufficiently ionized to maintain an electric arc.

flow control – The capability of network nodes to manage buffering schemes in order to allow devices of differing data transmission speeds to communicate with each other.

FM – Frequency Modulation. A modulation technique in which the carrier frequency is shifted by an amount proportional to the value of the modulating signal. The amplitude of the carrier signals remains constant. The deviation of the carrier frequencies determines the signal content of the message.

FOIRL – Fiber Optic Inter-Repeater Link. A fiber optic signaling methodology based in the proposed IEEE 802.3 standard governing fiber optics and the FDDI standard.

forward error correction – Code incorporating sufficient additional elements to enable the nature of some or all of the error to be indicated and corrected entirely at the receiving end.

FOTS – Fiber Optics Transmission System.

frequency – The number of cycles per second at which an analog signal occurs, expressed in Hertz (Hz). One Hertz is on cycle per second.

Frequency analyzer – An instrument to measure the intensity of various component frequencies from a transmitting source.

Frequency counter – An electronic measuring instrument that counts the number of cycles of a periodic electrical signal during a given time interval.

frequency plan – Specification of how the various frequencies of a broadband cable system are allocated for use.

frequency translator – See channel translator.

FSK – Frequency Shift Keying. A modulation technique whereby two different tones represent either the "0" or the "1" state of binary information.

FSMA - Field-Installed Sub Miniature Assembly. It is a threaded duplex connector for 100/140-micron cladding multi-mode fiber optic cables.

"F" type connector - A low cost connector used by the TV industry to connect coaxial cable to equipment.

full duplex – Two-way communications in which each modem simultaneously sends and receives data at the same rate.

FX – Single conductor rubber insulated Christmas tree wire with treated cotton braid overall. 125V.

FXT – Single conductor, PVC insulated, Christmas tree wire. 125V.

G

G – A UL cable type. Rubber insulated, neoprene, Hypalon or CPE jacketed, portable power cable with two to five #8 A.W.G. or larger conductors with ground wires.

galvanized steel wire – steel wire coated with zinc.

gateway – A special node that interfaces two or more dissimilar networks, providing protocol translation between the networks.

Gauss - A unit of magnetic induction (flux density) equal to 1 maxwell per cm squared or 10 to the 4th power weber per meter squared.

General purpose instrumentation bus – (GPIB) A protocol standard defined by the IEEE.

GFI – (Ground Fault Interrupter) A protective device that detects abnormal current flowing to ground and then interrupts the circuit.

G-GC – A UL cable type. A portable power cable similar to Type G, but a ground check conductor to monitor the continuity of the Grounding Circuit.

GHz – Gigahertz; 1,000,000,000 cycles per second.

GND – Ground.

Ground – A voltage reference point that is the same as earth or chassis ground.

ground fault – See fault, ground.

GSTN – General Switched Telephone Network. Same as public telephone network.

GTO – Gas tube sign and oil-burner ignition cable, 5KV-15KV.

guy – A tension wire connected to a tall structure and another fixed object to add strength to the structure.

H

Halar – (ECTFE) Ausimont Co. trademark for ethylene chlorotrifluoroethlene.

half duplex - Two-way communications in which data is sent in only one direction at a time.

half-hard wire – as applied to aluminum and copper, wire that has been processed so as to produce a strength approximately midway between that of soft wire and that of a hard-drawn wire.

hard-drawn wire – as applied to aluminum and copper, wire that has been cold drawn to final size so as to approach the maximum strength attainable.

hardware handshaking – The ability of a modem to signal when to start or stop transmitting data. Hand- shaking is accomplished by sending a control signal over the modem cable rather than by issuing a software command.

hazardous location – Ignitable vapors, dust or fibers that may cause fire or explosion as defined by the NEC.

HC – A heater cord with two to four conductors, size 8 AWG and larger, rubber or butyl insulation on each conductor, conductors cabled with ground wires, neoprene jacket overall.

HDLC - (High-Level Data Link Control) The International Standards Organization physical link protocol. Various manufacturers have their own

derivative of HDLC, the most common of which is IBM's SDLC (Synchronous Data Link Control).

HDPE – High density polyethylene.

HDTV – High definition Television

HDX – Half-Duplex Transmission. Transmission in either direction but not in both directions simultaneously. Compare with full-duplex transmission.

head-end – A central point in broadband networks that receives signals on one set of frequency bands and transmits them on another set of frequencies.

Henry – A unit of inductance equal to the inductance of a current changing at the rate of 1 ampere per second inducing a counter-electromotive force of 1 volt.

Hertz (Hz)- Cycles per second. A cycle that occurs once every second has a frequency of 1 Hertz. The bandwidth of the average phone line is between 300 and 3,000 cycles per second.

HF - High Frequency.

HID – High Intensity Discharge as in mercury metal halide and sodium lamps.

hipot – DC high potential testing of medium and high voltage cables. See dielectric strength testing.

high-split – A broadband cable system in which the bandwidth utilized to send toward the head-end (reserve direction) is approximately 6 MHz to 180 MHz, and the bandwidth utilized to send from the head-end(forward direction) is approximately 220MHz to 400MHz. The guard band between the forward and reverse directions (180 MHz to 220 MHz) provides isolation from interference.

High Tension Cables - Generally the high voltage ignition wires for combustion engines, gas and oil igniters, or neon signs, etc. (Unshielded.) Usually Type GTO.

high voltage power (system voltage ratings) – A class of nominal systems equal to or greater than 10,000 volts or less than 230,000 volts.

high-voltage cable termination – A device used for terminating alternating current power cables having laminated or extruded insulation rated 2.5kV and above.

HMWPE – High molecular weight polyethylene.

hot modulus - Stress at 100% elongation after 5 minutes of conditioning at a given temperature (normally 130C).

hot-rolled rod - the as-rolled section, normally round, produced by hot-rolling in a rod mil from a billet or wire bar.

hot stick – A long insulated stick having a hook at one end which is used to open energized switches, etc.

housing – A metallic or other enclosure for an insulated splice.

HPN – A UL cable type. Two conductor, thermosetting-insulated heater cord. Parallel construction. For use in damp locations.

HS – A heater cord with two to four conductors insulated with rubber and asbestos, conductor cabled, outer covering is a rubber jacket – sizes 14 and 12 Awg.

HSJ – Same as type HS but made in sizes 18 & 16 Awg.

HSJO – A heater cord with two to four conductors insulated with rubber and asbestos, conductors cabled, outer covering neoprene jacket – sizes 18 and 16 Awg.

HSO - A UL cable type. Thermoset jacketed heater cord.

HV – High Voltage.

hydroscopic – Readily absorbing and retaining moisture.

Hypalon – (CSP) Dupont trademark for chlorosulphonated polyethylene.

Hypot – (see hi-pot) Registered trade name by Associated Research, Inc. for their hi-pot tester.

hysteresis - The time lag exhibited by a body in reacting to changes in forces affecting it; an internal friction.

Hz – Hertz. A measure of frequency or bandwidth equal to one cycle per second. Named after experimenter Heinrich Hertz.

I – Symbol used to designate current.

IACS – (International Annealed Copper Standard) for copper used in electrical conductors.

ICA – Integrated Communications Adapter. Provided by several IBM communications products, including the 4361, 9370, System/36, and System/38. On the 4361, supports microcode implementation of Physical Unit Type 4, in the other environments, supports interfaces to IBM Token Ring Network, and CCITT X.25 interfaces to packet-switched data networks.

ICEA – Insulated Cable Engineers Association. The association of cable manufacturing engineers who make nationally recognized specifications and test for cables. Formerly IPCEA.

IEC – International Electrotechnical Commission.

IEEE – Institute of Electrical and Electronic Engineers. An international professional society that issues its own standards and is a member of ANSI and ISO.

IEEE 10BASESE2 Network – A network conforming to the IEEE 802.3 local area network standard. The network is capable of carrying information at rates up to 10Mbps over distances up to 2800 meters (9184 feet).

IEEE 10BROAD36 – 10 million bits per second over broadband coaxial cable with node-to-node coverage of 3600 meters. The IEEE 802.3 specification for running Ethernet on broadband.

IEEE-488 – (Institute of Electrical and Electronic Engineers –488) An IEEE standard parallel interface bus consisting of eight bi-directional data lines, eight control lines, and eight signal grounds, which provides for connection to an IEEE-488 device.

IEE-802- Standards for the interconnection of local networking computers equipment. The IEEE-802 standard deals with the Physical Link Layers of the ISO Reference Model of OSL.

IEEE 802.3 – An IEEE standard describing the physical and data link layers of a local area network based on bus topology and CSMA/CD.

IEEE 802.4 - An IEEE standard describing the physical and data link layers of a local area network based on bus topology. Used with Manufacturing Automation Protocol LANs.

IEEE 802.5 – A physical layer standard specifying a LAN with a token-passing access method on a ring topology. Used by IBM's token ring hardware.

IEEE 802.7 – A proposed physical layer standard specifying a LAN using both 802.3 and 802.4 standards.

IF – Intermediate-frequency.

