

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 ten different insulating colors and non-hygroscopic unit binders.

Different optional sheath designs 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 Outside Voice & Data 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 100Ω, Category 3 Backbone UTP Cables specified in TIA/EIA-568-B.

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Air Core Cable

Spec. 2003

RUS (REA) PE-22 AL

Core Construction:**Conductors:**

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

Insulation:

- Solid, high density polyethylene, 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 color-coded 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

Compliance:

- RUS (REA) Specification PE-22

Packaging:

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

**Nominal Cable Data**

CATALOG NUMBER	PAIRS AWG	O.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	1.1	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	1.1	595	2500
7527062	200/22	1.4	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	1.2	745	2500
7527195	300/24	1.4	1090	2500
7527203	400/24	1.6	1430	2500
7527211	600/24	1.9	2120	1250
7527229	900/24	2.3	3110	1250

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

Figure 8 Air Core Cable

RUS (REA) PE-38 AL

Spec. 2003-F8**Nominal Cable Data**

CATALOG NUMBER	PAIRS AWG	O.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	0.4	220	5000
2012011	12/22	0.49	260	5000
2012000	25/22	0.61	335	5000
2012001	50/22	0.81	485	5000
2012002	100/22	1.1	775	2500
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

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

Core Construction:**Conductors:**

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

Insulation:

- Solid, high density polyethylene, 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 color-coded 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:

- RUS (REA) Specification PE-38

Packaging:

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



Air Core ALPETH Cable

Spec. 2101

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, 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 color-coded unit binder

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 non-returnable wood reels when requested
- Non-standard packaging is also available

**Nominal Cable Data**

CATALOG NUMBER	PAIRS AWG	O.D. INCHES	WEIGHT LBS/MFT	STANDARD LENGTH (FT)
7506967	25/19	0.79	320	5000
7506975	50/19	1.1	595	3000
7506983	100/19	1.5	1110	3000
7506991	200/19	1.9	2150	1000
7510506	300/19	2.4	3190	1000
7506876	25/22	0.61	185	5000
7506884	50/22	0.79	320	3000
7506892	100/22	1.1	595	3000
6968770	200/22	1.5	1120	3000
7506900	300/22	1.7	1650	1000
6968762	400/22	1.9	2170	1000
6987275	600/22	2.3	3220	1000
6937817	900/22	2.8	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	1.1	735	1000
6964811	300/24	1.4	1070	1000
6964795	400/24	1.5	1400	1000
6964787	600/24	1.9	2080	1000
6983381	900/24	2.2	3050	1000
6937833	1200/24	2.5	4050	1000
7506777	1500/24	2.8	5020	800
6937841	1800/24	3.1	5990	800
7506934	25/26	0.47	95	5000
7506942	50/26	0.57	155	3000
7506959	100/26	0.73	265	3000
6982037	200/26	0.97	490	1000
6982029	300/26	1.1	695	1000
7503485	400/26	1.3	905	1000
6987218	600/26	1.5	1320	1000
7508252	900/26	1.8	1970	1000
6937858	1200/26	2.1	2600	1000
6937866	1500/26	2.3	3220	1000
7506785	1800/26	2.5	3840	1000
6937767	2100/26	2.7	4460	1000

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

Figure 8 Air Core ALPETH Cable

Spec. 2102

BELL SYSTEM TYPE BHBS (19 AWG) BKMS (24 AWG)
 BHAS (22 AWG) BKTS (26 AWG)



Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	O.D. INCHES	WEIGHT LBS/MFT	STANDARD LENGTH (FT)
7516461	25/19	0.88	480	5000
7516479	50/19	1.2	745	2500
7516487	25/22	0.70	345	5000
7516495	50/22	0.88	480	5000
7517261	100/22	1.2	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	1.2	885	2500
7517337	25/26	0.56	255	5000
7513286	50/26	0.66	315	5000
7517345	100/26	0.81	425	5000
7517360	200/26	1.0	640	5000
7517378	300/26	1.2	845	5000

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

Core Construction:

Conductors:

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

Insulation:

- Solid, high density polyethylene, 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 color-coded 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 non-returnable wood reels when requested
- Non-standard packaging is also available

Figure 8 Air Core ALPETH-GP Cable

Spec. 2108

BELL SYSTEM TYPE BHPB (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, 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 or 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

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):

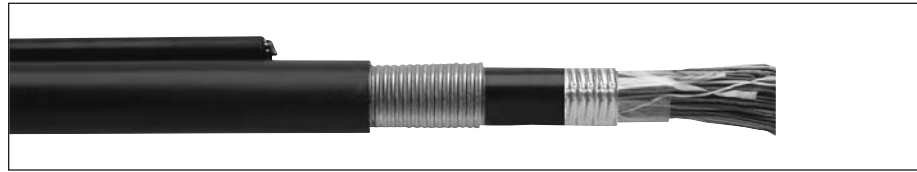
- Intended for aerial installation where additional mechanical protection is required

