# Constant Cable TELECOMMUNICATIONS



# **Telecommunications Cables**

This catalog contains in-depth information on the most comprehensive line of Telecommunications cables for the distribution of telecommunication signals for outside use.

The product and technical sections have been developed with an easy-to-use "spec-on-a-page" format. It features the latest information on Telecommunications cables, from applications and construction to detailed technical and specification data. There's also a numerical part number index.

Our cables are readily available through our network of authorized stocking distributors and distribution centers.

We are dedicated to customer service and satisfaction—so call our team of professionally trained sales personnel to meet your application needs.



All information in this catalog is presented solely as a guide to product selection and is believed to be reliable. All printing errors are subject to correction in subsequent releases of this catalog. Although General Cable has taken precautions to ensure the accuracy of the product specifications at the time of publication, the specifications of all products contained herein are subject to change without notice.

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*Now one industry leader focuses its worldwide resources on delivering maximum value to customers.* It's the cost-effective advantage of a single resource, a single company that provides the broadest product range, the highest level of commitment to customer and technical support, the most cost-effective manufacturing and distribution, and the most responsive customer-first service. In today's highly competitive worldwide markets, General Cable provides the single-source solution with benefits that go straight to your bottom line. Ask your representative about other General Cable products.





CAROL Gen*Speed* 



# **Specialty Cables**

General Cable manufactures a broad range of specialty cables that meet the exacting specifications for original equipment manufacturers (OEMs), military, transit, offshore and marine shipboard, nuclear, and mining applications. General Cable's engineered Brand Rex and Anaconda<sup>®</sup> Brand wire and cable solutions provide great lifecycle performance and reliability—meeting customer applications requirements today, while setting tomorrow's standards.

# **Specialty Wire Harnesses**

We supply application-specific and custom-designed cable, harnesses and assemblies for a wide variety of OEM applications, including business machines, material handling equipment, factory automation, medical equipment and the automotive aftermarket. General Cable is a global leader in the manufacture of automotive wire and cable—from ignition wire sets and single leads to bulk ignition wire, primary wire and battery starter cable.

# **Communications Cables**

# **Data Communications Cables**

Our Gen*SPEED*<sup>®</sup> Brand products are on the job wherever enhanced performance is critical from 10 Gigabit Ethernet, token ring and broadband applications to patch panels, communications closets and plenum applications. We offer one of the most comprehensive lines of enhanced high-speed Category products, including PanGen<sup>™</sup> structured cabling system solutions.

# **Fiber Optic Cables**

We provide a full menu of NextGen<sup>®</sup> Brand fiber optic cables for data communications and voice and video networks. Our products range from tight buffer and armored products for military applications to loose tube and hybrid cables for communications networks. We also offer advanced Blolite<sup>®</sup> blown fiber systems for Local Area Networks and campus applications.

# **Telecommunications Cables**

Our broad range of industry-standard General Cable outside plant wire and cable products ensures reliable, cost-effective performance. We provide air core, filled core and specialty wire products for aerial, buried and duct applications.

# **V** General Cable



# **Energy Cables**

# Underground High-Voltage and Extra-High-Voltage Cables

General Cable's complete line of Silec<sup>®</sup> insulated high- and extra-high-voltage underground energy cables, from 63kV up to 500kV, and our state-ofthe-art accessories—such as pre-molded joints and terminals—enable us to provide turnkey design and engineering services for the global, systemsengineered, electric utility market.

# Bare Overhead High-Voltage Transmission and Distribution Cables

Our BICC<sup>®</sup> Brand cables satisfy the varied and specialized demands of the electric utility marketplace. Our TransPowr<sup>®</sup> bare aluminum overhead conductors are available in standard ACSR, specialized T-2 designs and high-temperature ACSS/TW designs. Our new ACCC/TW conductors feature an innovative composite core construction which possesses high temperature and increased strength characteristics.

# Low- and Medium-Voltage Distribution Cables

General Cable's extensive line of BICC<sup>®</sup> Brand PowrServ<sup>®</sup> and EmPowr<sup>®</sup> copper and aluminum cables serve the total distribution needs of electric utilities, rural electric co-ops and the public power market for both traditional and renewable energy resources.

# **Industrial & Specialty Cables**

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# **Cord and Cordset Products**

General Cable's Carol<sup>®</sup> Brand is the most recognized name in flexible cords for temporary power. Our extensive line includes portable cord, cordsets, portable power cable and premium-grade cable for commercial and industrial applications.

# **Electronic Cables**

Our Carol<sup>®</sup> Brand products fulfill the complete wire and cable requirements of the fast-changing electronics, sound and security marketplaces. We offer hookup wire; communications cable; computer, coaxial and microphone cables; and special designs for security systems, fire alarms, and audio, video and digital broadcasts.

# **Industrial Cables**

General Cable's industrial instrumentation, power and control cables serve an extensive range of markets, including power generation, refining and petrochemical, natural gas production, steel, pulp and paper, and factory automation.

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# **Air Core Cables**

Plastic insulated Air Core Cables provide a broad range of pair sizes for the distribution of telecommunication signals for outside use. These cables can be installed in underground ducts or strung between poles, lashed to a steel messenger or equipped with a built-in messenger wire.

An industry-standard color-coding system provides full identification of every pair through the use of 10 different insulating colors and nonhygroscopic unit binders.

Different optional sheath designs provide electrical shielding necessary for proper grounding and mechanical protection against rodents and other physical damage. A black, weatherresistant polyethylene jacket is used on all constructions for protection against long-term outdoor exposure. The temperature range that Telecommunications cable can withstand is: For storage and operation: -45°C to 80°C -49°F to 176°F For installation: -30°C to 60°C -22°F to 140°F

All cables are equipped with surface-printed identification and sequential footage markings.

The cable design for 19, 22 and 24 AWG sizes has the transmission performance capability of  $100\Omega$ , Category 3 Backbone UTP Cables specified in TIA/EIA-568-B.

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# Spec. 2003

Air Core Cable RDUP (RUS) PE-22 AL

# **Core Construction:**

# **Conductors:**

• Solid, annealed copper; sizes 19, 22 and 24 AWG

# Insulation:

• Solid, high density polyethylene, colorcoded in accordance with telephone industry standards

### **Twisted Pairs:**

 Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

# Core Assembly:

- 25 pairs and less: pairs are assembled together in a single group
- More than 25 pairs: pairs are arranged in groups, each group having a colorcoded unit binder

# Core Wrap:

Non-hygroscopic dielectric tape applied longitudinally with an overlap

# Sheath:

# Aluminum Shield:

 Corrugated, copolymer coated, 0.008" aluminum tape applied longitudinally with an overlap

### Jacket:

• Black, linear low density polyethylene

# Application(s):

- For aerial installation by attachment to a support strand
- For underground installation when placed in a duct (pressurization is recommended)

# **Compliance:**

• RDUP (RUS) Specification PE-22

# **Packaging:**

- Standard lengths are shipped on nonreturnable wood reels
- Non-standard packaging is available upon reques



# Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD LENGTH (FT)	
7527757	6/19	0.49	110	5000	
7527765	12/19	0.62	180	5000	
7527781	25/19	0.79	320	5000	
7527799	50/19	1.10	590	2500	
7527005	6/22	0.40	70	5000	
7527013	12/22	0.49	110	5000	
7527021	25/22	0.63	190	5000	
7527039	50/22	0.90	325	5000	
7527054	100/22	1.10	595	2500	
7527062	200/22	1.40	1140	2500	
7527112	6/24	0.37	55	5000	
7527120	12/24	0.43	80	5000	
7527138	25/24	0.54	135	5000	
7527146	50/24	0.67	225	5000	
7527161	100/24	0.88	400	5000	
7527187	200/24	1.20	745	2500	
7527195	300/24	1.40	1090	2500	
7527203	400/24	1.60	1430	2500	
7527211	600/24	1.90	2120	1250	
7527229	900/24	2.30	3110	1250	

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# Figure 8 Air Core Cable

RDUP (RUS) PE-38 AL



# Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD Length (FT)
2012020	6/19	0.49	260	5000
2012021	12/19	0.62	330	5000
2012023	25/19	0.81	480	5000
2012010	6/22	0.40	220	5000
2012011	12/22	0.49	260	5000
2012000	25/22	0.61	335	5000
2012001	50/22	0.81	485	5000
2012015	6/24	0.37	205	5000
2012016	12/24	0.43	230	5000
2012004	25/24	0.54	285	5000
2012005	50/24	0.67	375	5000
2012006	100/24	0.90	560	5000

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# Air Core Cables

# Spec. 2003-F8

# **Core Construction:**

### **Conductors:**

 Solid, annealed copper; sizes 19, 22 and 24 AWG

# Insulation:

• Solid, high density polyethylene, colorcoded in accordance with telephone industry standards

### **Twisted Pairs:**

 Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

### Core Assembly:

- 25 pairs and less: pairs are assembled together in a single group
- More than 25 pairs: pairs are arranged in groups, each group having a colorcoded unit binder

### Core Wrap:

• Non-hygroscopic dielectric tape applied longitudinally with an overlap

# Figure 8 Sheath:

# **Aluminum Shield:**

• Corrugated, copolymer coated, 0.008" aluminum tape applied longitudinally with an overlap

### Support Messenger:

• A 1/4", 7 strand, extra high strength galvanized steel wire, fully flooded for corrosion protection

### Jacket:

 Black, linear low density polyethylene is jacketed in an integral extrusion with the shielded core and support messenger to form a "Figure 8" configuration

# Application(s):

• Intended for aerial installation

### **Compliance:**

• RDUP (RUS) Specification PE-38

### Packaging:

- Standard lengths are shipped on nonreturnable wood reels
- Non-standard packaging is available upon request

# Air Core Cables

# Air Core ALPETH Cable

BELL SYSTEM TYPE BHBA (19 AWG) BKMA (24 AWG) BHAA (22 AWG) BKTA (26 AWG)

# **Core Construction:**

# **Conductors:**

• Solid, annealed copper; sizes 19, 22, 24 and 26 AWG

# Insulation:

• Solid, high density polyethylene, colorcoded in accordance with telephone industry standards

# **Twisted Pairs:**

 Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

# **Core Assembly:**

- 25 pairs and less: pairs are assembled together in a single group
- More than 25 pairs: pairs are arranged in groups, each group having a colorcoded unit binder
- 1200 pairs and larger are mirror image color code

# Core Wrap:

Non-hygroscopic dielectric tape applied longitudinally with an overlap

# ALPETH Sheath:

# **Aluminum Shield:**

 Corrugated 0.008" aluminum tape applied longitudinally with an overlap

# Jacket:

• Black, linear low density polyethylene

# Application(s):

 Intended for aerial installation by attachment to a support strand

# **Compliance:**

 Telcordia (Bellcore) Specification GR-421-CORE

# Packaging:

- Standard lengths are shipped on returnable steel reels or on nonreturnable wood reels when requested
- Non-standard packaging is also available



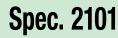
# **Nominal Cable Data**

CATALOG NUMBER	PAIRS AWG	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD LENGTH (FT)
7506967	25/19	0.79	320	5000
7506975	50/19	1.10	595	3000
7506983	100/19	1.50	1110	3000
7506991	200/19	1.90	2150	1000
7510506	300/19	2.40	3190	1000
7506876	25/22	0.61	185	5000
7506884	50/22	0.79	320	3000
7506892	100/22	1.10	595	3000
6968770	200/22	1.50	1120	3000
7506900	300/22	1.70	1650	1000
6968762	400/22	1.90	2170	1000
6987275	600/22	2.30	3220	1000
6937817	900/22	2.80	4760	700
7506918	25/24	0.52	130	5000
7506926	50/24	0.65	220	3000
6937064	100/24	0.86	395	3000
6964803	200/24	1.10	735	1000
6964811	300/24	1.40	1070	1000
6964795	400/24	1.50	1400	1000
6964787	600/24	1.90	2080	1000
6983381	900/24	2.20	3050	1000
6937833	1200/24	2.50	4050	1000
7506777	1500/24	2.80	5020	800
6937841	1800/24	3.10	5990	800
7503485	400/26	1.30	905	1000
6987218	600/26	1.50	1320	1000
7508252	900/26	1.80	1970	1000
6937858	1200/26	2.10	2600	1000
6937866	1500/26	2.30	3220	1000
7506785	1800/26	2.50	3840	1000
6937767	2100/26	2.70	4460	1000

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# Telecommunications



# Figure 8 Air Core ALPETH Cable BELL SYSTEM TYPE BHBS (19 AWG) BKMS (24 AWG)

BHAS (22 AWG) BKTS (26 AWG)



### Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD LENGTH (FT)
7516461	25/19	0.88	480	5000
7516479	50/19	1.20	745	2500
7516487	25/22	0.70	345	5000
7516495	50/22	0.88	480	5000
7517261	100/22	1.20	750	2500
7517279	25/24	0.63	290	5000
7517287	50/24	0.76	380	5000
7517303	100/24	0.97	555	5000
7517329	200/24	1.20	885	2500

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# **Core Construction:**

### **Conductors:**

• Solid, annealed copper; sizes 19, 22, 24 and 26 AWG

# Insulation:

• Solid, high density polyethylene, colorcoded in accordance with telephone industry standards

#### **Twisted Pairs:**

 Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

### Core Assembly:

- 25 pairs and less: pairs are assembled together in a single group
- More than 25 pairs: pairs are arranged in groups, each group having a colorcoded unit binder

#### Core Wrap:

• Non-hygroscopic dielectric tape applied longitudinally with an overlap

# Figure 8 Alpeth Sheath:

### Aluminum Shield:

• Corrugated 0.008" aluminum tape applied longitudinally with an overlap

### Support Messenger:

• A 1/4", 7 strand, extra high strength galvanized steel wire, fully flooded for corrosion protection

### Jacket:

 Black, linear low density polyethylene is jacketed in an integral extrusion with the shielded core and support messenger to form a "Figure 8" configuration

### Application(s):

• Intended for aerial installation

### **Compliance:**

 Telcordia (Bellcore) Specification GR-421-CORE

### Packaging:

- Standard lengths are shipped on returnable steel reels or on nonreturnable wood reels when requested
- Non-standard packaging is also available

# Air Core Cables

Spec. 2102

Spec. 2108

# Figure 8 Air Core ALPETH-GP Cable

BELL SYSTEM TYPE BHBP (19 AWG) BKMP (24 AWG) BHAP (22 AWG) BKTP (26 AWG)

# Core Construction:

# **Conductors:**

• Solid, annealed copper; sizes 19, 22, 24 and 26 AWG

# Insulation:

• Solid, high density polyethylene, colorcoded in accordance with telephone industry standards

# **Twisted Pairs:**

 Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

# **Core Assembly:**

- 25 pairs and less: pairs are assembled together in a single group
- More than 25 pairs: pairs are arranged in groups, each group having a colorcoded unit binder

# Core Wrap:

• Non-hygroscopic dielectric tape applied longitudinally with an overlap

# Figure 8 ALPETH-GP Sheath:

# Aluminum Shield:

• Corrugated, 0.008" aluminum tape applied longitudinally with an overlap

# First Jacket:

• Black, linear low density polyethylene jacket over the aluminum tape

# Steel Tape:

 Corrugated, 0.006" steel tape flooded on both sides applied longitudinally over the first jacket with an overlap

# Support Messenger:

• A 1/4", 7 strand, extra high strength galvanized steel wire, fully flooded for corrosion protection

# **Outer Jacket:**

• Black, linear low density polyethylene is applied in an integral extrusion over the steel tape and support messenger to form a "Figure 8" configuration

# Application(s):

 Intended for aerial installation where additional mechanical protection is required

# **Compliance:**

 Telcordia (Bellcore) Specification GR-421-CORE

# Packaging:

- Standard lengths are shipped on returnable steel reels or on nonreturnable wood reels when requested
- Non-standard packaging is also available

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# Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD LENGTH (FT)
7517394	25/19	1.10	675	5000
7517402	50/19	1.40	1000	2500
7517410	25/22	0.95	505	5000
7517428	50/22	1.10	680	5000
7517444	100/22	1.40	1010	2500
7517451	25/24	0.88	440	5000
7517469	50/24	1.00	555	5000
7517485	100/24	1.20	775	5000
7517501	200/24	1.50	1160	2500
2018023	300/24	1.70	1585	2500

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# Air Core Bonded PASP Cable

BELL SYSTEM TYPE BHBH (19 AWG) BKMH (24 AWG) BHAH (22 AWG) BKTH (26 AWG)



#### **Nominal Cable Data** CATALOG PAIRS 0.D. WFIGHT **STANDARD** (INCHES) NUMBER AWG (LBS/MFT) LENGTH (FT) 7502180 25/19 0.90 440 5000 7502198 50/19 3000 1.20 750 7502214 3000 100/19 1.60 1365 7502230 200/19 2.10 2475 1000 7502248 300/19 2.50 3640 1000 7503543 25/22 0.72 280 5000 7503550 50/22 0.90 445 3000 7503576 100/22 1.20 750 3000 7503592 200/22 1.60 1360 1000 7503600 300/22 1.80 1940 1000 7503618 400/22 2.10 2500 1000 7503626 600/22 2.50 3665 1000 7503634 900/22 3.00 5280 700 5000 7503659 25/24 0.64 205 7503667 50/24 0.77 320 3000 7503683 3000 100/24 0.98 525 7503709 200/24 905 1000 1.30 7503717 300/24 1.50 1285 1000 7503725 400/24 1.70 1675 1000 7502073 600/24 2.00 2410 1000 7502040 900/24 2.40 3465 1000 7502081 1200/24 2.70 4550 900 7502065 1500/24 3.00 5580 900 7502057 1800/24 3.30 6595 800 7503816 400/26 1.40 1100 1000 7502024 600/26 1.70 1605 1000 7502032 2.00 2300 1000 900/26 7502099 1000 1200/26 2.20 2985 7503824 1500/26 2.40 3655 1000 7503832 1800/26 4325 1000 2.60 7503840 2100/26 2.80 4960 900

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# Air Core Cables

# Spec. 2107

# **Core Construction:**

### Conductors:

• Solid, annealed copper; sizes 19, 22, 24 and 26 AWG

### Insulation:

· Solid, high density polyethylene, colorcoded in accordance with telephone industry standards

### Twisted Pairs:

· Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

### Core Assembly:

- 25 pairs and less: pairs are assembled together in a single group
- More than 25 pairs: pairs are arranged in groups, each group having a colorcoded unit binder
- 1200 pairs and larger are mirror image color code

### Core Wrap:

• Non-hygroscopic dielectric tape applied longitudinally with an overlap

# Bonded PASP Sheath:

### Inner Jacket:

• Black, linear low density polyethylene jacket over the core wrap

# Aluminum Shield:

• Corrugated, 0.008" aluminum tape applied longitudinally

# Steel Shield:

• Corrugated, copolymer coated, 0.006" steel tape applied longitudinally over the aluminum tape with an overlap

### **Outer Jacket:**

• Black, linear low density polyethylene jacket bonded to the coated steel

# Application(s):

 Intended for pressurized direct buried installation in situations in which resistance to lightning and mechanical damage is required

# Compliance:

• Telcordia (Bellcore) Specification GR-421-CORE

# Packaging:

- · Standard lengths are shipped on returnable steel reels or on nonreturnable wood reels when requested
- Non-standard packaging is also available

# Air Core Foam Skin Bonded STALPETH Cable

# Telecommunications

# Spec. 2106

BELL SYSTEM TYPE DCAZ (22 AWG) DCTZ (26 AWG) DCMZ (24 AWG)

# **Core Construction:**

# **Conductors:**

• Solid, annealed copper; sizes 22, 24 and 26 AWG

# Insulation:

• Dual insulation consisting of an inner layer of foamed polyolefin surrounded by a solid polyolefin skin, color-coded in accordance with telephone industry standards

# **Twisted Pairs:**

 Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

# Core Assembly:

- 3600 pairs and less: made up of 100 pair super-units consisting of four (4) 25 pair sub-units
- 4200 pair design: made up of 300 pair super-units consisting of twelve (12) 25 pair sub-units
- Each group is individually identifiable by color-coded unit binders
- All sizes are mirror image color code

# Core Wrap:

 Non-hygroscopic dielectric tape applied longitudinally with an overlap

# **Bonded STALPETH Sheath:**

# **Aluminum Shield:**

• Corrugated, 0.008" aluminum tape applied longitudinally

# **Steel Shield:**

 Corrugated, copolymer coated, 0.006" steel tape applied longitudinally over the aluminum tape with an overlap

# **Outer Jacket:**

• Black, linear low density polyethylene jacket bonded to the coated steel

# Application(s):

- Intended for pressurized urban underground duct installation
- Designed for large pair-count subscriber-serving cables leaving Central Offices where duct congestion is a prime concern

# **Compliance:**

 Telcordia (Bellcore) Specification GR-421-CORE

# Packaging:

- Standard lengths are shipped on returnable steel reels or on nonreturnable wood reels when requested
- Non-standard packaging is also available

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# **Nominal Cable Data**

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CATALOG NUMBER	PAIRS AWG	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD LENGTH (FT)
2010083	900/22	2.5	4570	1000
2010084	1200/22	2.9	6030	1000
2010078	600/24	1.7	2020	1000
2010079	900/24	2.1	2960	1000
7516438	1200/24	2.3	3880	1000
7510712	1500/24	2.5	4800	1000
7502008	1800/24	2.8	5700	1000
7502107	2100/24	2.9	6590	1000
7510720	2400/24	3.2	7500	1000
2010080	600/26	1.4	1340	1000
7512510	900/26	1.7	1940	1000
6987374	1200/26	1.9	2530	1000
7513351	1500/26	2.1	3120	1000
6987382	1800/26	2.2	3690	1000
7513252	2100/26	2.4	4270	1000
6987390	2400/26	2.5	4830	1000
2010081	2700/26	2.7	5410	1000
6987408	3000/26	2.8	5980	1000
6987416	3600/26	3.1	7120	1000
6987424	4200/26	3.3	8250	1000

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# Foam Skin ALVYN Riser For Voice & **Digital Transmission Type CMR**

Air Core Cables

Spec. 2507 BELL SYSTEM TYPE: ARMM (24 AWG) ARTM (26 AWG)



#### **Nominal Cable Data** CATALOG PAIRS O.D WFIGHT **STANDARD** (INCHES) NUMBER AWG (LBS/MFT) LENGTH (FT) 2019000 25/24 0.53 142 5000 2019001 50/24 5000 0.66 234 7507601 5000 100/24 0.85 410 7507619 200/24 760 2500 1.20 7507627 300/24 1.40 1105 2500 7507635 400/24 1.50 1445 2500 7507643 600/24 1.90 2150 1250 7507650 900/24 2.20 3170 1250 7507668 1200/24 2.60 4185 1000 7515018 1500/24 2.90 5185 1000 7507676 1800/24 3.10 6185 800 2019005 50/26 0.56 165 5000 2019003 100/26 0.71 280 5000 2019004 5000 200/26 0.92 495 7507544 300/26 710 3000 1.10 7507551 3000 930 400/26 1.20 7507569 1000 600/26 1.50 1365 7507577 900/26 1.80 2025 1000 7507536 1200/26 2.00 2665 1000 7515026 3285 1000 1500/26 2.20 7507585 1800/26 2.40 3915 1000 7515034 2100/26 2.60 4540 1000 7507502 2400/26 2.80 5160 1000 7507510 2700/26 3.00 5790 900 7507593 3000/26 3.10 6410 900 7507528 3600/26 3.40 7650 800

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	24 AWG	26 AWG	Frequency	Attenuation dB/100m (max)	NEXT dB
DC Resistance (max)	27.3	43.9	0.772 MHz	2.2	43
Ohms/1000ft @ 20°C			1 MHz	2.6	41
Mutual Capacitance (nom)	83	83	4 MHz	5.6	32
NF/mile @ 1 kHz			8 MHz	8.5	28
			10 MHz	9.7	26
			16 MHz	13.1	23
		Jack			

# Product Construction

### Conductors:

• 24 and 26 AWG solid bare annealed copper

### Insulation:

- Dual insulation consisting of an inner layer of foamed polyolefin surrounded by a solid PVC skin
- 22 AWG
- Primary insulation, Nominal O.D. = 0.039"
- Secondary insulation, Nominal O.D. = 0.044"
- 24 AWG
- Primary insulation, Nominal O.D. = 0.031" • Secondary insulation, Nominal O.D. = 0.035"
- 26 AWG
- Primary insulation, Nominal O.D. = 0.023"
- Secondary insulation, Nominal O.D. = 0.027"

### Color Code:

- See Color Code Chart on pages 32-33
- 1200 pairs and larger are mirror image color code

# Core Wrap:

 Non-hygroscopic dielectric tape applied longitudinally with an overlap

### Shield:

• 0.008" corrugated, adhesive coated aluminum bonded to jacket

### Jacket:

 Gray flame-retardant PVC jacket bonded to the coated aluminum

# **Applications**

- Intended primarily for placement in vertical risers in buildings and may be used in general horizontal applications
- Designed for Voice and Carrier Transmission between the station protector frames and other equipment terminals

# Compliances

- TIA/EIA 568B.2 (Category 3 for 24 AWG only)
- Bellcore Specification TR-TSY-000111
- UL & c(UL) Type CMR

### Packaging:

- · Standard lengths are shipped on returnable steel reels or on non-returnable wood reels when requested
- ARAM (22 AWG) is available upon request

🗘 General Cable

Telecommunications

2

# **Filled Core Cables**

Plastic insulated Filled Core Cables provide a broad range of pair sizes for the distribution of telecommunication signals for outside use. These cables can be installed in underground ducts and direct buried applications where protection against water and moisture entry is required and may also be installed aerially.