Impact tests – Tests designed to reveal the behavior of material of a finished part if it were subjected to impact or shock loading.

impairment – The generic term for a flaw in phone-line quality, usually caused by echo, noise or a reduction in signal strength.

impedance – the total opposition a circuit, cable, or component offers to alternating current. It includes both resistance and reactance and is generally expressed in ohms.

impedance, characteristic – In a transmission cable of infinite length, the ratio of the applied voltage to the resultant current at the point the voltage is applied. Or, the impedance which makes a transmission cable seem infinitely long, when connected across the cable's output terminals. For a waveguide, it is the ratio of rms voltage total rms longitudinal current at certain points on a diameter, when the waveguide is match-terminated.

impedance, high – Generally, the area of 25,000 ohms or higher.

impedance, low – Generally, the area of 1 through 600 ohms.

impedance match – A condition whereby the impedance of a particular cable component is the same as the impedance of the circuit, cable or device to which it is connected.

impedance matching stub – A section of transmission line or a pair of conductors cut to match the impedance of one circuit to that of another.

impulse – See pulse.

IMSA - International Municipal Signal Association.

in-band signaling - The transmission of signaling information at some frequency or frequencies that lie within a carrier channel normally used for information transmission.

indoor termination – A cable termination intended for use where it is protected from direct exposure to both solar radiation and precipitation.

inductance – A property of a conductor or circuit which resists a change in current. It causes current changes to lag behind voltage changes and is measured in henrys.

induction – The phenomenon of a voltage, magnetic field, or electrostatic charge being produced in an object by lines of force from the source of such fields.

induction heating – Heating a conducting material by placing it in a rapidly changing magnetic field. The changing field induces electric currents in the material and I R losses account for the resultant heat.

infrared radiation - Radiant energy within the wavelength range of 780-1000 nanometers; invisible energy given off by heated bodies which transmits heat and will pass through glass.

input – A signal (or power) which is applied to a piece of electric apparatus, or the terminals on the apparatus to which a signal or power is applied.

insertion loss – A measure of the attenuation of a device by determining the output of a system before and after the device is inserted into the system.

Insulated Radiant Heating Wire – Similar to blanket wire but heavier construction for applications such as in ceiling panels – buried in ground or driveway and concrete walks.

insulated splice – A splice with a dielectric medium applied over the connected conductors and adjacent cable insulation.

insulating (isolating) joint – A cable joint which mechanically couples and electrically separates the sheath, shield, and armor on contiguous lengths of cable.

insulation – A material having good dielectric properties which is used to separate close electrical components, such as cable conductors and circuit components.

insulation level (cable) – The thickness of insulation for circuits having ground fault detectors which interrupt fault currents within 1 minute are rated 100% level, within 1 hour are rated 133% level, and over 1 hour are rated 173% level.

Insulation, rating – A maximum temperature assigned to insulation based on laboratory tests.

Insulation resistance – The electrical resistance of the insulating material at a specific time and condition as measured between two conductors.

insulation stress - The potential difference across an insulator. The stress on insulation is expressed in volts per mil (v/m) or kilovolts per meter. (kv/m).

insulation, voltage rated – The nominal phase-to-phase operating voltage of a three-phase cable system.

intercalated tapes – Two or more tapes of different materials helically wound and overlapping on a cable to separate the materials.

interference - Disturbances of an electrical or electromagnetic nature that introduce undesirable responses into other electronic equipment.

intermediate frequency – A frequency to which a signal is connected for ease of handling. Receives its name from the fact that it is an intermediate step between the initial and final conversion or detection stages.

intermediate temper – as applied to aluminum, and temper between soft and hard drawn.

internetwork - Within one network.

intrinsically safe – Incapable of releasing sufficient electrical or thermal energy under normal or abnormal conditions to cause ignition of a specific hazardous atmospheric mixture in its most ignitable concentration.

I/O – Input/Output. The process of transmitting data to and from the processor and its peripherals.

ionization factor – This is the difference between percent dissipation factors at two specified values of electrical stress; the lower of the two stresses is usually so selected that the effect of the ionization on dissipation factor at this stress is negligible.

ionization voltage - The potential at which a material ionizes. The potential at which an atom gives up an electron. A maximum temperature assigned to insulators based on laboratory tests.

IR drop – A method of designating a voltage drop in terms of both current and resistance.

ISDN – Integrated Services Digital Network. A CCITT standard, currently under development, that will cover a wide range of data communication issues but primarily the total integration of voice and data. Already having major effects on exchange and multi-plexer design.

ISO – International Standards Organization (reference model for open systems interconnection). A standard approach to network design that introduces modularity by dividing the complex set of communications protocols into more manageable, functional slices.

Isolation – The ability of a circuit or component to reject interference, usually expressed in db.
ISO Reference Model for OSI – (International Standards Organization Reference Model for Open Systems Interconnection) A standard approach to network design which introduces modularity by dividing the complex set of functions into more manageable, self-contained, functional slices. These layers, from the innermost layer, are as follows:

Physical Layer – concerned with the mechanical and electrical means by which devices are physically connected and data is transmitted.

Link Layer – concerned with how to move data reliably across the physical data link.

Network Layer - provides the means to establish, maintain, and terminate connections between systems; concerned with switching and routing of information.

Transport Layer - concerned with end-to-end data integrity and quality of service.

Session Layer – standardizes the task of setting up a session and terminating it; coordination of interaction between end-application processes.

Presentation Layer – relates to the character set and data code which is used, and to the way data is displayed on a screen or printer.

Application Layer – concerned with the higher level functions which provide support to the application or system activities.

IVDT – Integrated Voice/Data Terminal. Device that incorporates voice telephone, keyboard and display unit.

IW – Inside Wire.

IWCA – Inside Wiring Cable.

Izod impact test – The test is of British origin and is performed with a pendulum type of machine. The specimen is notched with one side clamped; the other side is struck by a weight. Experience has shown that high notch toughness of printed wire boards correlates with long life of the finished part. The unit of measure is foot pounds per linear inch of notch.

I R – Formula for power in watts, where I = current in amperes, R = resistance in ohms. Also see watt.

J

jacket - Pertaining to wire and cable, the outer sheath which protects against the environment and may also provide additional insulation.

jam - A short encoded sequence emitted by a node to ensure that all other nodes have detected a collision.

Jam ratio - For three single conductors of equal diameter, the jam ratio is defined as the ratio of the conduit inside diameter (ID) to the diameter of one cable.

Jet Starter Cable – Single conductor 600V cable used for external aircraft power.

joint – that portion of the conductor where the ends of two wires, rods, or groups of wires are joined by brazing, soldering, welding or by mechanical means.

Joule – A unit of energy defined as the work done when the point of application of 1 Newton is displaced 1 meter in the direction of the force.

Joule's law – When electricity flows through a material, the rate of heating in watts will equal the resistance of the material in ohms times the square of the current in amperes.

Jumper Cables – Extra flexible cables with high voltage insulation for use as temporary connections.

JTT – A plastic insulated thermostat cable with two or more conductors, plastic jacket overall.

K

K - #18 through #10, 2 conductors, rubber insulted, braid overall.

Kapton – Dupont trademark for polyimide.

kB – K-byte. 1,024 bytes. Usually describes bits or bytes, as in transmission speeds measured in Kbsec or kilobits per second.

kbps – Thousands of bits per second. (bps)

kcmil – One Thousand circular mils, replaced MCM in the 1990 NEC.

Kevlar – A high strength/DuPont Polymer used as a cable messenger or strength member.

K-Fiber – Asbestos free substitute for strong heat resistant high Temperature applications. K-Fiber jacketed High Temperature cable will equal or exceed the abrasion resistance of a comparable asbestos jacketed cable.

kilo – Prefix meaning thousand.

Kirchoff's Laws – 1) the algebraic sum of the currents at any point in a circuit is zero 2) the algebraic sum of the product of the current and the impedance in each conductor in a circuit is equal to the electromotive force in the circuit.

kV – Kilovolt (1000 volts)

kVA – Kilovolt ampere.

Kynar – (PVDF) Atochem trademark for polyvinylidene fluoride.

kW – Kilowatt. 1000 watts power.

L

L – Symbol for inductance.

LAN – Local Area Network. A user-owned, user operated, high volume data transmission facility connecting a number of communicating devices within a single building or campus of buildings.

LATA – Local Access and Transport Area. One of 161 USA geographical subdivisions used to define local (as opposed to long distance) telephone service.

lay – Pertaining to wire and cable, the axial distance required for one cabled conductor or conductor strand to complete on revolution about the axis around which it is cabled.

lay direction - The twist in the cable as indicated by the top strands while looking along the axis of the cable away from the observer. Described as "right hand" or "left hand".

L Band – The band of frequencies between 390 and 1,550 megahertz.

LDC – Local Device Controller Line. In the 5520 Administrative System, the twin axial cable to which printers and/or another IBM 5520 can be connected.

lead-in – The conductor that provides the path for r-f energy between the antenna and the radio/television receiver.

leakage current – An undesirable flow of current through or over the surface of an insulating material.

leakage distance – The shortest distance along an insulation surface between conductors.

leased line - A line intended for data communications that is leased from a telephone company. Leased lines are conditioned to a variety of specifications to keep impairments at a minimum. (See also dial-up line.)

length of lay – the axial length of one turn of the helix of a wire or member.

level – A measure of the difference between a quantity or value and an established reference.

LF – Low Frequency. A band of frequencies extending from 30 to 300 KHz in the radio spectrum, designated by the Federal Communications Commission.

Lighting Ground Cable – A specially stranded single conductor cable connecting lighting rods (air terminals) protecting buildings to adequate ground, such as grounding rods.