Compliance:

- Telcordia (Bellcore) Specification GR-421-CORE

Packaging:

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



Nominal Cable Data

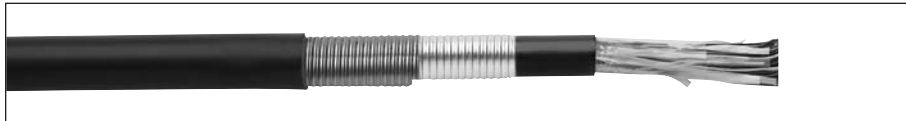
CATALOG NUMBER	PAIRS AWG	O.D. INCHES	WEIGHT LBS/MFT	STANDARD LENGTH (FT)
7517394	25/19	1.1	675	5000
7517402	50/19	1.4	1000	2500
7517410	25/22	0.95	505	5000
7517428	50/22	1.1	680	5000
7517444	100/22	1.4	1010	2500
7517451	25/24	0.88	440	5000
7517469	50/24	1.0	555	5000
7517485	100/24	1.2	775	5000
7517501	200/24	1.5	1160	2500
2018023	300/24	1.7	1585	2500
7517519	25/26	0.81	390	5000
7517527	50/26	0.91	465	5000
7517535	100/26	1.1	610	5000
7517550	200/26	1.3	875	5000
7517568	300/26	1.5	1110	2500

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

Air Core Bonded PASP Cable

Spec. 2107

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



Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	O.D. INCHES	WEIGHT LBS/MFT	STANDARD LENGTH (FT)
7502180	25/19	0.90	440	5000
7502198	50/19	1.2	750	3000
7502214	100/19	1.6	1365	3000
7502230	200/19	2.1	2475	1000
7502248	300/19	2.5	3640	1000
7503543	25/22	0.72	280	5000
7503550	50/22	0.90	445	3000
7503576	100/22	1.2	750	3000
7503592	200/22	1.6	1360	1000
7503600	300/22	1.8	1940	1000
7503618	400/22	2.1	2500	1000
7503626	600/22	2.5	3665	1000
7503634	900/22	3.0	5280	700
7503659	25/24	0.64	205	5000
7503667	50/24	0.77	320	3000
7503683	100/24	0.98	525	3000
7503709	200/24	1.3	905	1000
7503717	300/24	1.5	1285	1000
7503725	400/24	1.7	1675	1000
7502073	600/24	2.0	2410	1000
7502040	900/24	2.4	3465	1000
7502081	1200/24	2.7	4550	900
7502065	1500/24	3.0	5580	900
7502057	1800/24	3.3	6595	800
7502123	25/26	0.57	165	3000
7503758	50/26	0.67	235	3000
7503774	100/26	0.82	370	3000
7503790	200/26	1.1	625	1000
7503808	300/26	1.2	865	1000
7503816	400/26	1.4	1100	1000
7502024	600/26	1.7	1605	1000
7502032	900/26	2.0	2300	1000
7502099	1200/26	2.2	2985	1000
7503824	1500/26	2.4	3655	1000
7503832	1800/26	2.6	4325	1000
7503840	2100/26	2.8	4960	900

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

Core Construction:

Conductors:

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

Insulation:

- Solid, high density polyethylene, 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 color-coded unit binder

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 non-returnable wood reels when requested
- Non-standard packaging is also available

Air Core "S" Screened Bonded PASP Cable

Spec. 2112

BELL SYSTEM TYPE KHAH (22 AWG)

Core Construction:**Conductors:**

- Solid, annealed copper; size 22 AWG

Insulation:

- Solid, high density polyethylene, 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:

- The twisted pairs are assembled into 12, 13 and 25 pair units, or into 50 pair multi-units
- 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

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):

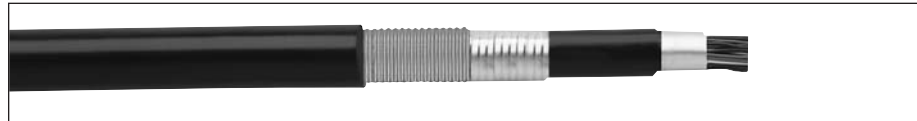
- Intended for pressurized direct buried installation in situations in which resistance to lightning and mechanical damage is required
- Designed for digital two-way T-Carrier signal operation under one cable sheath

Compliance:

- Telcordia (Bellcore) Specification GR-421-CORE

Packaging:

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

**Nominal Cable Data**

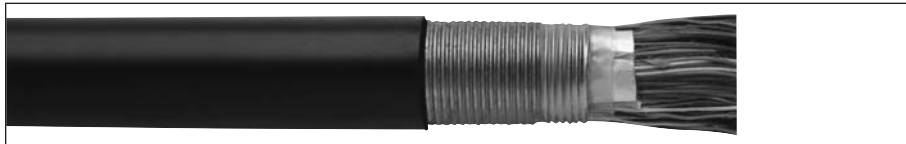
CATALOG NUMBER	PAIRS AWG	O.D. INCHES	WEIGHT LBS/MFT	STANDARD LENGTH (FT)
7511835	28/22	0.85	345	5000
7511843	54/22	0.98	505	5000
7511850	106/22	1.2	825	5000
7511868	158/22	1.5	1150	4000
7511876	210/22	1.6	1460	2500
7511884	314/22	1.9	2090	2500
7511892	418/22	2.2	2670	2000
7511900	616/22	2.6	3840	1000

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

Air Core Foam Skin Bonded STALPETH Cable

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

Spec. 2106



Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	O.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

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

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

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 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 non-returnable wood reels when requested
- Non-standard packaging is also available

Foam Skin ALVYN Riser For Voice & Digital Transmission Type CMR

Spec. 2507
Bell System Type: ARMM (24 AWG)
ARTM (26 AWG)

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 34-35

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

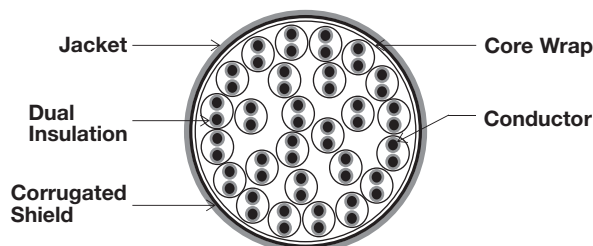


CATALOG NUMBER	PAIRS AWG	O.D. INCHES	WEIGHT LBS/MFT	STANDARD LENGTH (FT)
2019000	25/24	0.53	142	5000
2019001	50/24	0.66	234	5000
7507601	100/24	0.85	410	5000
7507619	200/24	1.20	760	2500
7507627	300/24	1.40	1105	2500
7507635	400/24	1.50	1445	2500
7507643	600/24	1.90	2150	1250
7507650	900/24	2.20	3170	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	200/26	0.92	495	5000
7507544	300/26	1.10	710	3000
7507551	400/26	1.20	930	3000
7507569	600/26	1.50	1365	1000
7507577	900/26	1.80	2025	1000
7507536	1200/26	2.00	2665	1000
7515026	1500/26	2.20	3285	1000
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

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

Electrical Characteristics

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



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 ten different insulating colors and non-hygroscopic 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 Outside Voice & Data 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 100Ω, Category 3 Backbone UTP Cables specified in TIA/EIA-568-B.

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Filled Solid Cable

Spec. 2002

RUS (REA) PE-39 AL

Core Construction:**Conductors:**

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

Insulation:

- Solid, high density polyethylene, 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 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:**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):

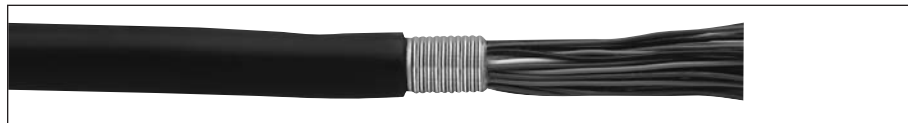
- Intended for duct and direct buried installations where protection against water and moisture entry is required and may also be installed aerially

Compliance:

- Rural Utilities Service (RUS)
7 CFR 1755.390
(REA PE-39)

Packaging:

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

**Nominal Cable Data**

CATALOG NUMBER	PAIRS AWG	O.D. INCHES	WEIGHT LBS/MFT	STANDARD LENGTH (FT)
7524507	6/19	0.60	150	5000
7524515	12/19	0.75	275	5000
7524523	25/19	0.97	490	5000
7524531	50/19	1.3	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	1.2	840	2500
7524911	150/22	1.4	1210	2500
7524606	200/22	1.7	1610	2500
7524929	300/22	2.0	2360	1250
7524614	6/24	0.43	80	5000
7524622	12/24	0.51	120	5000
7524648	25/24	0.61	185	5000
7524655	50/24	0.81	330	5000
7524663	75/24	0.92	450	5000
7524671	100/24	1.0	580	5000
7524689	150/24	1.2	820	5000
7524697	200/24	1.3	1030	2500
7524705	300/24	1.6	1550	2500
7524713	400/24	1.9	2000	2500
7524721	600/24	2.2	2960	1250
7524739	900/24	2.7	4310	1250
7524960	1200/24	3.1	5750	1000
7524978	1500/24	3.4	7100	800

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

Filled Solid 5-Mil Copper Cable

RUS (REA) PE-39 CU

Spec. 2002



Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	O.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	1.3	960	2500
7525058	6/22	0.45	105	5000
7525066	12/22	0.56	170	5000
7528565	18/22	0.66	235	5000
7525074	25/22	0.71	285	5000
7525082	50/22	0.95	505	5000
7528573	75/22	1.1	715	5000
7525090	100/22	1.2	885	2500
7528581	150/22	1.4	1260	2500
7525108	200/22	1.7	1670	2500
7528599	300/22	2.0	2440	1250
7528607	400/22	2.3	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	1.0	610	5000
7525181	150/24	1.2	855	5000
7525199	200/24	1.3	1070	2500
7525207	300/24	1.6	1610	2500
7525215	400/24	1.9	2070	2500
7525223	600/24	2.2	3040	1250
7525231	900/24	2.7	4440	1250
7528631	1200/24	3.1	5890	1000
7528649	1500/24	3.4	7230	800