An industry standard color-coding system provides full identification of every pair through the use of 10 different insulating colors and nonhygroscopic unit binders. Designs are available using either a solid, polyolefin insulation or foamed polyolefin with a solid polyolefin skin. The solid insulation provides a more robust Core Construction, whereas the foam skin insulation offers space saving advantages.

A variety of sheath designs are available that provide electrical shielding necessary for proper grounding and mechanical protection against rodents and other physical damage. A black, weather-resistant polyethylene jacket is used on all constructions for protection against long-term outdoor exposure. The temperature range that Telecommunications cable can withstand is: For storage and operation: -45°C to 80°C -49°F to 176°F

For installation: -30°C to 60°C -22°F to 140°F

All cables are equipped with surface-printed identification and sequential footage markings.

The cable design for 19, 22 and 24 AWG sizes has the transmission performance capability of  $100\Omega$ , Category 3 Backbone UTP Cables specified in TIA/EIA-568-B.

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# Filled Solid Cable RDUP (RUS) PE-39 AL



#### **Nominal Cable Data** CATALOG PAIRS 0.D. WFIGHT **STANDARD** (INCHES) NUMBER AWG (LBS/MFT) LENGTH (FT) 7524507 6/19 0.60 150 5000 7524515 12/19 0.75 275 5000 7524523 5000 25/19 0.97 490 7524531 50/19 1.30 910 2500 7524556 6/22 0.45 95 5000 7524564 12/22 0.56 155 5000 7524572 25/22 0.71 260 5000 7524580 50/22 0.95 475 5000 7524598 100/22 1.20 840 2500 7524606 200/22 1.70 1610 2500 7524929 300/22 2.00 2360 1250 7524614 6/24 0.43 80 5000 7524622 5000 12/24 0.51 120 7524648 5000 25/24 0.61 185 7524655 50/24 0.81 330 5000 7524663 5000 75/24 0.92 450 7524671 100/24 580 5000 1.00 7524689 150/24 1.20 820 5000 7524697 200/24 1.30 1030 2500 7524705 300/24 1.60 1550 2500 7524713 400/24 1.90 2000 2500 7524721 600/24 2.20 2960 1250 7524739 900/24 2.70 4310 1250 7524960 1200/24 3.10 5750 1000 7524978 1500/24 3.40 7100 800

Data subject to change without notice. Contact your Customer Service Representative for latest information.

# **Filled Core Cables**

# Spec. 2002

# **Core Construction:**

# **Conductors:**

• Solid, annealed copper; sizes 19, 22 and 24 AWG

# Insulation:

• Solid, high density polyethylene, colorcoded in accordance with telephone industry standards

# **Twisted Pairs:**

 Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

# **Core Assembly:**

- 25 pairs and less: pairs are assembled together in a single group
- More than 25 pairs: pairs are arranged in groups, each group having a colorcoded unit binder

# Filling Compound:

• The entire core assembly is completely filled with ETPR compound, filling the interstices between the pairs and under the core tape

# Core Wrap:

Non-hygroscopic dielectric tape applied longitudinally with an overlap

# Sheath:

# Aluminum Shield:

- Corrugated, copolymer coated, 0.008" aluminum tape applied longitudinally with an overlap
- The sheath interfaces are flooded with an adhesive water-blocking compound

# • Black linear low

Black, linear low density polyethylene

# Application(s):

 Intended for duct and direct buried installations where protection against water and moisture entry is required and may also be installed aerially

# **Compliance:**

• Rural Development Utility Program (RDUP) 7 CFR 1755.390 (RUS PE-39)

# Packaging:

- Standard lengths are shipped on non-returnable wood reels
- Non-standard packaging is available upon request



RDUP (RUS) PE-39 CU

# **Core Construction:**

# **Conductors:**

• Solid, annealed copper; sizes 19, 22 and 24 AWG

# Insulation:

· Solid, high density polyethylene, colorcoded in accordance with telephone industry standards

# Twisted Pairs:

· Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

# Core Assembly:

- · 25 pairs and less: pairs are assembled together in a single group
- More than 25 pairs: pairs are arranged in groups, each group having a colorcoded unit binder

# Filling Compound:

• The entire core assembly is completely filled with ETPR compound, filling the interstices between the pairs and under the core tape

# Core Wrap:

 Non-hygroscopic dielectric tape applied longitudinally with an overlap

# Sheath:

# **Copper Shield:**

- Corrugated 0.005" copper tape applied longitudinally with an overlap
- The sheath interfaces are flooded with an adhesive water-blocking compound

# Jacket:

Black, linear low density polyethylene

# Application(s):

• Intended for duct and direct buried installations where protection against water and moisture entry is required and may also be installed aerially

# Compliance:

 Rural Development Utility Program (RDUP) 7 CFR 1755.390 (RUS PE-39)

# Packaging:

- Standard lengths are shipped on non-returnable wood reels
- Non-standard packaging is available upon request

# **Spec. 2002**



# **Nominal Cable Data**

CATALOG NUMBER	PAIRS AWG	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD Length (FT)
7525009	6/19	0.60	170	5000
7525017	12/19	0.75	300	5000
7525025	25/19	0.97	525	5000
7525033	50/19	1.30	960	2500
7525058	6/22	0.45	105	5000
7525066	12/22	0.56	170	5000
7525074	25/22	0.71	285	5000
7525082	50/22	0.95	505	5000
7528573	75/22	1.10	715	5000
7525090	100/22	1.20	885	2500
7528581	150/22	1.40	1260	2500
7525108	200/22	1.70	1670	2500
7528599	300/22	2.00	2440	1250
7528607	400/22	2.30	3200	1250
7525116	6/24	0.43	95	5000
7525124	12/24	0.51	135	5000
7525140	25/24	0.61	200	5000
7525157	50/24	0.81	355	5000
7525165	75/24	0.92	475	5000
7525173	100/24	1.00	610	5000
7525181	150/24	1.20	855	5000
7525199	200/24	1.30	1070	2500
7525207	300/24	1.60	1610	2500
7525215	400/24	1.90	2070	2500
7525223	600/24	2.20	3040	1250
7525231	900/24	2.70	4440	1250
7528631	1200/24	3.10	5890	1000
7528649	1500/24	3.40	7230	800

Data subject to change without notice. Contact your Customer Service Representative for latest information.



# Filled Solid Copper-Bearing Gopher-Resistant Cable Spec. 2002 RDUP (RUS) PE-39 GR



#### **Nominal Cable Data** CATALOG PAIRS O.D WFIGHT **STANDARD** (INCHES) NUMBER AWG (LBS/MFT) LENGTH (FT) 7528755 6/19 0.60 165 5000 7528763 12/19 315 5000 0.75 7528789 540 5000 25/19 0.97 7528797 50/19 980 2500 1.30 7528003 6/22 0 45 105 5000 7528011 12/22 0.56 170 5000 7528029 18/22 0.66 245 5000 7528037 25/22 0.71 290 5000 7528045 50/22 0.95 520 5000 7528052 75/22 1.10 730 5000 7528060 100/22 1.20 900 2500 7528078 150/22 1.40 1280 2500 7528086 200/22 1.70 1700 2500 1250 7528094 300/22 2.00 2470 7528854 400/22 2.30 3240 1250 5000 7528102 95 6/240.43 7528110 135 5000 12/24 0.51 7528128 18/24 0.57 175 5000 7528136 25/24 0.61 215 5000 7528144 50/24 375 5000 0.81 7528151 75/24 0.92 495 5000 7528169 100/24 1.00 630 5000 7528177 150/24 1.20 885 5000 7528185 200/24 1.30 1100 2500 7528193 300/24 1.60 1640 2500 7528201 400/24 1.90 2110 2500 7528219 600/24 2.20 3080 1250 7528227 900/24 2.70 4480 1250

Data subject to change without notice. Contact your Customer Service Representative for latest information.

3.10

5950

1000

1200/24

# **Core Construction:**

### **Conductors:**

 Solid, annealed copper; sizes 19, 22 and 24 AWG

#### Insulation:

• Solid, high density polyethylene, colorcoded in accordance with telephone industry standards

#### **Twisted Pairs:**

 Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

### Core Assembly:

- 25 pairs and less: pairs are assembled together in a single group
- More than 25 pairs: pairs are arranged in groups, each group having a color-coded unit binder

#### Filling Compound:

• The entire core assembly is completely filled with ETPR compound, filling the interstices between the pairs and under the core tape

#### Core Wrap:

Non-hygroscopic dielectric tape applied longitudinally with an overlap

### Sheath:

# **Copper-Bearing Shield:**

- Corrugated, copper-bearing gopherresistant tape applied longitudinally with an overlap
- The sheath interfaces are flooded with an adhesive water-blocking compound

# Jacket:

• Black, linear low density polyethylene

# Application(s):

- Intended for duct and direct buried installations where protection against water and moisture entry is required and may also be installed aerially
- The copper-bearing tape provides increased mechanical protection and gopher resistance

### **Compliance:**

 Rural Development Utility Program (RDUP) 7 CFR 1755.390 (RUS PE-39)

### Packaging:

- Standard lengths are shipped on non-returnable wood reels
- Non-standard packaging is available upon request



7528235

# Filled Solid CACSP Cable

RDUP (RUS) PE-39 CACSP

# **Core Construction:**

# **Conductors:**

• Solid, annealed copper; sizes 19, 22 and 24 AWG

# Insulation:

• Solid, high density polyethylene, colorcoded in accordance with telephone industry standards

# **Twisted Pairs:**

 Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

# Core Assembly:

- 25 pairs and less: pairs are assembled together in a single group
- More than 25 pairs: pairs are arranged in groups, each group having a color-coded unit binder

# Filling Compound:

• The entire core assembly is completely filled with ETPR compound, filling the interstices between the pairs and under the core tape

# Core Wrap:

 Non-hygroscopic dielectric tape applied longitudinally with an overlap

# CACSP Sheath:

# Aluminum Shield:

 Corrugated, copolymer-coated, 0.008" aluminum tape applied longitudinally over the core wrap

# **Steel Shield:**

- Corrugated, copolymer-coated, 0.006" steel tape applied longitudinally over the aluminum tape with an overlap
- The sheath interfaces are flooded with an adhesive water-blocking compound

# Jacket:

• Black, linear low density polyethylene

# Application(s):

- Intended for duct and direct buried installations where protection against water and moisture entry is required and may also be installed aerially
- The addition of the steel tape armor provides increased mechanical protection and gopher resistance

# **Compliance:**

 Rural Development Utility Program (RDUP) 7 CFR 1755.390 (RUS PE-39)

# Packaging:

- Standard lengths are shipped on non-returnable wood reels
- Non-standard packaging is available upon request

# 🗘 General Cable



# Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD LENGTH (FT)
7529647	6/19	0.60	185	5000
7529654	12/19	0.75	325	5000
7529670	25/19	0.97	555	5000
7529688	50/19	1.30	1000	2500
7529746	6/22	0.45	120	5000
7529753	12/22	0.56	185	5000
7529779	25/22	0.71	305	5000
7529787	50/22	0.95	540	5000
7529878	6/24	0.43	105	5000
7529886	12/24	0.51	150	5000
7529902	25/24	0.61	220	5000
7529910	50/24	0.81	385	5000

Data subject to change without notice. Contact your Customer Service Representative for latest information.