Light Pen – A photocell or photo-multiplier mounted in a pen-shaped housing that can be held against a CRT screen to measure or change the display.

limpness – The ability of a cable to lay flat or conform to s surface as with portable or microphone cables.

line drop – A voltage loss occurring between any two points in a power transmission line. Such loss, or drop, is due to the resistance, or leakage of the line.

line equalizer – A reactance (inductance and/or capacitance) connected in series with a transmission line to alter the frequency-response characteristics of the line.

Line fault – A fault such as an open circuit, short circuit or ground in an electrical line circuit.

line level – The level of a signal at a certain point on a transmission line. Usually expressed in decibels.

line voltage - The value of the potential existing on a supply or power line.

Lissajous Figure – A special case of an x-y plot in which the signals applied to both axes are sinusoidal functions: useful for determining phase and harmonic relationships.

Litz Wire – Very fine, usually #44 bare copper, each strand is enamel insulated and Nylon wrapped (formerly silk). Low inductance coil windings – high frequency applications.

load – A device that consumes or converts the power delivered by another device.

Load Cell Cable - Small multi-conductor shielded cables for connecting load cells with instruments in electronic strain gauges. Also used for weighing, and force measurement applications.

loaded line – A transmission line that has lumped elements (inductance or capacitance) added at uniformly spaced intervals. Loading is used to provide a given set of characteristics to a transmission line.

loading – See loaded line.

LOCA – (Loss of Coolant Accident) The test used to simulate a nuclear reactor accident characterized by high radiation, high temperature, etc.

Local Area Network (LAN) – A Network that is located in a localized geographical are (e.g. an office, building, complex or buildings, or campus), and whose communications technology provides a high-bandwidth, low-cost medium to which many nodes can be connected.

Logging Cable – Usually FEPO/Tefzel self-supporting instrumentation cable. Generally dropped through borings in subsurface mining or well applications.

long-haul network – A network most frequently used to transfer data over distances from several thousand feet to several thousand miles. These networks can use the international telephone network to transmit messages over most or part of these distances.

longwall machine (mining) – A machine used to undercut coal.

Loop test – A long line test where a good line is connected to a faulty line to form a loop in which measurements will locate the fault.

loss – The portion of energy applied to a system that is dissipated and performs no useful work.

Loss factor – The power factor times the dielectric constant.

low frequency – A band of frequencies extending from 30 to 300 kHz in the radio spectrum, designated by the Federal Communications Commission.

low-voltage (1) (National Electrical Code) – An electromotive force rated nominal 24 volts, nominal or less, supplied from a transformer, converter, or battery. (2) (power system voltage ratings) – A class of nominal system voltages 1000 or less.

LPF - Low Pass Filter. Filter which greatly attenuates signals of higher than a specified frequency, but passes with minimal attenuation all signals lower in frequency.

LRC – Longitudinal Redundancy Check. An error detection method. Also called horizontal parity check.

LTM – LAN Traffic Monitor. An optional mode of LAN Bridge 100 operation that provides data about network traffic. A load host down-line loads the LTM software image to the LAN Bridge 100 unit.

lumen – A unit of measurement for light output.

LV – Low Voltage.

LW – An electric hook-up wire with PVC insulation with or without a nylon covering, braid or shielding braid. 300V.

mA - Milliampere (one-thousandth of an ampere).

magnetic field –the field created when current flows through a conductor, especially a coiled conductor.

MAN – Metropolitan Area Network. A data network linking together terminals, memories and other resources at many sites within a city area. Each site may have its own local area network (LAN). Links between sites are usually on digital circuits rented from the local telephone company using a bit-rate appropriate to traffic requirements.

MAP – Manufacturing Automation Protocol. The OSI profile championed by General Motors Corporation to provide inter-connectivity between plant hosts, area managers and cell controllers over a broadband token-passing bus network.

MAT – Metropolitan Area Trunks.

MATV – (Master Antenna Television System) A small, less expensive cable system usually restricted to one or two buildings such as hospitals, apartments, libraries, hotels, office buildings, etc.

MAU – Media Access Unit. Circuitry used in LANs to enable data terminal equipment to access the transmission medium.

maximum and minimum cable conductor diameter - The largest and smallest cable conductor diameters that a high-voltage cable termination is designed to accommodate without special modifications.

maximum and minimum cable insulation diameter – The largest and smallest diameters over the insulation, that a high-voltage cable termination is designed to accommodate.

maximum design voltage - The maximum voltage at which a high voltage cable termination is designed to operate continuously under normal conditions.

Mbit/sec – Million bits or megabits per second. A unit of data transmission speed. Also written Mbps.

MC – Denotes cable with interlocking metal tape or corrugated tube enclosure (metal clad).

MCA – Micro Channel Architecture. IBM's microcomputer architecture.

MCM – Thousand circular mils; e.g. 500MCM is 500,000 circular mils. Preferred notation is kcmil.
MDF – Main Distribution Frame.

Mean time to failure – A reliability measure of a piece of equipment or process.

mechanical water absorption – A check of how much water will be absorbed by material in warm water for seven days. (mg/sq. in. surface)

Medium frequency – The band of frequencies between 300 and 3,000 kilohertz.

medium-hard-drawn-wire – as applied to copper wire, having tensile strength less than the minimum for hard-drawn wire, but greater than the maximum for soft wire.

mega – Prefix meaning million.

medium voltage (power system voltage ratings) – A class of nominal system voltages greater than 1000 and less than 100,000 volts.

Megger – A special ohmeter for measuring very high resistance. Primarily used for checking the insulation resistance of cables, however, it is also useful for leakage tests.

Melinex – ICI trademark for polyester. (See Mylar).

melt index – The extrusion rate of a material through a specified orifice at specified conditions.

member – a group of wires stranded together for combination with other stranded groups into a multiple-member conductor.

MESA – See MSHA.

messenger wire – a metallic supporting member either solid or stranded which may also perform the function of a conductor.

MFD – Microfarad (one-millionth of a farad). Obsolete abbreviation.

MG – Glass reinforced mica tape insulation with an overall sheath of woven glass yarn impregnated with flame, heat and moisture resistant finish. 450C, 600V appliance wire.

MHz – Megahertz (one million cycles per second).

MI – One or more conductors insulted with highly compressed refractory minerals and enclosed in a liquid-tight and gas-tight metallic tube sheathing.

micro – Prefix meaning one-millionth.

Microcom Networking Protocol (MNP) – A set of error detection and data- compression protocols, developed and licensed by Microcom, that have become unofficial industry standards.

Microfarad – One-millionth of a farad (mf and mfd are common abbreviations).

micromicrofarad – One-millionth of a microfarad. (mmf, mmfd are common abbreviations). Also, a picofarad. (pf or pfd).

Microphone Cable – A very flexible, usually shielded cable used for audio signals.

microphonics – Noise caused by mechanical excitation of a system component. In a single conductor microphone cable, for example, microphonics can be caused by the shield rubbing against the dielectric as the cable is flexed.

mid-split – A broadband cable system in which the cable bandwidth is divided between transmit and receive frequencies. The bandwidth utilized

to send toward the head-end (reverse direction) is approximately 5MHz to 100MHz, and the bandwidth utilized to send away from the head-end (forward direction) is approximately 160 MHz to 300 MHz. The guard band between the forward and reverse directions (100 MHz to 160 MHz) provides isolation from interference.

mil – A unit of length equal to one thousandth of an inch.

MIL - Military specification.

milli – Prefix meaning one-thousandth.

MIPS – Millions of Instructions Per Second. One measure of processing power.

MJ – Modular Jack. A jack used for connecting voice cables to a faceplate.

MM - Mining machine cable.

MMJ – Modified Modular Jack. A jack used for connecting data cables to a faceplate.

modem – A contraction of modulate and demodulate; a conversion device installed in pairs at each end of an analog communications line. The modem at the transmitting end modulates digital signals received locally from a computer or terminal; the modem at the receiving end demodulates the incoming analog signal, converting it back to its original (i.e., digital)format, and passes it to the destination device.

Modulus of elasticity – The ratio of stress (force) to strain (deformation) in a material that is elastically deformed.

mono filament – A single strand filament as opposed to a braided or twisted filament.

MPF – Mine power feeder cable. 5-8-15KV.

MSHA – (Mine Safety and Health Administration) The Federal enforcement agency for employee safety in mines and mills. Formerly known as – MESA, Bureau of mines. MSHA regulations appear in CFR Title 30, Chapter 1.

MTBF – Mean-Time Between-Failure. A figure of merit for electronic equipment or systems that indicates the average duration of periods of fault-free operation. Used in conjunction with MTBF to derive availability figure.

MTTR – Mean-Time-To-Repair. A figure of merit for electronic equipment or systems that indicates the average time required to fix the equipment or system. Used in conjunction with MTBF to derive availability figures.

MTW – Machine tool wire thermoplastic-insulated. 90C to 105C, 600V.

multicast – The ability to braodcast messages to one node or a select group of nodes.

multidrop – See multipoint circuit.

multimode – Optical fiber which allows more than one mode of light to propagate. A step-index fiber has a core of uniform refractive index while in a graded-index fiber the refractive index of the core smoothly varies with the radius.

multiplex – The use of a common physical channel in order to make two or more logical channels, either by splitting of the frequency band (frequency-division multiplex), or by utilizing this common channel at different points in time (time-division multiplex). multiplexer – Equipment that permits simultaneous transmission of multiple signals over one physical circuit.

multipoint circuit – A single line connecting three or more stations.

Murray loop test – A method used to localize cable fault. mutual capacitance – Capacitance between two conductors in a cable.