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

Core Construction:

Conductors:

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

Insulation:

- Solid, high density polyethylene, 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 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 Shield:

- Corrugated, bare 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 Utilities Service (RUS)
7 CFR 1755.390
(REA PE-39)

Packaging:

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



Filled Solid Copper-Bearing Gopher-Resistant Cable

Spec. 2002

RUS (REA) PE-39 GR

Core Construction:

Conductors:

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

Insulation:

- Solid, high density polyethylene, 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 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 gopher-resistant 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 Utilities Service (RUS)
7 CFR 1755.390
(REA PE-39)

Packaging:

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



Nominal Cable Data

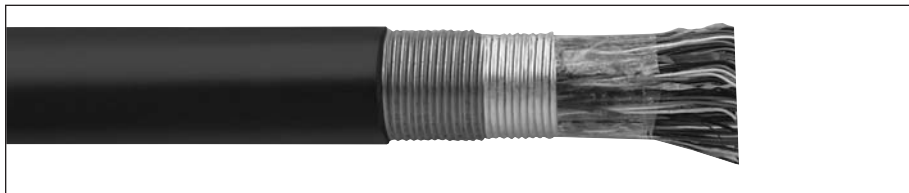
CATALOG NUMBER	PAIRS AWG	O.D. INCHES	WEIGHT LBS/MFT	STANDARD LENGTH (FT)
7528755	6/19	0.60	165	5000
7528763	12/19	0.75	315	5000
7528789	25/19	0.97	540	5000
7528797	50/19	1.3	980	2500
7528003	6/22	0.45	105	5000
7528011	12/22	0.56	170	5000
7528029	18/22	0.66	245	5000
7528037	25/22	0.71	290	5000
7528045	50/22	0.95	520	5000
7528052	75/22	1.1	730	5000
7528060	100/22	1.2	900	2500
7528078	150/22	1.4	1280	2500
7528086	200/22	1.7	1700	2500
7528094	300/22	2.0	2470	1250
7528854	400/22	2.3	3240	1250
7528102	6/24	0.43	95	5000
7528110	12/24	0.51	135	5000
7528128	18/24	0.57	175	5000
7528136	25/24	0.61	215	5000
7528144	50/24	0.81	375	5000
7528151	75/24	0.92	495	5000
7528169	100/24	1.0	630	5000
7528177	150/24	1.2	885	5000
7528185	200/24	1.3	1100	2500
7528193	300/24	1.6	1640	2500
7528201	400/24	1.9	2110	2500
7528219	600/24	2.2	3080	1250
7528227	900/24	2.7	4480	1250
7528235	1200/24	3.1	5950	1000

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

Filled Solid CACSP Cable

Spec. 2002

RUS (REA) PE-39 CACSP



Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	O.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	1.3	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.

Core Construction:

Conductors:

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

Insulation:

- Solid, high density polyethylene, 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 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 Utilities Service (RUS)
7 CFR 1755.390
(REA PE-39)

Packaging:

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



Filled Foam Skin Cable

Spec. 2007

RUS (REA) PE-89 AL

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 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:

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 Utilities Service (RUS)
7 CFR 1755.890
(REA PE-89)

Packaging:

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



Nominal Cable Data

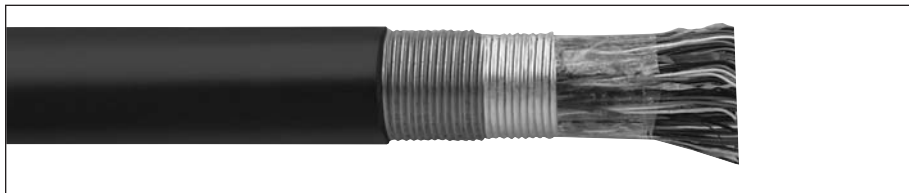
CATALOG NUMBER	PAIRS AWG	O.D. INCHES	WEIGHT LBS/MFT	STANDARD LENGTH (FT)
7525504	6/19	0.57	155	5000
7525512	12/19	0.66	230	5000
7525538	25/19	0.87	415	5000
7525595	6/22	0.47	100	5000
7525603	12/22	0.54	140	5000
7525629	25/22	0.65	230	5000
7525637	50/22	0.83	400	5000
7525652	100/22	1.1	725	2500
7525678	200/22	1.4	1330	2500
7525686	300/22	1.7	1950	1250
7525694	400/22	2.0	2570	1250
7525702	600/22	2.4	3900	1250
7525751	6/24	0.40	70	5000
7525769	12/24	0.46	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	1.1	690	5000
7525835	200/24	1.2	900	2500
7525843	300/24	1.4	1290	2500
7525850	400/24	1.6	1700	2500
7525868	600/24	1.9	2440	1250
7525876	900/24	2.3	3620	1250
7526973	1200/24	2.6	4720	1000
7526981	1500/24	2.9	5850	1000
7526999	1800/24	3.2	7040	1000