# Spec. 2002

# Filled Foam Skin Cable

RDUP (RUS) PE-89 AL

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#### **Nominal Cable Data** CATALOG PAIRS 0.D. WFIGHT **STANDARD** (INCHES) NUMBER AWG (LBS/MFT) LENGTH (FT) 7525504 6/19 0.57 155 5000 7525512 12/19 230 5000 0.66 7525538 5000 25/19 0.87 415 7525595 6/22 0.47 100 5000 7525603 12/22 0.54 140 5000 7525629 25/22 0.65 230 5000 7525637 50/22 0.83 400 5000 7525652 100/22 1.10 725 2500 7525678 200/22 1.40 1330 2500 7525686 300/22 1.70 1950 1250 7525694 400/22 2.00 2570 1250 7525702 600/22 3900 2.40 1250 7525751 6/24 0.40 70 5000 7525769 12/240.46 100 5000 7525785 25/24 0.59 175 5000 7525793 50/24 0.72 290 5000 7525819 100/24 0.90 490 5000 7525827 150/24 5000 1.10 690 7525835 200/24 1.20 900 2500 7525843 300/24 1.40 1290 2500 7525850 400/24 1.60 1700 2500 7525868 2440 600/24 1.90 1250 7525876 900/24 2.30 3620 1250 1000 7526973 1200/24 4720 2.60 7526981 1500/24 1000 2.90 5850 1000 7526999 1800/24 3.20 7040

Data subject to change without notice. Contact your Customer Service Representative for latest information.

# **Filled Core Cables**

# Spec. 2007

# **Core Construction:**

### **Conductors:**

 Solid, annealed copper; sizes 19, 22 and 24 AWG

# Insulation:

 Dual insulation consisting of an inner layer of foamed polyolefin surrounded by a solid polyolefin skin, color-coded in accordance with telephone industry standards

### **Twisted Pairs:**

 Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

### Core Assembly:

- 25 pairs and less: pairs are assembled together in a single group
- More than 25 pairs: pairs are arranged in groups, each group having a colorcoded unit binder

# Filling Compound:

• The entire core assembly is completely filled with ETPR compound, filling the interstices between the pairs and under the core tape

# Core Wrap:

• Non-hygroscopic dielectric tape applied longitudinally with an overlap

# Sheath:

# Aluminum Shield:

- Corrugated, copolymer-coated, 0.008" aluminum tape applied longitudinally with an overlap
- The sheath interfaces are flooded with an adhesive water-blocking compound

### Jacket:

• Black, linear low density polyethylene

# Application(s):

 Intended for duct and direct buried installations where protection against water and moisture entry is required and may also be installed aerially

# **Compliance:**

 Rural Development Utility Program (RDUP) 7 CFR 1755.890 (RUS PE-89)

# Packaging:

- Standard lengths are shipped on non-returnable wood reels
- Non-standard packaging is available
   upon request



# Core Construction:

# **Conductors:**

Solid, annealed copper; sizes 22 and 24 AWG

# Insulation:

• Dual insulation consisting of an inner layer of foamed polyolefin surrounded by a solid polyolefin skin, color-coded in accordance with telephone industry standards

# **Twisted Pairs:**

 Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

# Core Assembly:

- 25 pairs and less: pairs are assembled together in a single group
- More than 25 pairs: pairs are arranged in groups, each group having a colorcoded unit binder

# Filling Compound:

• The entire core assembly is completely filled with ETPR compound, filling the interstices between the pairs and under the core tape

# Core Wrap:

 Non-hygroscopic dielectric tape applied longitudinally with an overlap

# **CACSP** Sheath:

# Aluminum Shield:

 Corrugated, copolymer-coated, 0.008" aluminum tape applied longitudinally over the core wrap

# Steel Shield:

- Corrugated, copolymer-coated, 0.006" steel tape applied longitudinally over the aluminum tape with an overlap
- The sheath interfaces are flooded with an adhesive water-blocking compound

# Jacket:

• Black, linear low density polyethylene

# Application(s):

- Intended for duct and direct buried installations where protection against water and moisture entry is required and may also be installed aerially
- The addition of the steel tape armor provides increased mechanical protection and gopher resistance

# **Compliance:**

 Rural Development Utility Program (RDUP) 7 CFR 1755.890 (RUS PE-89)

# **Packaging:**

- Standard lengths are shipped on non-returnable wood reels
- Non-standard packaging is available upon request

# 🗘 General Cable



# Nominal Cable Data

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CATALOG NUMBER	PAIRS AWG	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD Length (FT)
7526551	6/22	0.47	125	5000
7526569	12/22	0.54	180	5000
7526577	25/22	0.65	280	5000
7526585	50/22	0.83	465	5000
7526601	100/22	1.10	790	2500
7526619	200/22	1.40	1430	2500
7526627	300/22	1.70	2050	1250
7071608	6/24	0.40	90	5000
7526668	12/24	0.46	125	5000
7526684	25/24	0.60	210	5000
7526692	50/24	0.72	330	5000
7526718	100/24	0.90	550	5000
7526726	150/24	1.10	750	5000
7526734	200/24	1.20	980	2500
7526742	300/24	1.40	1370	2500
7526759	400/24	1.60	1800	2500
7526767	600/24	1.90	2590	1250
7526775	900/24	2.30	3790	1250
7071616	1200/24	2.60	4920	1000
7071624	1500/24	2.90	6110	1000
7071632	1800/24	3.20	7280	1000

Data subject to change without notice. Contact your Customer Service Representative for latest information.

# Spec. 2007

# Filled Foam Skin ALPETH Cable BELL SYSTEM TYPE ANBA (19 AWG) ANMA (24 AWG)

ANAA (22 AWG) ANTA (26 AWG)



#### **Nominal Cable Data** CATALOG PAIRS WFIGHT **STANDARD** 0.D (INCHES) NUMBER AWG (LBS/MFT) LENGTH (FT) 2036300 25/19 0.86 415 5000 2036301 50/19 1.10 760 2500 2036302 100/19 1.50 1365 2500 2036303 2650 1250 200/19 2.00 2036304 300/19 2.40 3850 1250 2036307 25/22 0.64 225 5000 5000 2036308 50/22 0.82 395 2036309 100/22 1.10 730 2500 2036310 200/22 1.40 1305 2500 2036311 300/22 1.70 1985 1250 2036312 400/22 2.00 2580 1250 2036313 600/22 1250 2.40 3910 2036314 5855 1000 900/22 3.00 2036320 25/24 0.59 170 5000 2036321 50/24 0.72 280 5000 2036322 100/24 0.90 485 5000 2036323 200/24 1.20 895 2500 2036324 300/24 2500 1.40 1275 2036325 1675 2500 400/24 1.60 2036326 600/24 1.90 2460 1250 2036327 1250 900/24 2.30 3640 4780 1000 2036328 1200/24 2.60 2036329 1500/24 2.90 6025 1000 2036330 1800/24 3.20 7260 1000 2036331 2100/24 3.50 8420 750 2036334 25/26 0.49 120 5000 2036335 50/26 5000 0.61 165 2036336 100/26 0.78 340 5000 2036337 200/26 0.96 575 5000 2036338 2500 300/26 1.20 860 2036339 400/26 1.30 1090 2500 2036340 600/26 1.60 1600 1250 2036341 900/26 1.90 2355 1250 2036342 1200/26 2.10 3095 1250 2036343 1250 1500/26 2.40 3870 2036344 1800/26 2.60 4540 1000 2036345 2100/26 2.90 5475 1000

# Filled Core Cables

# Spec. 2111

# **Core Construction:**

# **Conductors:**

 Solid, annealed copper; sizes 19, 22, 24 and 26 AWG

# Insulation:

 Dual insulation consisting of an inner layer of foamed polyolefin surrounded by a solid polyolefin skin, color-coded in accordance with telephone industry standards

# **Twisted Pairs:**

 Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

# Core Assembly:

- 25 pairs and less: pairs are assembled together in a single group
- More than 25 pairs: pairs are arranged in groups, each group having a colorcoded unit binder
- 1200 pairs and larger are mirror image color code

# Filling Compound:

• The entire core assembly is completely filled with ETPR compound, filling the interstices between the pairs and under the core tape

# Core Wrap:

Non-hygroscopic dielectric tape applied longitudinally with an overlap

# Sheath:

# Aluminum Shield:

- Corrugated, 0.008" aluminum tape applied longitudinally with an overlap
- The sheath interfaces are flooded with an adhesive water-blocking compound

# Jacket:

• Black, linear low density polyethylene

# Application(s):

 Intended for duct and direct buried installations where protection against water and moisture entry is required and may also be installed aerially

# **Compliance:**

 Telcordia (Bellcore) Specification GR-421-CORE

# Packaging:

1000

- Standard lengths are shipped on returnable steel reels or on nonreturnable wood reels when requested
- Non-standard packaging is also available



3.00

6120

2400/26

2036346

# Filled Foam Skin ASP Cable

BELL SYSTEM TYPE ANBW (19 AWG) ANMW (24 AWG) ANAW (22 AWG) ANTW (26 AWG)

# **Core Construction:**

# **Conductors:**

• Solid, annealed copper; sizes 19, 22, 24 and 26 AWG

# Insulation:

• Dual insulation consisting of an inner layer of foamed polyolefin surrounded by a solid polyolefin skin, color-coded in accordance with telephone industry standards

# **Twisted Pairs:**

 Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

# Core Assembly:

- 25 pairs and less: pairs are assembled together in a single group
- More than 25 pairs: pairs are arranged in groups, each group having a colorcoded unit binder
- 1200 pairs and larger are mirror image color code

# Filling Compound:

• The entire core assembly is completely filled with ETPR compound, filling the interstices between the pairs and under the core tape

# Core Wrap:

• Non-hygroscopic dielectric tape applied longitudinally with an overlap

# ASP Sheath:

# **Aluminum Shield:**

 Corrugated, 0.008" aluminum tape applied longitudinally over the core wrap

# Steel Shield:

- Corrugated, 0.006" steel tape applied longitudinally over the aluminum tape with an overlap
- The sheath interfaces are flooded with an adhesive water-blocking compound

# Jacket:

• Black, linear low density polyethylene

# Application(s):

 Intended for duct and direct buried installations where protection against water and moisture entry is required and may also be installed aerially

# **Compliance:**

 Telcordia (Bellcore) Specification GR-421-CORE

# Packaging:

- Standard lengths are shipped on returnable steel reels or on nonreturnable wood reels when requested
- Non-standard packaging is also available

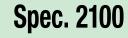
# 🗘 General Cable

# Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD LENGTH (FT)
6987481	25/19	0.86	465	5000
6987499	50/19	1.10	825	2500
6987507	100/19	1.50	1450	2500
6987515	200/19	2.00	2780	1250
6987523	300/19	2.40	4005	1250
6987572	25/22	0.70	280	5000
6987580	50/22	0.86	465	5000
6987606	100/22	1.10	790	2550
6987622	200/22	1.40	1410	2550
6987630	300/22	1.70	2060	1250
6987648	400/22	2.00	2710	1250
6987655	600/22	2.40	4050	1250
6987663	900/22	2.90	5900	1000
6987671	1200/22	3.30	7740	750
6987705	25/24	0.57	205	5000
6987713	50/24	0.74	320	5000
6987721	100/24	0.91	535	5000
6987739	200/24	1.20	955	2500
6987747	300/24	1.40	1350	2500
6987754	400/24	1.60	1775	2500
6987762	600/24	1.90	2570	1250
6987770	900/24	2.30	3770	1250
6987788	1200/24	2.60	4920	1000
6987796	1500/24	2.90	6060	1000
6987804	1800/24	3.20	7270	1000
6987812	25/26	0.50	150	5000
6987820	50/26	0.61	230	5000
6987838	100/26	0.80	395	5000
6987846	200/26	1.00	670	5000
6987853	300/26	1.20	940	2500
6987861	400/26	1.30	1235	2500
6987879	600/26	1.60	1710	1250
6987887	900/26	1.90	2475	1250
6987895	1200/26	2.10	3220	1250
7507007	1500/26	2.40	4010	1250
7507015	1800/26	2.60	4685	1000
7502958	2100/26	2.80	5500	1000
7507023	2400/26	2.90	6160	1000
7512650	2700/26	3.20	7010	1000
7512668	3000/26	3.30	7610	750

Data subject to change without notice. Contact your Customer Service Representative for latest information. This design is for duct installation only.

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# Filled Foam Skin "S" Screened ASP Cable

BELL SYSTEM TYPE KNAW (22 AWG) KNMW (24 AWG)

444444

# **Nominal Cable Data**

CATALOG	PAIRS	0.D.	WEIGHT	STANDARD
NUMBER	AWG	(INCHES)	(LBS/MFT)	LENGTH (FT)
7528250	28/22	0.74	325	9000
7528268	54/22	0.92	515	9000
7528276	106/22	1.20	885	6000
7528284	158/22	1.40	1230	4500
7528292	210/22	1.60	1630	3000
7528300	314/22	1.90	2370	3000
7528318	418/22	2.10	2970	2000
7528326	616/22	2.50	4260	1500
2039061	28/24	0.62	235	9000
2039062	54/24	0.75	360	9000
2039063	106/24	0.96	600	6000
2039064	210/24	1.30	1075	4500

Data subject to change without notice. Contact your Customer Service Representative for latest information.