MUX – Multiplex. To transmit two or more signals over a single channel.

MUXER – Multiplexer. Electronic equipment which allows two or more signals to pass over one telephone line.

mV – Millivolt (one-thousandth of a volt).

MV – Medium voltage cables usually rated 5-35KV)

mW – Milliwatt (one-thousandth of a watt).

Mylar – DuPont trademark for polyethylene terephtalate (polyester) firm. (See Melinex).

N

NBR – Butadiene-acrylonitrile copolymer rubber, a material with good oil and chemical resistance.

NBR/PVC - A blend of acrylonitrile-butadiene rubber and polyvinyl chloride (PVC). Used for jacketing.

NBS – National Bureau of Standards. Now called NIST (National Institute of Standards and Technology)

N Connector - A threaded connector for coax; N is names after Paul Neill.

NEC – National Electrical Code.

NEMA – National Electrical Manufacturers Association.

neoprene - A synthetic rubber with good resistance to oil, chemical, and flame. Also called polychloroprene.

Net/One – The Ungermann-Bass local area network for heterogeneous device interconnection, which is available in baseband, broadband, and fiber optic versions.

network – A series of nodes connected by communications channels.

Network Interface Card – Also called controller card, PC expansion card, controller board, network interface controller, adapter card, adapter board, network adapter module, and/or network interface module. Its function is to allow the workstation to be physically and electrically connected to some specific network at the physical and data link layer.

network interface controller – A communications device that allows interconnection of information processing devices to a network.

Network Interface Unit (NUI) – The Ungermann-Bass, Inc. trademarked name for its network interface controller.

network management – Administrative services performed in managing a network, such as network topology and software configuration, downloading of software, monitoring network performance, maintaining network operations, and diagnosing and trouble shooting problems.

Network Management Console (NMC) - The Ungermann-Bass device which provides the execution environment for Net/One network management software and utility programs, and storage to be downloaded into Net/One components in the network.

Network Protection Device – A device which provides isolation between PBX circuits and CO trunks or tie lines.

network service – An application available on a network, e.g., file transfer.

Newton – The derived SI unit for force: the force which will give one kilogram mass an acceleration of one meter per second.

NFPA – National Fire Protection Association.

NM – Non-Metallic sheathed cable, braid or plastic covered. For dry use, 90C conductor rating.

NM-B – A UL cable type.

NMC – Non-metallic sheathed cable, plastic or neoprene covered. Wet or dry use, 90C conductor rating.

node – A station

noise – In a cable or circuit any extraneous sounds or signal which tends to interfere with the sound or signal normally present in or passing through the system.

Nomex – DuPont trademark for a temperature resistant, flame retardant nylon.

nominal – Name or identifying value of a measurable property by which a conductor or component or property of a conductor is identified, and to which tolerances are applied.

nominal voltage (National Electrical Code) – SA nominal value assigned to a circuit or system for the purpose of conveniently designating its voltage class (as 120/240, 480Y/277, 600 etc.). The actual voltage at which a circuit operates can vary from the nominal within a range that permits satisfactory operation of equipment.

nomograph – A chart or diagram with which equations can be solved graphically by placing a straight edge on two known values and reading the answer where the straight edge crosses the scale of the unknown value.

NRHW – A cable with conductors insulated with heat resisting rubber, with a neoprene jacket overall. Suitable for installation in ducts. Dry and wet locations – 75C, 600V.

NRZ – Non -Return to Zero. The common encoding of binary stream into two voltage levels.

NRZI – Non-Return to Zero Inverted (In SDLCO). A binary encoding technique in which a change in state represents a binary 0 and no change in state represents a binary 1.

NSD – A three conductor service drop cable, two polyethylene insulated conductors, cabled with a bare neutral conductor, which acts as a supporting messenger.

N-series Connector – A coaxial connector (RG-8/U) used in standard Ethernet networks.

NTSC - National Television Standard Committee. The US color TV standard.

numerical aperture – The acceptance angle of an optical fiber which determines the angle at which light can enter the fiber; expressed as a number which is equivalent to the sine of the angle.

nylon – An abrasion-resistant thermoplastic with good chemical resistance. Polyamide.

O

OD – Outside diameter.

OEM – Original equipment manufacturer.

OFHC – Oxygen-free high conductivity copper.

ohm - The electrical unit of resistance. The value of resistance through which a potential difference of one volt will maintain a current of one ampere.

Ohm's law – Stated E = IR, I = E/R, or R = E/I where E is voltage, I is current and R is resistance. Open circuit – A break in an electrical circuit so that there can be no current flow.

Optical encoder – A device whose position is determined by a photoelectric device and converted to

an electrical data output.

optimization – The procedure used in the design of a system to maximize or minimize some performance index.

OSHA - (Occupational Safety and Health Act) Federal Law #91-596 of 1970 charging all employers engaged in business affecting interstate commerce to be responsible for providing a safe working place. It is administered by the Department of Labor. OSHA regulations are published in Title 29, Chapter XVIII, Part 1910 of the CFR and the Federal Register.

OSI – Open Systems Interconnection. The OSI reference model for a logical structure for network operations standardized within the ISO; a seven layer network architecture being used for the definition of network protocol standards to enable any OSI – compliant computer or device to communicate with any other OSI compliant computer or device for an exchange of information.

osmosis – The diffusion of fluids through membranes.

outdoor termination – A cable termination intended for use where it is not protected from direct exposure to either solar radiation or precipitation.

outgassing – Dissipation of gas from a material .

out-of-band-signaling – A method of signaling which uses a frequency that is within the passband of the transmission facility, but outside of a carrier channel normally used for information transmission.

output – the useful power or signal delivered by a circuit or device.

oxygen index – A test to rate flammability of materials in a mixture of oxygen and nitrogen. More formally referred to as Limiting Oxygen Index (LOI).

ozone – Extremely reactive form of oxygen, normally occurring around electrical discharges and present in the atmosphere in small but active quantities. In sufficient concentrations it can break down certain insulations.

PABX - (Private Automatic Branch Exchange) Equipment originally used as a means of switching telephone calls within a business site and from the site to outside lines. Can also be used for low speed transmission of data, in addition to voice.

packet – A collection of bits that contain both control information and data. The basic unit of transmission in a packet-switched network, control information is carried in the packet, along with the data, to provide for such functions as addressing, sequencing, flow control, and error control at each of several protocol levels. A packet can be of fixed or variable length, but generally has a specified maximum length.

packet format – The exact order and size of the various control and information fields of a packet, including header, address and data fields.

packet overhead – A measure of the ratio of the total packet bits occupied by control information to the number of bits of data, usually expressed as a percent.

packet switching – A data communications technique in which data is transmitted by means of addressed packets and a transmission channel is occupied for the duration of transmission of the packet only. The channel is then available for use by packets being transferred between different data terminal equipment.

parallel circuit – A circuit in which identical voltage is presented to all components, and the current divides among the components according to the resistances or the impedances of the components.

partial discharge (corona) extinction voltage -The voltage at which partial discharge (corona) is no longer detectable on instrumentation adjusted to a specific sensitivity, following the application of a specified higher voltage.

patchcord – A flexible piece of electrical cord terminated at both ends with plugs, used for interconnecting circuits on a patchboard.

PBX – Private Branch Exchange. A manual, user-owned telephone exchange. Sometimes used in a general sense to include both PBXs and PABXs.

PCG – A two or three conductor portable power cable with one uninsulated grounding conductor, cabled with two insulated control conductors, outer covering is neoprene.

PCM - Pulse Code Modulation. A modulation technique used to convert analog voice signals into digital form. Used for voice multiplexing on T1 circuits.

PCP – (Neoprene) Polychloroprene.

PD – Two or more rubber insulated conductors with cotton braid over rubber insulation, conductors cabled, outer covering is untreated cotton braid. 300V.

PDN – Public Data Network. A packet switched or circuit switched network available for use by many customers. PDNs may offer value-added services at a reduced cost because of communications resource sharing, and usually provide reliability due to built-in redundancy.

peak – the maximum instantaneous value of a varying current or voltage. Also called crest.

PEEK – poly ether ether ketone.

percent conductivity – the ratio of the resistivity of the International Annealed Copper Standard (IACS) at 20C to the resistivity of a material at 20C, expressed in percent. Results are calculated on a weight basis or volume basis and so specified.

PFA – (Teflon) Dupont trademark for perfluoroalkoxy.

PG – A two or three conductor, portable power cable, rubber insulated conductors are cabled with one uninsulated grounding conductor, outer covering is a neoprene jacket.

phase – The location of a position on a waveform of an alternating current, relation to the start of a cycle. Measured in degrees, with 360 corresponding to one complete cycle.

phase sequence – The order in which successive members of a periodic wave set reach their positive maximum values: a)zero phase sequence – no phase shift: b) plus/minus phase sequence – normal phase shift.

phase shift – A change in the phase relationship between two alternating quantities. The phase angle between the input and output signals of a system.

Pickup – Any device which is capable of transforming a measurable quantity of intelligence (such as sound) into relative electrical signals, e.g., a microphone.

pico - Prefix meaning one-millionth of one-millionth.

picofarad – One-millionth of one-millionth of a farad. A micromicrofarad, or picofarad (abbreviation pf).

PILC Cable – Paper insulated, lead covered.