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

Filled Foam Skin CACSP Cable

Spec. 2007

RUS (REA) PE-89 CACSP



Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	O.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	1.1	790	2500
7526619	200/22	1.4	1430	2500
7526627	300/22	1.7	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	1.1	750	5000
7526734	200/24	1.2	980	2500
7526742	300/24	1.4	1370	2500
7526759	400/24	1.6	1800	2500
7526767	600/24	1.9	2590	1250
7526775	900/24	2.3	3790	1250
7071616	1200/24	2.6	4920	1000
7071624	1500/24	2.9	6110	1000
7071632	1800/24	3.2	7280	1000

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

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 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 aurally
- The addition of the steel tape armor provides increased mechanical protection and gopher resistance

Compliance:

- Rural Utilities Service (RUS)
7 CFR 1755.890
(REA PE-89)

Packaging:

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



Filled Foam Skin ALPETH Cable

Spec. 2111

BELL SYSTEM TYPE ANBA (19 AWG) ANMA (24 AWG)
 ANAA (22 AWG) ANTA (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 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:

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:

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



Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	O.D. INCHES	WEIGHT LBS/MFT	STANDARD LENGTH (FT)
2036300	25/19	0.86	415	5000
2036301	50/19	1.1	760	2500
2036302	100/19	1.5	1365	2500
2036303	200/19	2.0	2650	1250
2036304	300/19	2.4	3850	1250
2036307	25/22	0.64	225	5000
2036308	50/22	0.82	395	5000
2036309	100/22	1.1	730	2500
2036310	200/22	1.4	1305	2500
2036311	300/22	1.7	1985	1250
2036312	400/22	2.0	2580	1250
2036313	600/22	2.4	3910	1250
2036314	900/22	3.0	5855	1000
2036319	12/24	0.45	100	5000
2036320	25/24	0.59	170	5000
2036321	50/24	0.72	280	5000
2036322	100/24	0.90	485	5000
2036323	200/24	1.2	895	2500
2036324	300/24	1.4	1275	2500
2036325	400/24	1.6	1675	2500
2036326	600/24	1.9	2460	1250
2036327	900/24	2.3	3640	1250
2036328	1200/24	2.6	4780	1000
2036329	1500/24	2.9	6025	1000
2036330	1800/24	3.2	7260	1000
2036331	2100/24	3.5	8420	750
2036334	25/26	0.49	120	5000
2036335	50/26	0.61	165	5000
2036336	100/26	0.78	340	5000
2036337	200/26	0.96	575	5000
2036338	300/26	1.2	860	2500
2036339	400/26	1.3	1090	2500
2036340	600/26	1.6	1600	1250
2036341	900/26	1.9	2355	1250
2036342	1200/26	2.1	3095	1250
2036343	1500/26	2.4	3870	1250
2036344	1800/26	2.6	4540	1000
2036345	2100/26	2.9	5475	1000
2036346	2400/26	3.0	6120	1000

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

Filled Foam Skin ASP Cable

Spec. 2100

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



Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	O.D. INCHES	WEIGHT LBS/MFT	STANDARD LENGTH (FT)
6987481	25/19	0.86	465	5000
6987499	50/19	1.1	825	2500
6987507	100/19	1.5	1450	2500
6987515	200/19	2.0	2780	1250
6987523	300/19	2.4	4005	1250
6987572	25/22	0.70	280	5000
6987580	50/22	0.86	465	5000
6987606	100/22	1.1	790	2500
6987622	200/22	1.4	1410	2500
6987630	300/22	1.7	2060	1250
6987648	400/22	2.0	2710	1250
6987655	600/22	2.4	4050	1250
6987663	900/22	2.9	5900	1000
6987671	1200/22	3.3	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	1.2	955	2500
6987747	300/24	1.4	1350	2500
6987754	400/24	1.6	1775	2500
6987762	600/24	1.9	2570	1250
6987770	900/24	2.3	3770	1250
6987788	1200/24	2.6	4920	1000
6987796	1500/24	2.9	6060	1000
6987804	1800/24	3.2	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	1.0	670	5000
6987853	300/26	1.2	940	2500
6987861	400/26	1.3	1235	2500
6987879	600/26	1.6	1710	1250
6987887	900/26	1.9	2475	1250
6987895	1200/26	2.1	3220	1250
7507007	1500/26	2.4	4010	1250
7507015	1800/26	2.6	4685	1000
7502958	2100/26	2.8	5500	1000
7507023	2400/26	2.9	6160	1000
7512650	2700/26	3.2	7010	1000
7512668	3000/26	3.3	7610	750