# **Filled Core Cables**

# Spec. 2109-F

# **Core Construction:**

# **Conductors:**

 Solid, annealed copper; size 22 and 24 AWG

# Insulation:

 Dual insulation consisting of an inner layer of foamed polyolefin surrounded by a solid polyolefin skin, color-coded in accordance with telephone industry standards

### **Twisted Pairs:**

 Insulated conductors are twisted into pairs with varying lay lengths to minimize crosstalk

### Core Assembly:

- Twisted pairs are assembled into 12, 13 and 25 pair units, or into 50 pair multiunits
- Service pair units of 4 to 18 pairs are assembled for inclusion into the cable

# "S" Screen:

• Each half of the cable core is separated from the other by use of a 0.004" plastic-coated aluminum screen which divides the core into two electrically isolated compartments

### Filling Compound:

• The entire core assembly is completely filled with ETPR compound, filling the interstices between the pairs and under the core tape

# Core Wrap:

• Non-hygroscopic dielectric tape applied longitudinally with an overlap

### ASP Sheath:

# **Aluminum Shield:**

 Corrugated, 0.008" aluminum tape applied longitudinally over the core wrap

### **Steel Shield:**

- Corrugated, 0.006" steel tape applied longitudinally over the aluminum tape with an overlap
- The sheath interfaces are flooded with an adhesive water-blocking compound

### Jacket:

• Black, linear low density polyethylene

### Application(s):

- Intended for direct buried installation
- Designed for digital two-way T-Carrier signal operation under one cable sheath

### **Compliance:**

 Telcordia (Bellcore) Specification GR-421-CORE

### Packaging:

- Standard lengths are shipped on returnable steel reels or on nonreturnable wood reels when requested
- Non-standard packaging is also available



# Telecommunications

# **Broadband Composite Wire and Cable**

3

General Cable produces customized composite cables for Multimedia, Hybrid Fiber Coaxial and Digital Subscriber Line applications. These products can combine standard twisted pair copper distribution cable or service wire with coaxial cable service wire and/or fiber optic cable. These combinations may be designed for voice and data transmission, as well as for video applications. The completed cable is supplied under a common sheath for either aerial or direct buried applications in a variety of configurations. For aerial designs, we can provide an integral steel messenger for Figure 8 clamp support, and for direct burial, General Cable can provide unshielded or shielded designs, depending on the degree of mechanical protection required.

We have an extensive technical staff for design support. Please contact your General Cable Sales Representative for additional information.







# Wire Products

Wire products are small size distribution wires used as the last link in bringing telecommunication services to the subscriber. These services can incorporate voice, data and video channels.

Wire products are used in constructions from one pair to six pairs. They are made for either self-supported aerial or for buried service applications.

Aerial Services Wires are supported by either an integral steel wire, glass fibers imbedded in the jacket, or by the use of high tensile copper-clad steel conductors.

**Buried Service Products are** water-resistant and can be made with different shielding materials for mechanical protection during installation and against damage by rodents. All Buried Service Wire is equipped with sequential footage markings.

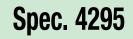
The temperature range that Telecommunications cable can withstand is: For storage and operation: -45°C to 80°C -49°F to 176°F For installation: -30°C to 60°C -22°F to 140°F Multi-pair Aerial and Filled Service Wires have the transmission performance capability of  $100\Omega$ . Category 3 Horizontal UTP Cables specified in TIA/EIA-568-B.

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Δ

# Wire Products

# **Drop Wire** BELL SYSTEM TYPE F DROP AND RDUP (RUS) PE-7



# **Product Construction:**

# **Conductors:**

 181/2 AWG solid 30% conductivity extra high strength copper-covered steel

# Sheath:

 Black, flame-, weather- and abrasionresistant PVC compound extruded over two conductors in a parallel configuration

# **Polarity Identification:**

 Polarity ridge on one leg of the web located at 45° above the major axis of the wire cross-section

# Application(s):

• Self-supporting one pair parallel conductor drop wire intended for aerial service connection to the subscriber

# **Compliance:**

- Telecordia (Bellcore) Specification TR-NWT-000121
- Rural Development Utility Program
- (RDUP) Bulletin 1753 F-204 (RUS PE-7) • ANSI/ICEA S-89-648-1993

# Packaging:

• Available in Pull-Pac<sup>™</sup> cartons (PP), coils in cartons (CL/CTN) and reels (RL)

# C Rural Wire BELL SYSTEM TYPE

# **Product Construction:**

# **Conductors:**

• 14 or 12 AWG solid 30% conductivity extra high strength copper-covered steel

# Sheath:

 Black, high density polyethylene compound extruded over two conductors in a parallel configuration

# **Polarity Identification:**

 Polarity ridge on one minor face of the insulation located at 45° above the major axis of the wire cross-section

# Application(s):

• Self-supporting one pair parallel conductor drop wire intended for aerial distribution in rural exchange areas

# **Compliance:**

 Telcordia (Bellcore) Specification TA-TSY-000125

# Packaging:

• Available in coils (CL) and reels (RL)

# 🗘 General Cable

CATALOG NUMBER	PAIRS AWG	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD Length (FT)
7021421	1/18½	0.130 x 0.255	24	1000 CL
7021496	1/18½	0.130 x 0.255	24	1000 PP
7021512	1/18½	0.130 x 0.255	24	1000 CL/CTN
2091004	1/18½	0.130 x 0.255	24	2500 RL

Data subject to change without notice. Contact your Customer Service Representative for latest information.





# Spec. 4283



# **Nominal Cable Data**

CATALOG NUMBER	PAIRS Awg	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD Length (FT)
6307482	1/14	0.160 x 0.280	37	1000 CL
3114733	1/14	0.160 x 0.280	37	5000 (21") RL
7013881	1/14	0.160 x 0.280	37	5500 (29") RL
2091013	1/12	0.190 x 0.315	54	4000 (21") RL

Data subject to change without notice. Contact your Customer Service Representative for latest information.

# **PVC Insulated Ground Wire BELL SYSTEM TYPE**

# **Nominal Cable Data**

CATALOG NUMBER	AWG	CABLE CODE	NOM. O.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD Length (FT)
7515307	6	V-61-C	0.22	90	600 CL
7515257	6	V-61-C	0.22	90	4000 RL
7515265	10	V-101-C	0.15	37	200 CL/CTN
2091083	10	V-101-C	0.15	37	10000 RL

Data subject to change without notice. Contact your Customer Service Representative for latest information.

# Passes UL VW-1 W-1S Flame Test Flame Test Underwriters Laboratories Inc.



# **Bare Ground Wire BELL SYSTEM TYPE**

Nominal Cable Data						
CATALOG NUMBERAWGCABLE CODENOM. O.D. (INCHES)WEIGHT (LBS/MFT)STANDARD LENGTH (FT)						
2091090	6	B-6	0.16	79	50 CL/CTN	
2091093	6	B-6	0.16	79	600 CL	
2091095	6	B-6	0.16	79	4000 RL	

Data subject to change without notice. Contact your Customer Service Representative for latest information.

# **Product Construction:**

# **Conductor:**

· Solid annealed copper

### Insulation:

• Light olive gray, flame-retardant, weather- and abrasion-resistant PVC compound extruded over the conductor

# Application(s):

• Single conductor for connection to ground for customer premises or network equipment and station protectors

### **Compliance:**

- Telcordia (Bellcore) Specification TA-TSY-000120
- UL Listed VW-1

# Packaging:

· Available in coils (CL), coils in cartons (CL/CTN) and reels (RL)

# **Product Construction:**

- Conductor:
  - Solid annealed copper

# Application(s):

• Single conductor for grounding aerial cables and pole-mounted equipment. Proper Telephone Co. grounding practices must be followed

Spec. 2622

# Compliance:

- Telcordia (Bellcore) Specification TA-TSY-000120
- ASTM B-3

### Packaging:

• Available in coils (CL), coils in cartons (CL/CTN) and reels (RL)



# Wire Products

Spec. 2621

BELL SYSTEM TYPE AND RDUP (RUS)

# Telecommunications

# Spec. 4292-4294

# Product Construction:

# **Conductors:**

• 22 AWG solid annealed copper

# Insulation:

Color-coded high density polyethylene

# Assembly:

• 2, 3 or 6 twisted pairs and rip cord placed parallel between the glass strength members

# Jacket:

 Black, flame-retardant, weather- and abrasion-resistant PVC compound extruded over core assembly

# Application(s):

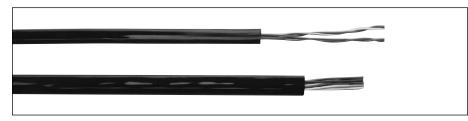
- Self-supporting drop wire intended for aerial service connection to the subscriber
- Compatible with "P" Clamp/Wedge type hardware
- Glass strength member is lightweight, easy to install
- No need for support wire grounding
- Not affected by salt air and corrosive environments

# **Compliance:**

- Telcordia (Bellcore) Specification TR-NWT-001069
- Rural Development Utility Program (RDUP) Bulletin 1753 F-204

# Packaging:

 Available in Pull-Pac<sup>™</sup> cartons (PP), coils (CL), reels (RL) and reelsaver (RS)



# Nominal Cable Data

CATALOG NUMBER	PAIRS Awg	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD LENGTH (FT)	
2090021	2/22	0.20 x 0.40	40	500 RS	
2090008*	2/22	0.20 x 0.40	40	750 PP	
2090012	2/22	0.20 x 0.40	40	750 CL	
2090010	2/22	0.20 x 0.40	40	1000 CL	
2090053	2/22	0.20 x 0.40	40	3500 RL	
2090052*	3/22	0.28 x 0.44	54	600 PP	
2090018*	6/22	0.27 x 0.50	80	400 PP	
2090014	6/22	0.27 x 0.50	80	400 CL	
2090055	6/22	0.27 x 0.50	80	500 CL	
2090051	6/22	0.27 x 0.50	80	1000 RL	
2090056	6/22	0.27 x 0.50	80	2500 RL	
2090013	6/22	0.27 x 0.50	80	3500 RL	

Data subject to change without notice. Contact your Customer Service Representative for latest information. \* These Telecommunications wire items have sequential markings.



# 👽 General Cable

# **Multiple Pair Aerial Service Wire** BELL SYSTEM TYPE



### **Nominal Cable Data**

CATALOG NUMBER	PAIRS Awg	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD Length (FT)
2091018	2/22	0.30 x 0.50	54	600 CL
2091019	2/22	0.30 x 0.50	54	5000 RL
2091021	6/22	0.35 x 0.55	78	400 CL
2091015	6/22	0.35 x 0.55	78	500 CL
2091016	6/22	0.35 x 0.55	78	3500 RL

Data subject to change without notice. Contact your Customer Service Representative for latest information.

# **Product Construction:**

### **Conductors:**

• 22 AWG solid annealed copper

### Insulation:

• Color-coded high density polyethylene

### Jacket:

• The pairs and a .083" diameter galvanized steel messenger are enclosed in a black flame-retardant, weather- and abrasion-resistant PVC jacket in a Figure 8 configuration

# Application(s):

• Provides multiple line telecommunication service connection to the subscriber

### **Compliance:**

• Telcordia (Bellcore) Specification TR-NWT-000122

# Packaging:

• Available in coils (CL) and reels (RL)





# **V** General Cable

# Wire Products

Spec. 4298

Spec. 4284

# **Double Jacketed Buried Service Wire**

GOPHER-RESISTANT RDUP (RUS) PE-86

ICEA S-86-634

# **Product Construction:**

# **Conductors:**

Solid annealed copper

# Insulation:

High density polyethylene

# Pairing:

Varying pair lays

# Core Filling:

• 80°C filling and flooding compounds

# Inner Jacket:

• Linear low density polyethylene

# Shield:

• 0.005" corrugated copper-clad alloy steel tape

# **Rip Cord:**

• Under the outer jacket

# **Outer Jacket:**

• Black, linear low density polyethylene

# Application(s):

- Intended for use in buried service
- application to the subscriber loops
- The shielding material provides resistance to gopher damage

# **Compliance:**

# • ICEA S-86-634

 RDUP 7 CFR 1755.860 (RUS PE-86) for 2 and 3 pair constructions, formerly PE-54 CCS

# Packaging:

 Standard coils or on non-returnable plywood reels in lengths as shown above



# Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	0.D. INCHES	WEIGHT LBS/MFT	STANDARD LENGTH (FT)
2095061	2/22	0.32	57	2500
2095002	2/22	0.32	57	5000
2095151	3/22	0.34	65	1000
2095064	3/22	0.34	65	2500
2095016	3/22	0.34	65	5000
2095150	6/22	0.40	93	1000
2095065	6/22	0.40	93	2500
2095063	6/22	0.40	93	5000
2095067	3/24	0.31	55	2500
2095066	3/24	0.31	55	5000
2095068	6/24	0.36	74	2500
2095069	6/24	0.36	74	5000

Data subject to change without notice. Contact your Customer Service Representative for latest informationl.