PL – Two rubber insulated parallel conductors enclosed in a cotton or rayon decorative braid. Dry locations. 300V.

plastic – High polymeric substances, including both natural and synthetic products, but excluding the rubbers that are capable of flowing under heat and pressure.

plasticizer – A chemical added to plastics to make them softer and more flexible.

PLSJ – Two rubber insulated parallel conductors with a rubber a jacket overall. 300V.

piezoelectric effect – Some materials become electrically polarized when they are mechanically strained: the direction and magnitude of the polarization depends upon the nature, amount, and the direction of the strain: in such materials the reverse is also true in that a strain results from the application of an electric field.

PLT – Same as PLSJ, except PVC insulation.

PLTC – Power Limited Tray Cable, rated 300 volts.

PNB – A multi-conductor control cable, conductor insulation is polyethylene with a thin nylon covering over the insulated conductors, conductors cabled, outer covering plastic jacket.

PO –Two rubber insulated conductors with cotton braid over insulation, conductors laid parallel, outer covering is a cotton or rayon decorative braid.

pole and bracket – A twin parallel cable, the insulation is rubber, protected by a tape or fibrous braid, the outer covering is a treated braid or other type.

polybutadiene – A type of synthetic rubber often blended with other synthetic rubbers to improve their properties.

polyethylene – A thermoplastic material having excellent electrical properties.

polymer – A substance made of many repeating chemical units or molecules. The term polymer is often used in place of plastic, rubber, or elastomer.

Polymer Optical Fiber – One of the media projected to become the heart of an automotive LAN. Current experimentation and technological agreements between key companies may result in technological advancements to ultimately herald the introduction of LANs in transportation vehicles. The POF media would become the communications backbone of the vehicle.

polypropylene - A thermoplastic similar to polyethylene but stiffer and having higher softening point (temperature).

polyurethane – Broad class of polymers noted for good abrasion and solvent resistance. Can be in solid or cellular form.

polyvinylchloride (PVC) – A general purpose thermoplastic used for wire and cable insulations and jackets.

POSJ – All rubber, parallel, light duty rip-cord for use on lamps and small appliances, 300V, 60C.

POT – A plastic insulted “rip cord” same as SPT.

POTS – Acronym for “Plain Old Telephone Service”

potting – Sealing by filling with a substance to exclude moisture.

power – The amount or work per unit of time. Usually expressed in watts.

power factor – The cosine of the phase difference between current and applied voltage.

power loss – The difference between the total power delivered to a circuit, cable or device, and power delivered by that device to a load.

power ratio – The ratio of the power appearing at the load, to the input power.

PPE – Polypropylene ethylene.

P & R – Any cable made for reeling service. (Payout

and retractable)

premolded splice – A joint made of premolded components assembled in the field.

production (routine) tests – Tests made on components or subassemblies during production for the purpose of quality control.

PROM - Programmable Read-Only Memory. Permanently stored data in a nonvolatile semi-conductor device.

protective covering – A field-applied material to provide environmental protection over the splice or housing, or both.

PS - A thermostat cable with two or more solid conductors, rubber insulation with cotton braid over insulation, conductors cabled, outer covering treated cotton braid.

PSK – Phase Shift Keying. A phase modulation technique in which phase shifts represent signaling elements.

PSN – Packet Switching Network. A network which enables external computers and terminals to communicate with other computers linked to the network. PPSN uses packet switching to transmit data. Connections to PSN are governed by a series of recommendations known collectively as X.25.

PT – Thermostat cable with solid conductor, individual insulation, twisted together.

PTFE – (TFE Teflon) Polytetrafluoroethylene.

PTT – Post Telephone and Telegraph Authority. The government agency that functions as the communications common carrier and administrator in many areas of the world.

pulse – A current or voltage which changes abruptly from one value to another and back to the original value in a finite length of time.

PVC – Polyvinylchloride. A common insulating and jacketing material used on cables.

PVDF – (Kynar) Atochem trademark for polyvinylidene fluoride.

Q band – The band of frequencies between 36 and 46 gigahertz.

quadrature amplitude modulation (QAM) – The modulation technique used in 9,600 bps modems that adhere to the V.32 standard, in which the signal varies in amplitude (voltage, or strength) and phase.

R – Symbol for resistance or resistor.

radio frequency – The frequencies in the electromagnetic spectrum that are used for radio communications. A band of frequencies between 10 kilohertz and 100 gigahertz.

RAM - Random Access Memory. A storage device into which data can be entered (written) and read; usually (but not always) a volatile semiconductor memory.

rated strength – the strength in tension of a stranded conductor calculated with specification requirements.

RBOC – Regional Bell Operating Company.

RD – A two conductor, twin parallel cable, rubber insulation, treated cotton braid overall.

RDL – Same as RD with lead sheath overall.

REA (Rural Electrification Administration) – A federally supported program to provide electrical service to rural areas.

reactance – The opposition offered an alternating electron flow by a capacitance or inductance. The amount of such opposition varies with the frequency of the current. The reactance of a capacitor decreases with an increase in frequency; the opposite occurs with an inductance.

reflection – The change in direction (or return) of waves striking a surface. For example, electromagnetic energy reflections can occur at an impedance mismatch in a transmission line, causing standing waves.

reliability – The probability that a device will function without failure over a specified time period or amount of usage.

resistance – In dc circuits, the opposition a material offers to current, measured in ohms. In ac circuits, resistance is the real component of impedance, and may be higher than the value measured at dc.

resistivity – A material characteristic opposing the flow of energy through the material; expressed as a constant for each material: is affected by temper, temperature, contamination, alloying, coating, etc. The ability to resist the flow of electrical current either through the bulk of the material or on its surface. The unit of volume resistivity is the ohm-cm.

Resistor code color – A method of indicating resistance value and tolerance. The first color represents the first significant figure of the value. A second color represents the second significant figure, and the third is the multiplier or the number of zeros that follow two significant figures. When there is a fourth color band, it indicates the tolerance.

resonance - An ac circuit condition in which inductive and capacitive reactances interact to cause a minimum or maximum circuit impedance.

retractile cord - A cord having specially treated insulation or jacket so that it will retract like a spring. Retractability may be added to all or part of a cord's length.

RF – (radio frequency). Uses Electromagnetic waveforms used for transmission, usually in the megahertz (MHz) range. Electromagnetic waves are usually transmitted between 500 KHz and 300 GHz.

RFI – Radio Frequency Interference. The disruption of radio signal reception caused by any source which generates radio waves at the same frequency and along the same path as the desired wave.

RF modem - (radio frequency modem) Device used to convert digital data signals to analog signals (and from analog to digital), then modulate/demodulate them to/from their assigned frequencies.

RG/U – "RG" is the military designation for coaxial cable, and "U" stands for "general utility".

RH – Rubber-insulated, heat resistant building wire. 75C.

RHD – A twin parallel cable, heat resisting rubber insulation , outer finish, treated cotton braid.

RHDL – Same as RHD without braid and a lead sheath overall.

RHH – Rubber-insulated, heat resistant building wire, 90C.

RH/RW – Rubber-insulated, heat and moisture resistant building wire, 75C dry, 60C wet.

RHW - Rubber-insulated building wire, heat and moisture resistant, 75Cdry or wet.

RHW-2 – Rubber-insulated building wire, heat and moisture resistant, 90C dry and wet.

ring – A network topology in which stations are connected to one another in a closed logical circle. Typically, access to the media passes sequentially from one station to the next by means of polling from a master station, or by passing an access token from one station to another.

rise time – The time it takes the voltage to rise from 0.1 to 0.9 of its final value.

RIV - (radio influence voltage) The radio noise appearing on conductors of electric equipment or circuits.

RJ11 – A two, four, six or eight contact modular phone type plug.

RJ45 – An eight position modular AT & T phone-type plug that can accommodate up to eight wires.

RMS – Root-mean-square.

Rockwell Hardness – A measure of hardness determined by resistance to indentation by a small diamond or steel ball under pressure.

ROM – Read-Only Memory. Nonvolatile semiconductor storage device manufactured with predefined contents. Compare with EPROM, PROM, and RAM.

Romex – A type of nonmetallic sheathed cable.

Root-mean-square(rms) – In a periodic quantity this is the square root of the average or mean of the squares of the quantity taken over a complete period.

rope-lay conductor – see concentric-lay conductor.

rope strand – A conductor composed of a center group of twisted strands surrounded by layers of twisted strands.

routine tests – Tests made on each high-voltage cable termination or upon a representative number of devices, or parts thereof, during production for the purposes of quality control.

RR – A cable with one or more rubber insulated conductors, neoprene jacket overall, non-portable.

rulan – is a flame retardant polyethylene which has additives to inhibit the rate of burning. The additives have only a slight effect on physical or electrical properties of the insulation.

RS-232 – An EIA recommended standard (RS); most common standard for connecting data processing devices. RS_232 defines the electrical characteristics of the signals in the cable that connect DTE with DCE; it specifies a 25-pin connector (the DB-25 connector is almost universally used in RS-232 applications); and it is functionally identical to CCITT V.24/V.28.

RS-232-C – A technical specification published by the EIA that specifies the mechanical and electrical characteristics of the interface for connecting DTE and DCE. It defines interface circuit functions and their corresponding connector pin assignments. The standard applies to both asynchronous and synchronous serial, binary data transmission at speeds up to 20 Kbps in full- or half-duplex mode. RS-232-C defines 20 specific functions. The physical connection between DTE and DCE is made through plug-in, 25-pin connectors. RS-232-C is functionally compatible with the CCITT recommendation V.24.