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

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 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

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 installations in situations in which some additional mechanical and gopher protection is required

Compliance:

- Telcordia (Bellcore) Specification GR-421-CORE

Packaging:

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

Filled Foam Skin "S" Screened ASP Cable

Spec. 2109-F

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

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 multi-units
- 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 non-returnable wood reels when requested
- Non-standard packaging is also available



Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	O.D. INCHES	WEIGHT LBS/MFT	STANDARD LENGTH (FT)
7528250	28/22	0.74	325	9000
7528268	54/22	0.92	515	9000
7528276	106/22	1.2	885	6000
7528284	158/22	1.4	1230	4500
7528292	210/22	1.6	1630	3000
7528300	314/22	1.9	2370	3000
7528318	418/22	2.1	2970	2000
7528326	616/22	2.5	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	1.3	1075	4500

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

Broadband Composite Wire and Cable

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

Index	Page		
Drop Wire Bell System Type F Drop and RUS (REA) PE-7 Spec. 4295	23	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.	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.
C Rural Wire Bell System Type Spec. 4283	24	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.	Multi-pair Aerial and Filled Service Wires have the transmission performance capability of 100Ω, Category 3 Horizontal UTP Cables specified in TIA/EIA-568-B.
Ground Wire Bell System Type Spec. 2621/2622	25	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.	
Glass Supported Drop Wire 2, 3 and 6 Pair Bell System Type and RUS (REA) Spec. 4292-4294	26		
Multiple Pair Aerial Service Wire Bell System Type Spec. 4298	27		
Buried Service Wire Gopher-Resistant RUS (REA) PE-86 ICEA S-86-634 Spec. 4284	28		
Buried Service Wire Aluminum Shield ICEA S-86-634 Spec. 4287	29		
Buried Service Wire Gopher-Resistant Bell System Type Spec. 3503	30		
Buried Service Wire Bronze Shield Bell System Type Spec. 3502	31		

Drop Wire

Spec. 4295

BELL SYSTEM TYPE F DROP AND RUS (REA) PE-7



CATALOG NUMBER	PAIRS AWG	O.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD LENGTH (FT)
7021421	1/18 ¹ / ₂	0.130 x 0.255	24	1000 CL
7021496	1/18 ¹ / ₂	0.130 x 0.255	24	1000 PP
7021512	1/18 ¹ / ₂	0.130 x 0.255	24	1000 CL/CTN
2091004	1/18 ¹ / ₂	0.130 x 0.255	24	2500 RL

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

Product Construction:

Conductors:

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

Sheath:

- Black, flame-, weather- and abrasion-resistant 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 Utilities Service (RUS) Bulletin 1753 F-204 (REA PE-7)
- ANSI/CEA S-89-648-1993

Packaging:

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



C Rural Wire

BELL SYSTEM TYPE

Spec. 4283

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)



Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	O.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD LENGTH (FT)
3114733	1/14	0.160 x 0.280	37	5000 (21") RL
6307482	1/14	0.160 x 0.280	37	1000 CL
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

Spec. 2621



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	10,000 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)

Bare Ground Wire

BELL SYSTEM TYPE

Spec. 2622



Nominal Cable Data

CATALOG NUMBER	AWG	CABLE CODE	NOM. 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

Application(s):

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

Compliance:

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

Packaging:

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



Glass Supported Drop Wire 2, 3 and 6 Pair

BELL SYSTEM TYPE AND RUS (REA)

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 Utilities Service (RUS) Bulletin 1753 F-204

Packaging:

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



Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	O.D. (INCHES)	WEIGHT (LBS/MFT)	STANDARD LENGTH (FT)
2090008*	2/22	0.20 x 0.40	40	750 PP
2090010	2/22	0.20 x 0.40	40	1000 CL
2090012	2/22	0.20 x 0.40	40	750 CL
2090021	2/22	0.20 x 0.40	40	500 RS
2090053	2/22	0.20 x 0.40	40	3500 (28") RL
2090052*	3/22	0.28 x 0.44	54	600 PP
2090013	6/22	0.27 x 0.50	80	3500 (30") RL
2090014	6/22	0.27 x 0.50	80	400 CL
2090018*	6/22	0.27 x 0.50	80	400 PP

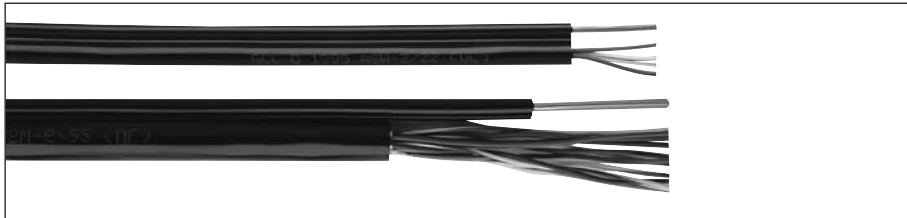
Data subject to change without notice. Contact your Customer Service Representative for latest information.