# **Double Jacketed Buried Service Wire**

WITH ALUMINUM SHIELD ICEA S-86-634



Wire Products



# Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD LENGTH (FT)
2095138	2/22	0.33	48	1000
2095125	2/22	0.33	48	2500
2095126	2/22	0.33	48	5000
2095127	3/22	0.35	56	2500
2095128	3/22	0.35	56	5000
2095137	6/22	0.41	82	1000
2095129	6/22	0.41	82	2500
2095130	6/22	0.41	82	5000
2095131	2/24	0.30	39	2500
2095132	2/24	0.30	39	5000
2095133	3/24	0.32	46	2500
2095134	3/24	0.32	46	5000
2095135	6/24	0.37	64	2500
2095136	6/24	0.37	64	5000

Data subject to change without notice. Contact your Customer Service Representative for latest information.

# **Product Construction:**

### **Conductors:**

• Solid annealed copper

#### Insulation:

• High density polyethylene

### Pairing:

- Varying pair lays
- Core Filling:
- 80°C filling and flooding compounds

#### Inner Jacket:

• Linear low density polyethylene

# Shield:

• Polymer-coated 0.008" aluminum tape

### Rip Cord:

• Under the outer jacket

#### **Outer Jacket:**

• Black, linear low density polyethylene

# Application(s):

• Intended for use in buried service application to the subscriber loops

### **Compliance:**

• ICEA S-86-634

# Packaging:

 Standard coils or on non-returnable plywood reels in lengths as shown above



# Double Jacketed Buried Service and Distribution Wire Spec. 3503

BELL SYSTEM TYPE-GOPHER-RESISTANT

# **Product Construction:**

# **Conductors:**

22 or 19 AWG solid annealed copper

# Insulation:

• High density polyethylene

# Pairing:

Varying pair lays

# Core Filling:

80°C filling compound

# Inner Jacket:

• Linear low density polyethylene

# Shield:

• 0.005" corrugated copper-clad alloy steel tape

# **Rip Cords:**

Under each jacket

# Outer Jacket:

• Black, linear low density polyethylene

# Application(s):

- Intended for use in buried service
- application to the subscriber loopsThe shielding material provides
- resistance to gopher damage

# **Compliance:**

• Telcordia (Bellcore) TR-NWT-000124

# **Packaging:**

• Standard coils or on non-returnable plywood reels in lengths as shown above



# Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD LENGTH (FT)
2095093	3/22	0.34	62	500 Coil
2095089	3/22	0.34	62	1200 Reel
2095090	3/22	0.34	62	3000 Reel
2095091	3/22	0.34	62	5000 Reel
2095094	6/22	0.40	88	800 Reel
2095095	6/22	0.40	88	3000 Reel
2095096	6/22	0.40	88	5000 Reel
2095100	3/19	0.42	95	1200 Reel
2095101	3/19	0.42	95	3000 Reel
2095102	3/19	0.42	95	5000 Reel
2095105	6/19	0.51	150	800 Reel
2095107	6/19	0.51	150	3000 Reel
2095106	6/19	0.51	150	5000 Reel

Data subject to change without notice. Contact your Customer Service Representative for latest information.



# Single Jacketed Buried Service Wire

BELL SYSTEM TYPE C SERVICE

# Wire Products

# Spec. 3502

# **Product Construction:**

### **Conductors:**

• 22 AWG solid annealed copper

### Insulation:

• High density polyethylene

### **Pairing:**

• Varying pair lays

- Core Filling:
- 80°C filling and flooding compounds

# Core Wrap:

Polyester tape

### Shield:

• 0.004" corrugated commercial bronze or copper-clad steel tape

### **Rip Cord:**

• Under the jacket

### Jacket:

• Black, linear low density polyethylene

### Application(s):

 Intended for use in buried service application to the subscriber loops

### Compliance:

• Telcordia (Bellcore) TR-NWT-000124

# Packaging:

• Standard coils or on non-returnable plywood reels in lengths as shown above

# Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	0.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD LENGTH (FT)
2095088	3/22	0.30	53	500 Coil
2095160	3/22	0.30	53	1200 Reel
2095084	3/22	0.30	53	3000 Reel
2095086	3/22	0.30	53	5000 Reel
2095087	3/22	0.30	53	8000 Reel
2095161	6/22	0.37	81	800 Reel
2095098	6/22	0.37	81	3000 Reel
2095099	6/22	0.37	81	5000 Reel

Data subject to change without notice. Contact your Customer Service Representative for latest information.

GenSPEED® 5000

# Outdoor Category 5e 4 Pair 24 AWG Buried Service Wire ICEA S-90-661

# **Product Construction:**

# **Conductors:**

• 24 AWG solid bare annealed copper

### Insulation:

Color coded Polyolefin

# **Flooding Compound:**

 Waterproof gel prevents moisture migration

# Jacket:

- Black UV- and abrasion-resistant polyethylene (PE)
- TRÚ-MÁRK™ print legend (1000' to 0')
  The jacket is designed to withstand low
- and high temperatures
  - -30°C to 60°C per installation -45°C to 80°C per operation

# Application(s):

- GenSPEED® 5000 outdoor category 5e cable with armor can be installed directly in the ground, in a duct or aerially lashed to a strength member. The non-armored design is for duct installation only
- 1000 BASE-T (Gigabit Ethernet)
- 100/10BASE-T (IEEE 802.3)
- 52/155 Mbps ATM
- Voice/T1

# Compliance:

- MIL-C-24640A water penetration requirements
- ANSI/TIA/EIA 568B.2 (Category 5e)
- ANSI/ICEA S-90-661 (Category 5e)
- NEMA WC63.1 (Category 5e)
- ISO 11801 (Category 5e)

# **Packaging:**

- 1000' Reels (RL)
- Non-standard packaging is also available



# Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	0.D. (INCHES)	WEIGHT (LBS/MFT)	ARMOR
5136100	4/24	0.230	25	NONE
5136101	4/24	0.340	75	Aluminum

Data subject to change without notice. Contact your Customer Service Representative for latest information.

GenSpeed® 5000 Outdoor Category 5e cable with armor can be installed directly in the ground, in a duct, or aerially lashed to a strength member. The non-armored design is for duct installation only.

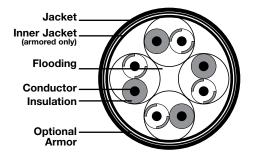
# **Electrical Characteristics**

DC Resistance (max) Ohms/100m (328 ft) @ 20°C	9.38
Mutual Capacity (nom) pF/ft @ 1kHz	17
Nominal Velocity of Propagation (NVP) % Speed of Light	69
Propagation Delay (max) ns @ 100 MHz	583
Delay Skew (max) ns/100m	45
Characteristic Impedance Frequency (f): 1-100 MHz	Ohms 100 ± 15

# **Electrical Characteristics**

Frequency (MHz)	Attenuation (max)	NEXT (min)	PSNEXT (min)	ELFEXT (min)	PSELFEXT (min)	Return Loss (min)
1	2.0	65.3	62.3	63.8	60.8	20.0
4	4.1	56.3	53.3	51.7	48.7	23.0
8	5.8	51.3	48.3	45.7	42.7	24.5
10	6.5	50.3	47.3	43.8	40.8	25.0
16	8.2	47.3	44.4	39.7	36.7	25.0
20	9.3	45.3	42.8	37.7	34.7	25.0
25	10.4	44.3	41.3	35.8	32.8	24.3
31.25	11.7	42.9	39.9	33.9	30.9	23.6
62.5	17.0	38.4	35.4	27.8	24.8	21.5
100	22.0	35.3	32.3	23.8	20.8	20.1

Note: Values are expressed in dB per 100m (328ft.) length.



🗘 General Cable

# **Technical Information**

The complexity of today's Outside Voice and Data transmissions has generated an increasing demand for more technical information. In the current business world, customer service representatives, engineers, distributors and endusers do not have time to search for answers to their technical questions.

To this end, General Cable is including a limited technical section to help simplify these decisions and enable you to more expeditiously locate the products you need and answer productspecific questions. Reel size and weight charts based on O.D. are available upon request from your Customer Service Representative.

Sag and Tension tables are available on the Telecommunications Web page under "Resource/Services."

For additional technical information, please contact your sales representative or our customer service department.

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# **V** General Cable

# **Color Code Chart** PLASTIC INSULATED COMMUNICATON CABLES

# **25 PAIR UNIT COLORS**

PAIR NUMBER	RING Color	TIP Color	PAIR NUMBER	RING Color	TIP Color
1	Blue	White	13	Green	Black
2	Orange	White	14	Brown	Black
3	Green	White	15	Slate	Black
4	Brown	White	16	Blue	Yellow
5	Slate	White	17	Orange	Yellow
6	Blue	Red	18	Green	Yellow
7	Orange	Red	19	Brown	Yellow
8	Green	Red	20	Slate	Yellow
9	Brown	Red	21	Blue	Violet
10	Slate	Red	22	Orange	Violet
11	Blue	Black	23	Green	Violet
12	Orange	Black	24	Brown	Violet
			25	Slate	Violet

### UNIT BINDER COLORS FOR FULL COLOR CODE

GROUP NUMBER	BINDER Colors	PAIR RANGE
1	White - Blue	1 - 25
2	White - Orange	26 - 50
3	White -Green	51 - 75
4	White -Brown	76 - 100
5	White -Slate	101 - 125
6	Red - Blue	126 - 150
7	Red - Orange	151 - 175
8	Red - Green	176 - 200
9	Red - Brown	201 - 225
10	Red - Slate	226 - 250
11	Black - Blue	251 - 275
12	Black - Orange	276 - 300
13	Black - Green	301 - 325
14	Black - Brown	326 - 350
15	Black - Slate	351 - 375
16	Yellow - Blue	376 - 400
17	Yellow - Orange	401 - 425
18	Yellow - Green	426 - 450
19	Yellow - Brown	451 - 475
20	Yellow - Slate	476 - 500
21	Violet - Blue	501 - 525
22	Violet - Orange	526 - 550
23	Violet - Green	551 - 575
24	Violet - Brown	576 - 600

### UNIT BINDER COLORS FOR MIRROR IMAGE 100 PAIR SUPER-UNIT

GROUP NUMBER	BINDER Colors	PAIR RANGE
1	Blue	1 - 25
2	Orange	26 - 50
3	Green	51 - 75
4	Brown	76 - 100

# **300 PAIR SUPER-UNIT**

GROUP NUMBER	BINDER Colors	PAIR Range		
1	White - Blue	1 - 25		
2	White - Orange	26 - 50		
3	White - Green	51 - 75		
4	White - Brown	76 - 100		
5	White - Slate	101 - 125		
6	Red - Blue	126 - 150		
7	Red - Orange	151 - 175		
8	8 Red - Green			
9	9 Red - Brown			
10	Red - Slate	226 - 250		
11	Black - Blue	251 - 275		
12	Black - Orange	276 - 300		

### SUPER-UNIT BINDER COLORS FOR MIRROR IMAGE (See drawings on the next page)

### SPARE PAIRS FOR MIRROR IMAGE

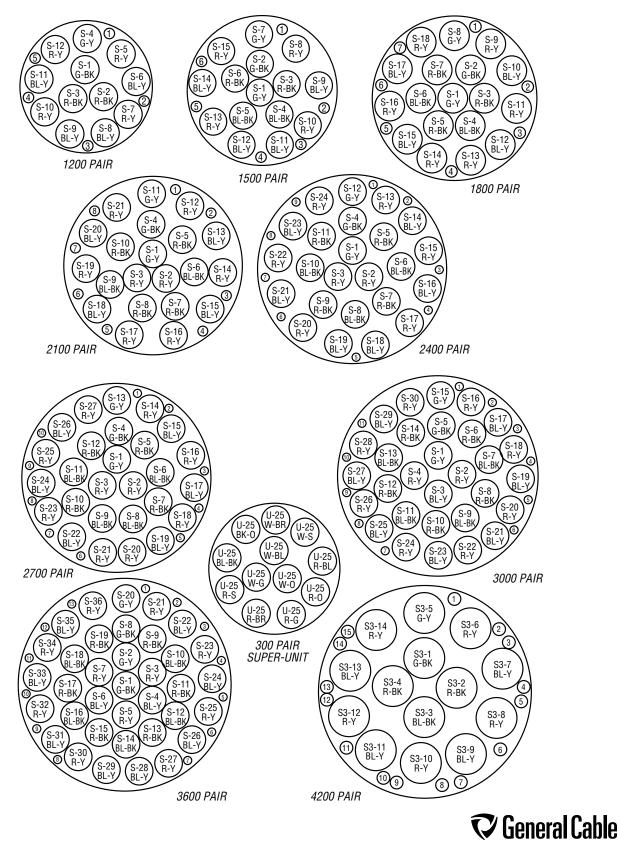
PAIR NUMBER	PAIR Colors		
1	White - Red		
2	White - Black		
3	White - Yellow		
4	White - Violet		
5	Red - Black		
6	Red - Yellow		
7	Red - Violet		
8	Black - Yellow		
9	Black - Violet		
10	Yellow - Violet		
11	Blue - Orange		
12	Blue - Green		
13	Blue - Brown		
14	Blue - Slate		
15	Orange - Green		