RS232-C serial I/O port - A standard connection interface for computer peripheral equipment.

RS-422 – A standard operating in conjunction with RS-449 that specifies electrical characteristics for balanced circuits. An EIA recommended standard for cable lengths that extended the RS-232 50-foot limit. Although introduced as a companion standard with RS-422, RS-423 is not widely used. Electrically compatible with CCITT recommendation V.10.

RS-449 – Another EIA standard for DTE/DCE connection which specifies interface requirements for

expanded transmission speed (up to 2Mbps), longer cable lengths, and 10 additional functions. RS-449 applies to binary, serial, synchronous or asynchronous communications. Half- and full-duplex modes are accommodated and transmission can be over 2- or 4-wire facilities such as point-to-RS-449 cont. point multipoint lines. The physical connection between DTE and DCE is made through a 37-contact connector; a separate 9-connector is specified to service secondary channel interchange circuits, when used.

RTS – Request-To-Send. An RS-232 modem interface signal (sent from the DTE to the modem on pin 4) which indicates that the DTE has data to transmit.

rubber, ethylene proplene (EPR) – A synthetic rubber insulation having excellent electrical properties.

rubber (wire insulation) - A general term used to describe wire insulations made of thermosetting elastomers such as natural or synthetic rubbers, neoprene, Hypalon, EPR and others.

RUH – Same as RU with heat resistant latex rubber insulation. Maximum operating temperature 75C.

RUW – Same as RUH, with moisture resisting outer braid, maximum operating temperature 60C.

RW – Rubber-insulated building wire. Moisture-resistant 60C.

S – Hard service flexible cord with thermoset insulation and jacket.

SAE – Society of Automotive Engineers.

Satellite Equipment Room - A room or wiring closet used as the central wiring hub.

SB - A single conductor wire or cable insulation with cotton yarn braids, treated for flame resistance, 90C.

S band – A band of frequencies between 1,550 and 5,200 megahertz.

SBR – A copolymer of styrene and butadiene. Also GRS or Buna-S. Most commonly used type of synthetic rubber. -

Schering bridge – See bridge.

SD – A two conductor twin parallel, service drop cable, the power conductors are insulated with rubber, a bare neutral is wrapped around the two insulated conductors, the outer covering is a treated cotton.

SDLC (Synchronous Data Link Control) – An IBM communications line protocol associated with SNA. SDLC provides for control of a single communications link or line, accommodates a number of network arrangements, and operates in half- or full-duplex over private or switched facilities.

SDN- Small diameter multi-conductor control cable with neoprene jacket and nylon sheath over polyethylene insulation.

SDT/TC – Thermoplastic 90C tray cable.

SE – Service entrance cable – 2 or 3 conductors rubber insulated conductors, flame and moisture resistant, braid overall.

SEA – Service entrance cable, steel-armored under outer braid, one or two rubber-insulated conductors with neutral conductor served concentrically, moisture-resistant tape, weatherproof-braid finish, 300V 75C.

Semiconductor – In wire industry terminology, a material possessing electrical conduction properties that fall some where between conductors and insulators. Usually made by adding carbon particles to an insulator. Not the same as semiconductor materials such as silicon, germanium, etc., used for making transistors and diodes.

Semi-rigid cable – Generally refers to Type MI or Type ALS which can be bent or shaped into required configuration from coils or reels.

separator – Pertaining to wire and cable, a layer of insulating material such as textile, paper, Mylar, etc., which is placed between a conductor and its dielectric, between a cable jacket and the components it covers, or between various components of a multiple-conductor cable. It can be utilized to improve stripping qualities and/or flexibility, or can offer additional mechanical or electrical protection to the components it separates.

separable insulted connector – An insulated device to facilitate cable connections and separations.

serial interface – An interface which requires serial transmission, or the transfer of information in which the bits composing a character are sent sequentially. Implies only a single transmission channel.

series circuit – A circuit in which the components are arranged end to end to form a single path for current.

server – A processor which provides a specific service to the network. Examples of servers are as follows:
routing server – connects nodes and networks of like architectures;
gateway server – connects nodes and networks of different architectures by performing protocol conversions; and
terminal server, printer serve and file server – provides an interface between compatible peripheral devices on a LAN.

SEU – Service Entrance Underground Cable 300 volts.

SEW, SEWF – Silicone Rubber insulated equipment wire (C.S.A.)

SF – Silicone rubber insulated fixture wire, solid or 7 strand conductor, 200C.

SFF - Same as SF, except flexible stranding 150C.

SFT (Simple File Transfer) – A Net/One file transfer service offered by Ungermann-Bass which allows a user to transfer files between dissimilar host computers.

SG – Same as SW except with ground wire (C.S.A.)

SGO – Same as SWO except with ground wires (C.S.A.)

SH-A – Portable mine power cable, three or four individually shielded conductors. 5KV.

SH-B – Same as SH-A, except shield is overall

SH-C – Same as SH-B, but with grounding conductors.

SH-D – Same as SH-A, but with grounding conductors.

shield – A sheet, screen or braid of metal, usually copper, aluminum, or other conducting material placed around or between electric circuits or cables or their components, to contain any unwanted radiation, or to keep out any unwanted interference.

shield coverage – See shield percentage.

shielding, power cable – A conducting layer, applied to control the dielectric stresses within tolerable limits and minimize voids.

Short - A low resistance path that results in excessive current flow and often in damage.

Shovel Cable – Normally SHD-GC type for high voltage (2 to 25kV) power supply to mobile equipment.

Shunt - A very low resistance component used to divert a proportion of the current.
SI – An international system of standardized units of measurement.

SIC (Specific Inductive Capacitance) – See dielectric constant.

signal – Any visible or audio indication which can convey information. Also, the information conveyed through a communication system.

Signal-to-noise-ratio – A ratio of the amplitude of a desired signal to the amplitude of noise, usually expressed in db.

silicone – A material made from silicon and oxygen. Can be in thermosetting elastomer or liquid form. The thermosetting elastomer form is noted for high heat resistance.

single cable - A one-cable system in broadband LANs in which a portion of the bandwidth is allocated for send signals, and a portion for receive signals, with a guard band between to provide isolation from interference.

single mode – Optical fiber in which only one mode of light can propagate.

SIS – Switchboard wiring made with cross linked polyethylene insulation.

SJ – Junior hard service, rubber-insulated pendant or portable cord. Same construction as type S, but 300V.

SJO – Same as SJ, but oil-resistant outer jacket. 300V, 60C.

SJOO – Same as SJO but with oil-resistant insulation as well as an oil-resistant jacket.

SJT – Junior hard service thermoplastic or rubber-insulated conductors with overall thermoplastic jacket. 300V.

SJTO – Same as SJT but with oil-resistant thermoplastic outer jacket.

SJTOO – Same as SJTO but with oil-resistant insulation.

Skin effect – The tendency of alternating current, as its frequency increases, to travel only on the surface of a conductor.

S meter – An instrument to measure signal strength.

S/N – Signal-to-Noise-Ratio

SNA – (Systems Network Architecture) The network architecture developed by IBM.

SNM – Shielded non-metallic sheathed cable.

SO –Hard service cord, same construction as type S except oil-resistant thermoset jacket, 600V.

soft-wire – wire that has been drawn or rolled to final size and then heated (annealed) to remove the effects of cold working.

solid conductor – a conductor consisting of one wire.

SOO – Same as SO but with oil-resistant insulation.

SOOW-A – A UL cable type. Portable cord and control cable. 600V. Same as SOO but UL Listed for outdoor use.

SOW – Water resistant thermoset jacketed portable cord. C.S.A. approved for outdoor use.

Spacer Cable – A type of overhead power distribution cable. Spacing is accomplished by ceramic or plastic hangers suspended from a support messenger.

SPC – Statistical Process Control.

splice – The physical connection of two or more conductors to provide electrical continuity. See joint.

splitter – A passive device used in a cable system to divide the power of a single input into two or more outputs of lesser power. Can also be used as a combiner when two or more inputs are combined into

a single output.

SP-1 – All thermoset, parallel-jacketed, two-conductor light duty cord for pendant or portable used in damp locations, 300V.

SP-2 - Same as SP-1, but heavier construction, with or without third conductor for grounding purposes, 300V.

SP-3 - Same as SP-2, but heavier construction for refrigerators or room air conditioners, 300V.

squirrel cage motor – An induction motor having the primary winding (usually the stator) connected to the power and a current is induced in the secondary cage winding (usually the rotor).

SR – Silicone rubber cable, 600V, 125C.

SR-AW – A cable with flexible, nickel-plated copper conductor , silicone rubber insulation, glass braid, 600V, 200C.

SRC - A cable with solid copper conductor, silicone rubber insulation, glass braid, 600V, 125C.

SRD – Portable range or dryer cable, 3 or 4 rubber insulated conductors. Neoprene or rubber jacket. Sizes 10 through 4, 300V.

SRG – A cable with ozone resistant silicone rubber insulation with braided glass yarn impregnated with flame, heat and moisture resistant finish. 150/200C 600V appliance and motor lead wire.

SRGK – A cable with ozone resistant silicone rubber insulation with braided glass yarn conductor jacket. Cable core of insulated conductors shielded or unshielded, and an overall jacket of braided K-fiber impregnated with flame, heat and moisture resistant finish. 150/200C 600V multi conductor cable.

SRH – Silicone rubber insulated, asbestos braid.