* These OVD wire items have sequential markings.

Multiple Pair Aerial Service Wire

Spec. 4298

BELL SYSTEM TYPE



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)

Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	O.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 RL
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.



Double Jacketed Buried Service Wire**Spec. 4284**

GOPHER-RESISTANT

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:

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

Compliance:

- ICEA S-86-634
- RUS 7 CFR 1755.860 (REA PE-86) for 2 and 3 pair constructions

Packaging:

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

**Nominal Cable Data**

CATALOG NUMBER	PAIRS AWG	O.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 information.

Double Jacketed Buried Service Wire

WITH ALUMINUM SHIELD

Spec. 4287



Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	O.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:

- 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:

- Intended for use in buried service application to the subscriber loops
- The 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	O.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 WITH BRONZE SHIELD

Spec. 3502



Nominal Cable Data

CATALOG NUMBER	PAIRS AWG	O.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
2095162	6/22	0.37	81	1000 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.

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 tape

Rip Cord:

- Under the jacket

Jacket:

- Black, linear low density polyethylene

Application:

- 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

Technical Information

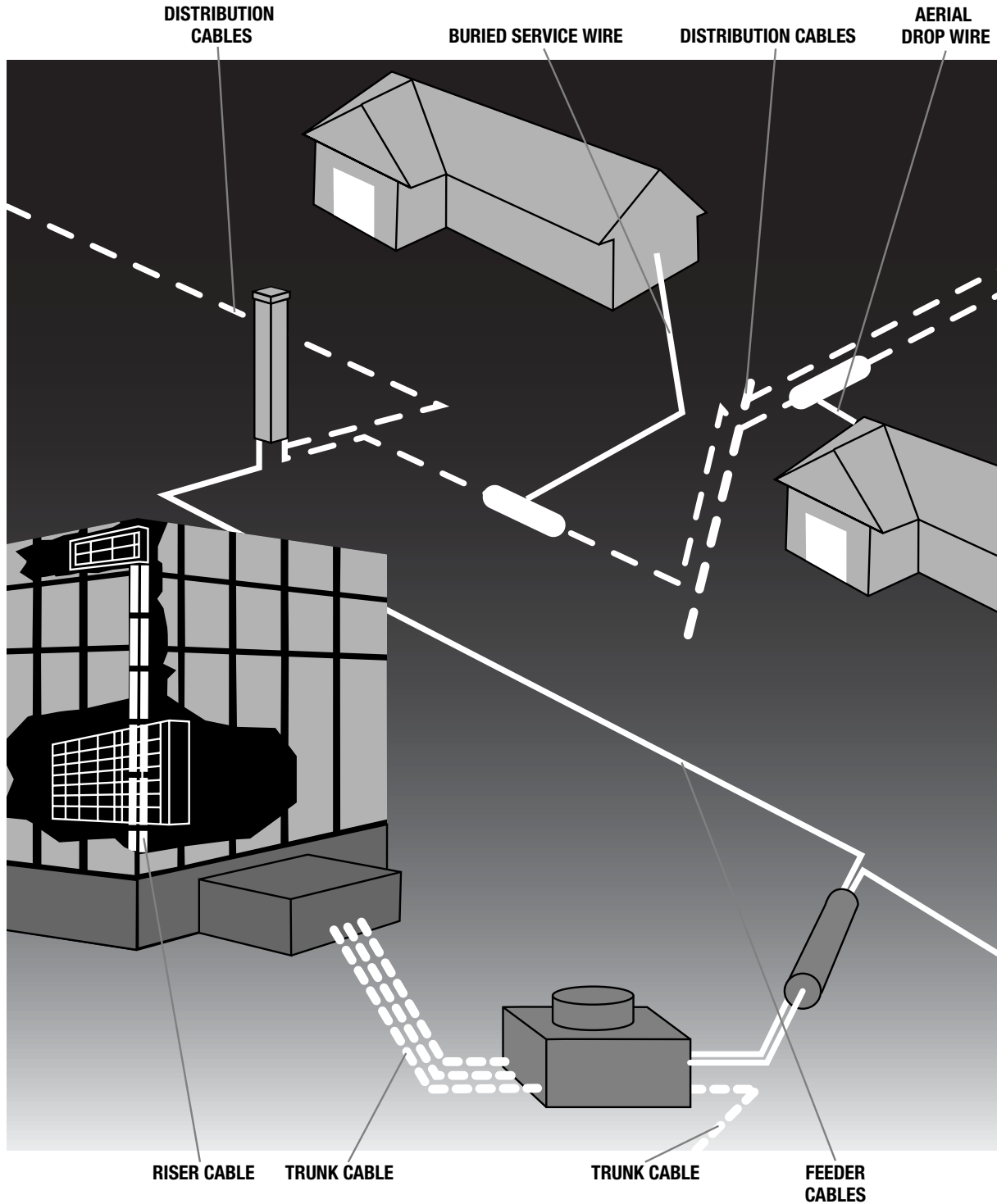
The complexity of today's Outside Voice and Data transmissions has generated an increasing demand for more technical information. In the current business world, customer service representatives, engineers, distributors and end-users do not have time to search for answers to their technical questions.