### SUPER-UNIT BINDER COLORS FOR FULL COLOR CODE

S.U. BINDER Color	PAIR RANGE			
White	1 - 600			
Red	601 - 1200			
Black	1201 - 1800			
Yellow	1800 - 2400			

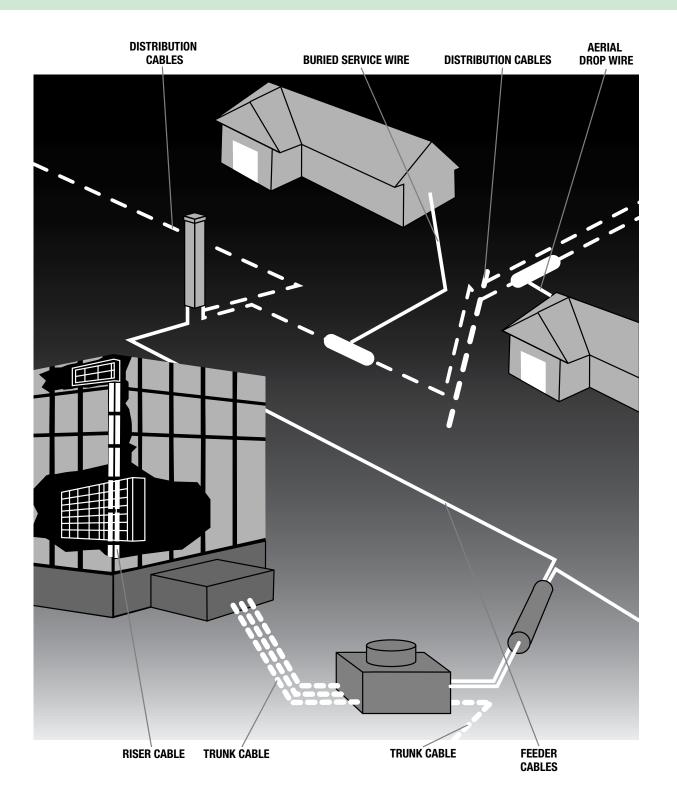


# **Color Code Chart**



# SUPER-UNIT BINDER COLORS FOR MIRROR IMAGE

# **Local Distribution Network**





# **Telecommunications**

# **Technical Information**

# Glossary

- Abrasion Resistance: Ability of material or cable to resist surface wear.
- Accelerated Aging: A test performed on material or cable meant to duplicate longterm environmental conditions in a relatively short period of time.
- Access line: A local access connection (fixed or wireless) between a customer's premises and a carrier's central office switch.
- Aerial Cable: Cable suspended in the air on poles or other overhead structures.
- Air Core: A telephone outside plant cable construction for aerial and duct installation in which the insulated conductors in the cable core are surrounded by air.
- Alloy: A combination of two or more metals to form a new or different metal, having specific or desirable qualities.
- ALPETH: Telephone cable sheath employing a corrugated aluminum shield and an outer polyethylene jacket.
- ALVYN: A cable sheath consisting of a coated corrugated aluminum (AL) shield and an outer polyvinyl chloride (VYN) jacket.
- American Wire Gauge: (AWG) A standard used in the determination of the physical size of a conductor determined by its circular mil area. AWG is used in the U.S. to designate the size of wire and conductors. The gauge numbers are retrogressive—the larger the gauge number the smaller the wire.
- Analog Signal: A signal in which the intelligence is represented by continuously varying quantities.
- Anneal: The act of softening a metal, such as copper, by means of heat to render it less brittle.
- Armor: Mechanical protection usually accomplished by a metallic layer of tape, braid or served wires. Normally found only over the outer sheath.
- **ASP:** A cable sheath consisting of a corrugated aluminum (A) shield, corrugated steel (S) shield, flooding compound and an outer polyethylene (P) jacket.
- **ASTM:** Abbreviation of the American Society for Testing and Materials, a non-profit industry-wide organization which publishes standards, methods of test, recommended practices, definitions and other related material.
- Attenuation: Power loss in an electrical system. In cables, generally expressed in dB per unit length, usually 1,000 feet.

- Bandmarking: A circumferential color band applied to an insulated conductor at regular intervals for identification.
- **Bandwidth:** The frequency range of electrical signals transmitted.
- Bare Conductor: A conductor not covered with insulating material.
- **Binder:** Usually spirally wrapped tape or thread used for holding assembled cable components in place.
- Bit Rate: The rate at which binary or code information is transmitted over a communicating channel. Measured in bits per second.
- **Braid:** A fibrous or metallic group of filaments interwoven cylindrically to form a covering over one or more insulated conductors.
- **Buried Cable:** A cable installed directly in the earth without use of underground conduit. Also called direct buried cable.
- Buried Distribution and Service Wires: Telephone wires which are designed to provide buried service extensions from distribution cables to the subscriber's protector.
- **Cable:** Insulated conductors or twisted group of insulated conductors used for the transmission of electrical energy.
- **Cabling:** The act of twisting together two or more insulated components by machine to form a cable.
- **Capacitance:** The ratio of the electrostatic charge on a conductor to a potential difference between the conductors required to maintain that charge.
- **Carrier:** A telco that owns and operates its own network and provides transmission services to other service providers through its facilities.
- **Central Office:** A building housing the telephone switching apparatus.
- Characteristic Impedance: A frequency-dependent resistance which quantifies the complex opposition to current flow offered by a transmission line.
- **Circuit:** A complete path over which electrons can flow from the negative terminals of a voltage source through parts and wires to the positive terminals of the same voltage source. When the continuity of the circuit is broken it is called an open circuit; when continuity is maintained it is called a closed circuit.
- **Coaxial Cable:** A cable consisting of two cylindrical conductors with a common axis, separated by a dielectric.

- **Cold Bend:** A laboratory test procedure whereby a sample of wire or cable is wound around a mandrel of a specified size at a specified temperature for a given number of turns at a given rate of speed and examined for defects.
- Color Code: A color system for circuit identification by use of solid colors, tracers, braids, surface marking, etc.
- **Compound:** A term used to designate an insulating or jacketing material made by mixing two or more ingredients. To Compound: the combining of two or more different materials to make one material.
- **Concentricity:** In a wire or cable, the measurement of the location of the center of the conductor with respect to the geometric center of the circular insulation.
- **Conductance:** A measure of the ability of a conductor to carry an electrical charge. Conductance is a ratio of the current flow to the potential difference causing the current flow.
- **Conductivity:** A term used in describing the capability of a material to carry an electrical charge. Usually expressed as a percentage of copper conductivity—copper being one hundred (100%) percent. Conductivity is expressed for a standard configuration of conductor.
- **Conductor:** Any material capable of easily carrying an electrical charge.
- **Conduit:** A tube or trough for protecting electrical wires and cables. It may be a rigid or flexible tube into which insulated electrical wires are pulled.
- Connector: A device used to physically and electrically connect two or more conductors.
- **Continuity Check:** A test to determine whether electrical current flows continuously throughout the length of a single wire or individual wires in a cable.
- **Core:** In cables, a component or assembly of components over which additional components (shield, sheath, etc.) are applied.
- Crosstalk: Signal interference between nearby conductors caused by the pickup of stray energy.
- **CSA:** Abbreviation for Canadian Standards Association, a non-profit, independent organization which operates a listing service for electrical and electronic materials and equipment. The Canadian counterpart of the Underwriters Laboratories.

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# Glossary

- Current Carrying Capacity: The maximum current an insulated conductor can safely carry without exceeding its insulation and jacket temperature limitations.
- **Decibel (dB):** A standard of unit based on a logarithmic scale for expressing transmission gain or loss and relative power levels.
- **Dielectric:** Any insulating medium which intervenes between two conductors and permits electrostatic attraction and repulsion to take place across it.
- Dielectric Constant: The ratio of the capacitance of an insulated wire with that of the same wire uninsulated in air.
- **Dielectric Strength:** The voltage which an insulation can withstand before breakdown occurs. Usually expressed as a voltage gradient (such as volts per mil).
- **Dielectric Test:** A test in which a voltage higher than the rated voltage is applied for a specified time to determine the adequacy of the insulation under normal conditions.
- Digital Signal: A signal in which the data is represented by a series of discrete steps or pulses.
- Digital Subscriber Line (DSL): A technology used to increase the capacity of copper telephone lines.
- **Distribution Cable:** The cable portion of the local outside plant network between the feeder cable and the subscriber.
- **Drain Wire:** An uninsulated wire in a cable used to facilitate shield connection.
- **Drawing:** In the manufacture of wire, pulling the metal through a die or series of dies in order to reduce the diameter to a specified size.
- **Drop Wire:** A wire designed for use as service drops from aerial distribution terminals to subscriber station protectors.
- **Duct:** An underground or overhead tube for carrying electrical conductors.
- Eccentricity: Like concentricity, a measure of the center of a conductor's location with respect to the circular cross-section of the insulation; expressed as a percentage of center displacement of one circle within the other.
- **Elongation:** The fractional increase in length of a material stressed in tension.
- **Embossing:** A means of marker identification by means of thermal indentation leaving raised lettering on a cable's sheath material.

- Ethernet: A local area network (LAN) which uses the CSMA/CD (Carrier Sense Multiple Access with Collision Detection) access method on a bus topography.
- Extrusion: Method of continuously forcing plastic, rubber, or elastomer material through an orifice to apply insulation or jacketing over a conductor or cable core.
- Fiber: A thread or threadlike structure. Also, a single discrete element used to transmit optical (lightwave) information.
- Fiber Optics: A lightwave or optical communications system in which electrical information is converted to light energy, transmitted to another location through optical fibers and then converted back into electrical information.
- Figure 8 Cable: An aerial cable configuration in which the conductors and steel strand, which supports the cable, are integrally jacketed. A cross-section of the finished cable approximates the figure "eight".
- Filled Cable: A telephone outside plant cable construction for direct buried installation in which the cable core is filled with a material that will prevent moisture from entering or passing through the cable.
- Flame Resistance: Measure of a material's ability not to propagate flame once the source of heat is removed.
- Flammability: Measure of a material's ability to support combustion.
- Flex Life: The measurement of the ability of a conductor or cable to withstand repeated bending.
- Foam Skin Cable: A cable utilizing a foamed polyolefin inner layer covered by a solid polyolefin skin as the conductor insulation.
- **Frequency:** The number of cycles, now expressed as hertz, by an alternating current in one second. The hertz is equivalent to the older unit cycles per second.
- **Gauge:** A term used to denote the physical size of a wire.
- Ground: 1) An electrical term meaning to connect to the earth or other large conducting body to serve as an earth thus making a complete electrical circuit;
  2) A wire intended to be used for grounding (also called grounding conductor).
- Hard Drawn Copper Wire: Copper wire that has been drawn to size and not annealed.
- Helical Stripe: A continuous, colored, spiral stripe applied over the outer perimeter of an insulated conductor for circuit identification purposes.