SRHV – same construction as SRIR with heavier insulation, voltage limit 2500V.

SRI – A single conductor hook-up wire with plastic insulation. For Navy use.

SRK – A cable with ozone resistant silicone rubber insulation with an overall jacket of braided K-fiber impregnated with flame, heat and moisture resistant finish. 200C 600V fixture and power cable.

ST – Hard service cord, jacketed, same as type S except thermoplastic construction. 600V, 60C to 105C.

standard – A set of rules or protocols that describe how a device should be manufactured so it will maintain interoperability (compatibility) with others of the same type from different manufacturers.

standing wave – The stationary pattern of waves produced by two waves of the same frequency traveling in opposite directions on the same transmission line. The existence of voltage and current maxima and minima along a transmission line is a result of reflected energy from an impedance mismatch.

standing wave ratio (swr) – A ratio of the maximum amplitude of standing wave stated in current of voltage amplitudes.

star – A network topology consisting of one central node with point-to-point links to several other nodes. Control of the network is usually located in the central node or switch, with all routing of network message traffic performed by the central node.

static charge – An electrical charge that is bound to an object. An unmoving electrical charge.

station – A network node.

stay cord – A component of a cable, usually a high tensile textile, used to anchor the cable ends at their points of termination and to keep any pull on the cable from being transferred to the electrical connections.

stiffness – as applied to copper, the property of a conductor that causes it to resist permanent deformation by bending.

STO – Same as ST but with oil-resistant thermoplastic outer jacket, 600V, 60C.

STOO – Same as STO but with oil-resistant insulation.

stop-joint – A splice which is designed to prevent any transfer of dielectric fluid between the cables being joined.

STP – Shielded Twisted Pair. Two wires, usually loosely wound around each other to help cancel out any induced noise in balanced circuits. Multiple pairs of wires are contained in one sheath, and each wire pair is shielded by another sheath.

straight joint – A cable splice used for connecting two lengths of cable, each of which consists of one or more conductors.

strain gauge - A device for determining the amount of strain (change in dimension) when a stress is applied.

strain hardening – an increase in hardness and strength caused by plastic deformation at temperatures lower than the recrystallization range.

strand – one of the wires of any stranded conductor.

stranded conductor – a conductor composed of a group of wires, usually twisted , or of any combination of such groups of wires.

Stress Relief Cable – Cable used to relieve stresses in the process of welding pipe joints by inducing heat in pipe sections to be welded, flexible copper strand.

stress-relief cone (termination) – Mechanical element to relieve the electrical stress at a shielded cable termination; generally used at 5kV and above.

subchannel – A frequency subdivision created from the capacity of one physical channel by broadband LAN technology. Bands of frequencies of the same or different sizes are assigned to transmission of voice, data, or video signals. Actual transmission paths are created when each assigned band is divided, using FDM, into a number of subchannels.

sub-split – The most common form of transmission in the CATV industry. In the sub-split scheme, the bandwidth utilized to send toward the head-end (reverse direction) is much smaller, from approximately 5 MHz to 30 MHz, and the bandwidth utilized to transmit from the head-end (forward direction) is very large, from approximately 55 MHz to 300MHz. The guard band between forward and reverse directions (30 MHz to 55MHz) provides isolation from interference.

superconductors – Materials whose resistance and magnetic permeability are virtually zero at low temperatures.

suppressor – A device used to reduce or eliminate unwanted voltages in electric or electronic circuits. For example, a resistance conductor in, or a resistor in series with, a sparkplug cable, to suppress interference which would otherwise affect radio reception in and near the vehicle.

surge – A temporary and relatively large increase in the voltage or current in an electric circuit or cable. Also called transient.

SV – A UL cable type. Vacuum cleaner cord, two or three conductor, rubber insulated. Overall rubber jacket. For light duty in damp locations, 300V 60C.

SVO – A UL cable type. Same as SV except oil resistant thermoset jacket, 300V 60C.

SVT – AUL cable type. Same as SV except thermoplastic jacket. With or without third conductor for grounding purposes only 300V 60C or 90C.

SVTO – A UL cable type. Same as SVT, except with oil-resistant thermoplastic jacket, 60C.

SW – Rubber jacketed power supply cable (8 AWG to 2AWG) 600V (C.S.A.)

SWO – Same as SW except neoprene jacketed (C.S.A.)

SWT – Plastic jacketed power supply cable (*AWG to 2 AWG) 600V (C.S.A.)

SYN – Synchronous Idle. (In synchronous transmission). A control character used to maintain synchronization and as a time filling the absence of data. The sequence of two SYN characters in succession is used to maintain synchronization following each line turn-around.

synchronous transmission – Transmission in which there is a constant time between successive bits, characters, or events. The timing is achieved by sharing of clocking.

T – Thermoplastic vinyl, building wire, 60C.

TA – Solid or stranded single conductor switchboard wire, insulation is plastic with a covering of impregnated felted asbestos, outer covering is a flame resistant treated cotton braid, 600V, 90C.

TAA – Nickel or nickel clad copper stranded conductor, insulation is Teflon tape with a covering of felted asbestos, outer finish is asbestos braid.

tap – 1) Baseband – The component of a connector that attaches a transceiver to a cable. 2) Broadband – (Also called a directional tap or multitap) a passive device used to remove a portion of the signal power from the distribution line and deliver it onto the drop line.

taped splice – A joint with hand-applied tape insulation.

TBS – Solid or stranded single conductor switchboard wire, insulated with plastic, the outer covering is a flame resisting cotton braid, 600V, 90C.

TBWP – Solid or stranded single conductor, insulation is three cotton braids, saturated with weather resisting insulating compound, commonly known as triple braid weather-proof. No voltage rating.

TC – Tray cable, NEC Art. 340

T –Connector – A cable adapter that attaches a PC with a network interface module to the network.

TCP/IP – (Transmission Control Protocol/Internet Protocol) A protocol specification that conforms to the latest DOD ARPANET standard. The TCP/IP protocol module corresponds to layers three and four of the ISO protocol.

TDM – (Time Division Multiplexing) – A method utilizing channel capacity efficiently in which each node is allotted a small time interval, in turns, during which it may transmit a message or a portion of a message (for instance, a data packet). Nodes are given unique time slots during which they have exclusive command of the channel. The messages of many nodes are interleaved for transmission and then demultiplexed into their proper order at the receiving end.

TDMA – Time-Division Multiple Access. A high-speed, burst mode of operation that can be used to interconnect LANs; first used as a multiplexing technique on shared communication.

terminator – A resistive device used to terminate the end of cable or an unused tap into its characteristics impedance. The terminator prevents interference-causing signal reflections.

tensile strength – the maximum load per unit of original cross-sectional area that a conductor attains when tested in tension to rupture.

TEW - Canadian Standards Association type appliance wires. Solid or stranded single conductor, plastic-insulated, 105C, 600V.

TF – Fixture wire, thermoplastic-covered solid or 7 strands, 60C.

TFE – Teflon. (tetrafluoroethylene).

TFF – Same as TFF but with nylon outer jacket

TG – Flexible nickel or nickel-clad copper conductor, Teflon tape, glass braid, 200C.

TGGT – PTFE Teflon tape insulation with an insulation covering of wrapped glass yarn and an overall sheath of braided glass yarn impregnated with a moisture, heat, flame and fraying resistant compound. 600V, 250C appliance wire.

TGS – Solid or flexible copper, nickel-clad iron or copper, or nickel conductor. Teflon tape, silicone glass braid, 600V, 250C.

Thermal shock – Taking an electronic device from an elevated ambient temperature where it has stabilized and immersing it in a severely cold environment so that cooling of the device is extremely rapid.

THHN – 600V, 90C nylon jacketed building wire.

three-quarter-hard wire – as applied to aluminum, wire that has been processed to produce a strength approximately midway between that of half-hard wire and that of hard-drawn wire.

throughput – The total useful information processed or communicated during a specified time period. Expressed in bits per second or packets per second.

THW – Thermoplastic vinyl insulated building wire. Flame-retardant, moisture and heat resistant. 75C dry and wet locations.

THWN – Same as THW but with nylon jacket overall. 75C.

TIA – Telecommunication Industries Association.

tinned wire – See coated wire.

TKGT – PTFE Teflon taped insulation with an insulating covering of felted K-fiber yarn and an overall sheath of braided glass yarn impregnated with a moisture, heat, flame and fraying resistant compound. 250C, 600V apparatus and Motor Lead wire.

TNC – A threaded connector for miniature coax; TNC is said to be an abbreviation for threaded-Neill-Concelman. Contrast with BNC.

token passing – A mechanism whereby each device receives and passes the right to use the channel. Tokens are special bit patterns or packets, usually several bits in length, that circulate from node to node when there is no message traffic. Possession of the token gives a node exclusive access to the network for transmitting its message.

token ring – The token access procedure used on a network with sequential or ring topology.

TOP – Technical Office Protocol. An OSI profile designed for the technical and office LAN environment.

topology – 1) physical topology – The configuration of network nodes and links. Description of the physical geometric arrangement of the links and nodes that make up a network, as determined by their physical connections. 2) logical topology – Description of the possible logical connections between network nodes, indicating which pairs of nodes are able to communicate, whether or not they have a direct physical connection. Examples of network topologies are as follows:

Bus	Star
Ring	Tree

TP – A two conductor, #27, light duty cord with parallel rubber insulated tinsel conductors, for appliances with current loads of 50 watts or less, 125V.