- **Hygroscopic:** Capable of absorbing moisture from the air.
- Impact Strength: A test designed to ascertain the abuse a cable configuration can absorb, without physical or electrical breakdown, by impacting with a given weight, dropped from a given height, in a controlled environment.
- Impedance: The total opposition that a circuit offers to the flow of alternating current at a particular frequency. It is a combination of resistance R and reactance X, measured in ohms.
- **Inductance:** The property of a circuit or circuit element that opposes a change in current flow, thus causing current changes to lag behind voltage changes. It is measured in henrys.
- Inside Wire: Wire designed to carry a telephone circuit(s) through the customer's premises.
- Insulated Wire: A conductor of electricity covered with a non-conducting material.
- **Insulation:** A non-conductive material usually surrounding or separating two conductive materials. Often called the dielectric in a radio frequency cable.
- **Insulation Resistance:** That property of an insulating material which resists electrical current flow through the insulating material when a potential difference is applied.
- Integrated Service Digital Network (ISDN): A digital data communications network providing full integration of data, voice and video.
- Interconnect Companies: Companies which sell, install and maintain telephone systems for end users.
- Interexchange Carrier (IXC): A long-distance telephone carrier authorized to carry transmissions between local access and transport areas.
- Internet Protocol (IP): The set of rules that defines how information is packaged and addressed for delivery across the Internet.
- Internet Service Provider (ISP): A company that offers consumers and businesses access to the internet and other related services.
- Interstices: In cable construction, the spaces, valleys or voids between or around the cable's components.
- Irradiation: In insulations, the exposure of the material to high energy emissions for the purpose of favorably altering the molecular structure by cross-linking.

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# Glossary

- Jacket: A material covering over a wire insulation or an assembly of components. An overall jacket on a complex cable grouping. Also called a sheath.
- Jumper Wire: PVC insulated connectors twisted together and used for cross-connecting on distributing frames.
- Kilo: A numerical prefix denoting 1000 (10<sup>3</sup>).
- Lay: A term used in cable manufacturing to denote the distance of advance of one member of a group of spirally twisted members, in one turn, measured axially.
- Life Cycle: A test performed on a material or configuration to determine the length of time before failure in a controlled, usually accelerated, environment.
- Local Area Network (LAN): A network spanning a limited geographical area, providing data communications between computers and peripherals, and switching equipment.
- Local Exchange Carrier (LEC): A telephone company that provides the dial tone to the end consumer. Incumbent local exchange carriers (ILECs) are the Bell Operating companies and smaller independent phone companies that originally provided local phone services to specific geographic communities on a regulated, monolopy basis. CLECs are competitive local carriers created out of the Telecommunications Act of 1996.
- Local Number Portability (LNP): The practice of letting a customer switch service from one local company to another without having to change their telephone number.
- **Longitudinal Wrap:** A tape applied longitudinally with the axis of the core being covered, as opposed to a helical, or spiral, tape wrapped core.
- Marker Tape: A tape laid parallel to the conductors under the sheath in a cable which is imprinted with the manufacturer's name and the specification to which the cable is made. Other information such as date of manufacture may also be included.
- Marker Thread: A colored thread laid parallel and adjacent to the strands of an insulated conductor which identifies the cable manufacturer. It may also denote a temperature rating or the specification to which the cable is made.
- Mil: 1/1000 of an inch.
- Moisture Resistance: The ability of a material to resist absorbing moisture from the air or when immersed in water.
- Multi-Conductor: More than one conductor within a single cable complex.

- Multimedia Cable: A single communication cable used for the transmission of audio, data and video signals.
- Mutual Capacitance (Cm): The capacitance between two conductors when all other conductors, including the shield, are short circuited to ground.
- National Electrical Code (NEC): A consensus standard published by the National Fire Protection Association (NFPA) and incorporated in OSHA regulations.
- Network: 1) Series of points connected by communications channels; 2) Network of telephone lines normally used for dialed telephone calls; 3) Network of communications channels connected to the use of one customer. For purposes of data communications applications, components in a common geographical area, served by a common computer, or performing a common function may be defined as one network. Also defined as one or more interconnected data links.
- **Ohm:** A unit of electrical resistance, the resistance of a circuit in which a potential difference of one volt produces a current of one ampere.
- **OSHA:** Abbreviation for Occupational Safety and Health Act. Specifically the Williams-Steiger law passed in 1970 covering all factors relating to safety in places of employment.
- Outside Plant (OSP): All cables and wires extending outward from the network protectors on the main distribution frame to connect the terminal equipment to the Outside Plant.
- Pair: Two wires forming a single circuit, held together by twisting, binding, or a common jacket.
- **Parallel:** A construction in which two or more conductors are laid parallel and surrounded and separated by an insulating material.
- **PASP:** A cable sheath consisting of an inner polyethylene (P) jacket, corrugated aluminum (A) shield, corrugated steel (S) and an outer polyethylene (P) jacket.
- **PIC:** An abbreviation for Plastic Insulated Conductor: conductors covered with an extruded coating of plastic.
- Plasticizer: A chemical agent added in compounding plastics to make them softer and more flexible.
- Plenum: The air return path of a central air handling system, either ductwork or open space such as that over a suspended ceiling.

- Plenum Cable: Cable approved by Underwriters Laboratories for installation in plenums without the need for conduit.
- **Polyethylene:** A family of insulating materials derived from polymerization of ethylene gas. They are basically pure hydrocarbon resins with excellent dielectric properties.
- **Polymer:** A material having molecules of high molecular weight formed by polymerization of lower molecular weight molecules.
- Polymerization: A chemical reaction in which low molecular weight molecules unite with each other to form molecules with higher molecular weights.
- **Polyolefin:** Any of the polymers and copolymers of the ethylene family of hydrocarbons.
- **Polypropylene:** A thermoplastic similar to polyethylene but stiffer and having a higher softening point (temperature) and excellent electrical properties.
- Polyvinyl Chloride (PVC): A general purpose thermoplastic widely used for wire and cable insulations and jackets.
- Pressurization: The use of pressurized gas or dry air inside Air Core cables to prevent the entry of water at faulty splices or minor sheath cracks. It can also trigger an alarm when major faults occur and can assist in locating the damaged areas.
- **Primary Insulation:** The first layer of nonconductive material applied over a conductor, whose prime function is to act as electrical insulation.
- **Propagation Delay:** Time required for a signal to pass from the input to the output of a device.
- **Propagation Time:** Time required for an electrical wave to travel between two points on a transmission line.
- Pulling Eye: A device which may be fastened to the conductor(s) or jacket of a cable or formed by or fastened to the wire armor and to which a hook or rope may be directly attached in order to pull the cable through a duct.
- **Put-Up:** Refers to the packaging of wire and cable. The term itself refers to the quantity of product that is ready to be stored or shipped.

### Quad: A four-conductor unit.

Rated Temperature: The maximum temperature at which an electric component can operate for extended periods without loss of its basic properties.

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# Glossary

- Rated Voltage: The maximum voltage at which an electric component can operate for extended periods without undue degradation or safety hazard.
- Regional Bell Operating Company (RBOC): A holding company formed by the divestiture of AT&T to provide both regulated and nonregulated telephone services.
- **Resistance:** The property of an electric circuit which determines for a given current the rate at which electric energy is converted into heat and has a value such that the current squared multiplied by the resistance gives the power converted.

### Ring Banding: See Bandmarking.

- **Rip Cord:** A cord placed directly under the jacket of a cable in order to facilitate stripping (removal) of the jacket.
- **Riser Cable:** The vertical section of a building cable extending from one floor to another.
- Screened Cables: A cable core design where an aluminum shield divides the cable core into two electrically separate compartments.
- Separator: Pertaining to wire and cable, a layer of dielectric material such as textile, paper, etc., which is placed between a conductor and its insulation, between a cable jacket and the components it covers, or between various components of a multi-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.
- Sheath: The combination of a metallic shield and an extruded plastic jacket applied as the outermost covering on a cable. In the absence of a shield, the extruded jacket may be designated as a sheath.
- Shield: A metallic layer placed around an insulated conductor or group of conductors to prevent electrostatic or electromagnetic interference between the enclosed wires and external fields. This shield can be braided or served wires, foil wrap, foil backed tape, a metallic tube, or conductive vinyl or rubber. When a metallic braid of tinned or bare copper is applied over the insulated conductor, the shielding effectiveness is in proportion to the amount of coverage, usually expressed as a percentage.
- **Spark Test:** A test designed to locate pinholes in a wire's insulation by application of an electrical potential across the material for a very short period of time while the wire is drawn through an electrode field with one end of the wire grounded.
- **Spiral Wrap:** A term given to describe the helical wrap of a tape or thread over a core.

- **STALPETH:** A cable sheath consisting of a corrugated steel (ST) shield applied over a corrugated aluminum (AL) shield and an outer polyethylene (PETH) jacket.
- Station Wire: Wire used inside and/or outside in station installations from the station protector to the telephone terminal block.
- **Stranding:** The manufacturing process by which cable components are assembled around a central piece, forming a round core.
- Switchboard Cable: A cable used within and between the central office main frames and the switchboard.
- T1: A common carrier circuit leased (private line facility) which is the standard method of interconnecting digital communications systems in North America. The line operates at a rate of 1.544Mbps. With DS-1 signaling, the facility provides twenty-four 64 Kbps channels.
- T-Carrier (AT&T): A hierarchy of digital systems designed to carry speech and other signals in digital form, designated T1, T2, and T4. T1 carrier has 24 PCM voice channels.
- Tank Test: A voltage dielectric test in which the wire or cable test sample is submerged in water and voltage is applied between the conductor and water as ground.
- Temperature Rating: The maximum temperature at which the insulating material may be used in continuous operation without loss of its basic properties.
- Tensile Strength: A term denoting the greatest longitudinal tensile stress a substance can bear without tearing apart or rupturing.
- Terminating Cable: A multi-paired cable usually with tinned conductors and always with fire-resistant insulation that is used primarily between the cable vault and the main distributing frame.
- Thermoplastic: Material that will resoften and distort from its formed shape by heating above a critical temperature peculiar to the material.
- **Tinned Wire:** Copper wire that has been coated with a layer of tin or solder to simplify soldering.
- **Tracer Stripe:** When more than one color coding stripe is required, the first, or widest, stripe is the base stripe; the other, usually narrower stripes, being termed tracer stripes.
- Twisted Pair: Two insulated conductors spiraled together.
- UL: Abbreviation for Underwriters Laboratories, a non-profit independent organization, which operates a listing service for electrical and electronic materials and equipment.

### **Unbundled Network Element Provider**

- **(UNE-P):** The wholesale purchase of all network elements from the RBOC, with the CLEC retaining the responsibility for integrating the elements together in order to complete connections and provide service.
- Velocity of Propagation: The speed at which a signal travels from a sender, through a transmission line and finally arrives at the receiver.
- **Voice Frequency:** Any of the frequencies that are audible to the human ear. For telephone transmission the range is generally from 300 to 3,400 Hz.
- **Volt:** The standard unit of electromotive force or electrical pressure. One volt is the amount of pressure that will cause one ampere of current to flow through one ohm of resistance.
- **Voltage:** The electromotive force or electrical pressure, measured in volts.
- Voltage Breakdown: Test to determine voltage at which insulation fails at a given temperature and time.
- Voltage Rating: The highest voltage that may be continuously applied to a wire in conformance with standards or specifications.
- VW-1: A test used by Underwriters Laboratories to classify wires and cables with regard to their resistance to burning. (Formerly designated as FR-1.)
- Wall Thickness: A term expressing the thickness of a layer of applied insulation or jacket.
- Wide Area Network (WAN): A network spanning a broad geographical area, providing data communications between computers and peripherals, and switching equipment.
- Wire: 1) A single piece of slender, flexible metal, ranging in approximate size from a piece that is difficult to bend by hand to a fine thread. 2) Several wires as in (1) twisted together.



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| 75133518               | 752470511              | 752579315              | 75277572               | 752878913              |
| 75150189               | 752471311              | 752581915              | 75277652               | 752879713              |
| 75150269               | 752472111              | 752582715              | 75277812               | 752885413              |
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| 751525723              | 752492911              | 752584315              | 752800313              | 752965414              |
| 751526523              | 752496011              | 752585015              | 752801113              | 752967014              |
| 751530723              | 752497811              | 752586815              | 752802913              | 752968814              |
| 75164388               | 752500912              | 752587615              | 752803713              | 752974614              |
| 75164615               | 752501712              | 752655116              | 752804513              | 752975314              |
| 75164795               | 752502512              | 752656916              | 752805213              | 752977914              |
| 75164875               | 752503312              | 752657716              | 752806013              | 752978714              |
| 75164955               | 752505812              | 752658516              | 752807813              | 752987814              |
| 75172615               | 752506612              | 752660116              | 752808613              | 752988614              |
| 75172795               | 752507412              | 752661916              | 752809413              | 752990214              |
| 7517287 5              | 752508212              | 752662716              | 752810213              | 752991014              |
| 75173035               | 752509012              | 752666816              | 752811013              |                        |
| 75173295               | 752510812              | 752668416              | 752812813              |                        |
| 75173946               | 752511612              | 752669216              | 752813613              |                        |
| 75174026               | 752512412              | 752671816              | 752814413              |                        |

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