TPE – Thermoplastic Elastomer

TPO – same as TP, with extra flexible tinsel conductors, neoprene jacket.

transition splice – A cable splice which connects two different types of cable.

transceiver – A device required in baseband networks which takes the digital signal from a computer or terminal and imposes it on the baseband medium.

transceiver cable – Cable connecting the transceiver to the network interface controller allowing nodes to be placed away from the baseband medium.

tree wire – A solid or stranded wire usually insulated with high density polyethylene.

trellis-code modulation (TCM) – A hardware protocol that transmits an additional bit each baud. The extra bits are used by the receiving modem to predict whether the data received is error-free.

trolley wire – a round or shaped solid bare, hard conductor ordinarily used to supply current to motors through traveling current collectors.

trunk cable – A main cable used for distribution of signals over long distances throughout a cable system.

TR-XLP – Water tree Retardant Cross-linked polyethylene.

TT – Single or multi-conductor cable, the insulation is plastic, the outer covering is plastic. For aerial or duct.

Turnkey system – Any system that is completely assembled and tested and that will be completely operational by turning it "on."

TV Camera Cable – Multi-conductor (often composite) to carry power for camera , lights, maneuvering motors, intercom signals to operators, coaxials, etc. Usually heavy duty jacketed.

TW – Thermoplastic vinyl-jacketed building wire, moisture resistant 60C.

twin-lead – a transmission line having two parallel conductors separated by insulating material. Line impedance is determined by the diameter and spacing of the conductors and the insulating material and is usually 300 ohms for television receiving antennas. Also called balanced transmission line and twin-line.

TWX – Teletypewriter Exchange Service. A network of teleprinters connected over a North American public switched network; uses ASCII code.

U

U-Bend test – A cable test in which the insulation is tested for resistance to corona and ozone.

UF – Thermoplastic underground feeder or branch circuit cable.

UHF – Ultrahigh frequency, the band extending from 300 to 3,000 mHz as designated by the Federal Communications Commission.

UL – Underwriters' Laboratories, Inc.

ultrasonic cleaning – Immersion cleaning aided by ultrasonic waves which cause microagotation.

ultrasonic detector – A device that detects the ultrasonic noise such as that produced by corona or leaking gas.

ultraviolet – Radiant energy within the wavelength range 10 to 380 nanometers: invisible, filtered by glass, causes suntan.

unbalanced line – A transmission line in which voltages on the two conductors are unequal with respect to ground, e.g., coaxial cable.

unidirectional conductor – See concentric-lay conductor.

unilay – More than one layer of helically laid wires with the direction of lay and length of lay the same for all layers. See concentric-lay conductor.

USE – Underground service entrance cable, rubber-insulated, neoprene or XLP jacketed.

UTP – Unshielded Twisted Pair. Two wires, usually twisted around each other to help cancel out any induced noise in balanced circuits. An unshielded twisted pair of cable usually contains four pairs of wire in a single cable jacket.

V

V – Volts. The SI unit of electrical potential difference. It is the difference in potential between two points of a conducting wire carrying a constant current of one ampere when the power dissipated between these two points is equal to one watt.

V – Varnished cambric insulation.

VA – Volt-ampere. A designation of power in terms of volts and amperes.

Var – A unit of reactive power that means volt-amperes, reactive.

Varmeter - An instrument used by power companies to measure the kvar consumption.

V band – A band of frequencies between 46 and 56 gigahertz.

VC – Varnished-cambric insulation.

VCB – Cable with the conductor or conductors insulated with varnished cambric, outer covering is treated cotton braid.

VDE – Association of German Electrical Engineers.

velocity of propagation – The transmission speed of an electrical signal down a length of cable compared to speed in free space. Usually expressed as a percentage.

VG – Varnished-glass tape over a flexible copper conductor. Varnished glass or nylon braid, 600V or 3000V, 130C.

VHF – very high frequency, the band extending from 30 to 300mHz (television channels 2 to 13 and most FM radio) as designated by the Federal Communications Commission.

virtual circuit – Provision of a circuit-like service by the software protocols of a network, enabling two end points to communicate as though via a physical circuit.

viscosity – Internal friction or resistance to flow of a liquid: the constant ratio of shearing stress to rate of shearing stress to rate of shear.

VLF – Very low frequencies, the band extending from 10 to 30 kHz, as designated by the Federal Communications Commission.

volt – A unit of electrical "pressure." One volt is the amount of pressure that will cause one ampere of current in one ohm of resistance.

voltage – Electrical potential or electromotive force expressed in volts.

voltage, corona extinction – The minimum voltage that sustains corona, determined by applying a corona producing voltage, then decreasing the voltage until corona is extinct.

voltage divider - A network consisting of impedance elements connected in series to which a voltage is

applied and from which one or more voltages can be obtained across any portion of the network.

voltage drop – The voltage developed across a conductor by the current and the resistance or impedance of the conductor.

voltage, induced – A voltage produced in a conductor by a change in magnetic flux linking that path.

voltage to ground – The voltage between an energized conductor and earth.

volume resistivity – the resistance in ohms of a body of unit length and unit cross-sectional area.

Volume unit – The reference level for the volume unit is 0.001 watt at 1,000 Hz in a 600 ohm line.

vulcanize – To cure by a chemical reaction that induces extensive changes in the physical properties of a rubber or plastic. It is brought about by reacting it with sulphur and/or other suitable agents. The changes in physical properties include decreased plastic flow, reduced surface tackiness, increased elasticity, much greater tensile strength, and considerably less solubility. The process is hastened by heat and pressure. The method of curing thermosetting materials – rubbers, XLP, etc.

V.22bis – The worldwide standard for full-duplex 9,600-bps modems, adopted in 1984. A V.32 modem must modulate signals at 9,6000 bps by using QAM, it must transmit in full-duplex mode by using echo cancellation, and it must be able to adjust its speed to match that of the answering modem.

V.42 – A worldwide standard for error detection in modems, adopted in 1988.

V.42bis - A worldwide standard for data compression in modems, adopted in 1989.

VW-1 – Vertical wire flame test…formerly designated as FR1. A UL fire rating given single conductor cables. Test is described in UL Standard 1581.

W

W – Symbol for watt or wattage.

W – Heavy duty portable power cable, one to six conductors, 660V, without grounds.

WAN – Wide Area Network. A network which uses common carrier-provided lines; contrast with LAN.

waterblocked cable – A multiconductor cable having interstices filled with water blocking compound to prevent water flow or wicking.

Water Cooled Leads – Furnace Cables-High Energy Cables. Usually welding cable strands cabled with hose core for carrying coolant – used in flex-heavy duty welding equipment, electric furnace applications, plating and various chemical processes.

WATS – Wide Area Telephone Service.

watt – A unit of electrical power. One watt is equivalent to the power represented by one ampere of current under a pressure of one volt in a dc circuit.

waveform – A graphical representation of a varying quantity. Usually, time is represented on the horizontal axis, and the current or voltage value is represented on the vertical axis.

wave front – 1) That portion of an impulse (in time or distance) between the 10% point and the point at which the impulse reaches 90% of crest value, 2) the rising part of an impulse wave.

wavelength – The distance between the nodes of a wave. The ratio of the velocity of the wave to the frequency of the wave.

wave shape representation – The designation of current voltage by a combination of two numbers: For other than rectangular impulses: 1) virtual duration of the wave front in microseconds, 2) time in microseconds from virtual zero to the instant at which one-half of the crest value is reached on the tail. For rectangular impulses: 1) minimum value of current or voltage, 2) duration in microseconds.

Weibull Distribution – See distribution, statistical analysis.

weight resistivity – the resistance in ohms at a specified temperature of a body of uniform cross section and of unit weight and unit length.

welding – joining the ends of two wires, rods, or groups of wires 1) by fusing, using the application of heat or pressure or both, by means of a flame torch, electric arc, or electric current or 2) by cold pressure.

Wheatstone bridge – A device used to measure dc resistance. See bridge.

wire – a rod or filament of drawn or rolled metal whose length is great in comparison with the major axis of its cross section.

withstand test voltage – The voltage that the device must withstand without flashover, disruptive discharge, puncture, or other electric failure when voltage is applied under specified conditions.

WP – Weatherproof construction for overhead wires.

X

X – Symbol for reactance.

X band – A band of frequencies between 5,2000 and 10,000 megahertz.

XHHW – High temperature (75C Wet or 90C Dry) cross-linked polyethylene jacketed small diameter building wire.

XHHW-2 - High temperature (90C Wet or Dry) cross-linked polyethylene jacketed small diameter building wire.

XLP – Cross-linked polyethylene. Also written XLPE.

X-ray – Penetrating short wavelength electromagnetic radiation created by electron bombardment in high voltage apparatus: produce ionization when they strike certain materials.

X.25 – A CCITT standard which defines the interface between a PDN and a packet-node user device (DTE); also defines the services that these user devices can expect from the X.25 PDN including the ability to establish virtual circuits through a PDN to another user device, to move data from one user device to another, and to destroy the virtual circuit when through.

X.28 – Defines the interface between PADs and nonpacket DTEs or other PADs.

X.29 – Defines the interface between PADs and packetmode Dtes or other PADs.

X.3 – Describes the functions of the PAD and the various parameters which can be used to specify its mode of operation.

Y

yield strength – The point at which a substance changes from elastic to viscous.

Z

Z – Symbol for impedance.

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