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 product-specific questions.

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

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Local Distribution Network



Color Code Chart

PLASTIC INSULATED COMMUNICATION CABLES

25 PAIR UNIT COLORS

PAIR NO.	RING COLOR	TIP COLOR	PAIR NO.	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 NO.	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 NO.	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 NO.	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

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

SPARE PAIRS FOR MIRROR IMAGE

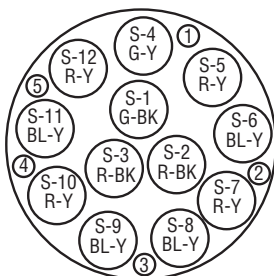
PAIR NO.	PAIR COLORS
1	White - Red
2	White - Black
3	White - Yellow
4	White - Violet
5	Red - Black
6	Red - Yellow
7	Red - Violet
8	Black - Yellow
9	Black - Violet
10	Yellow - Violet
11	Blue - Orange
12	Blue - Green
13	Blue - Brown
14	Blue - Slate
15	Orange - Green

SUPER-UNIT BINDER COLORS FOR FULL COLOR CODE

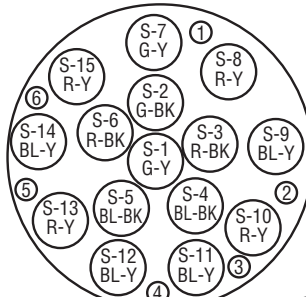
S.U. BINDER COLOR	PAIR RANGE
White	1 - 600
Red	601 - 1200
Black	1201 - 1800
Yellow	1801 - 2400

Color Code Chart

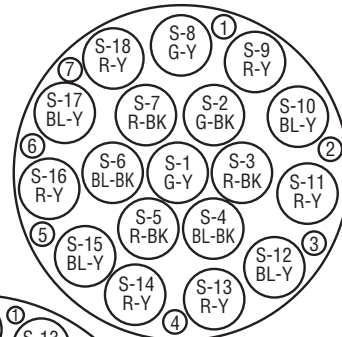
SUPER-UNIT BINDER COLORS FOR MIRROR IMAGE



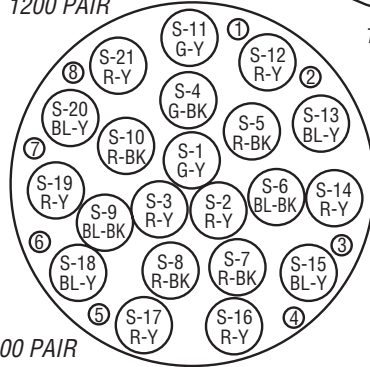
1200 PAIR



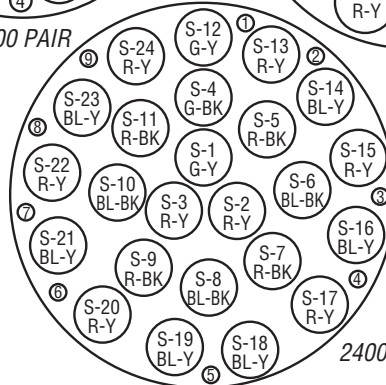
1500 PAIR



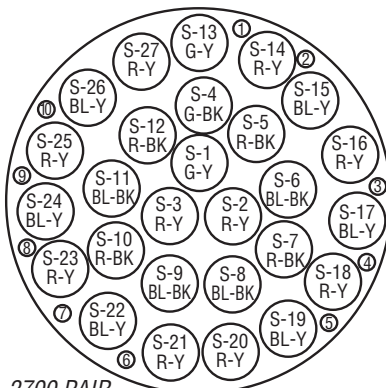
1800 PAIR



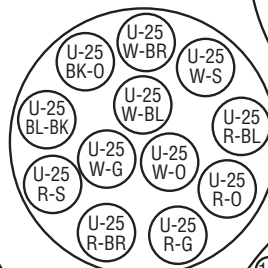
2100 PAIR



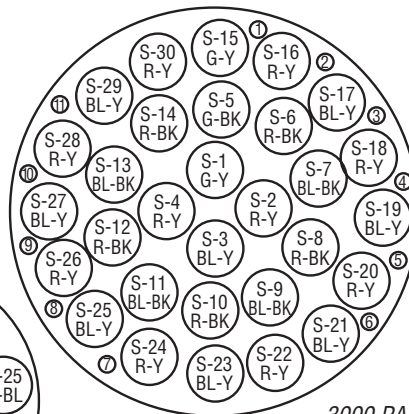
2400 PAIR



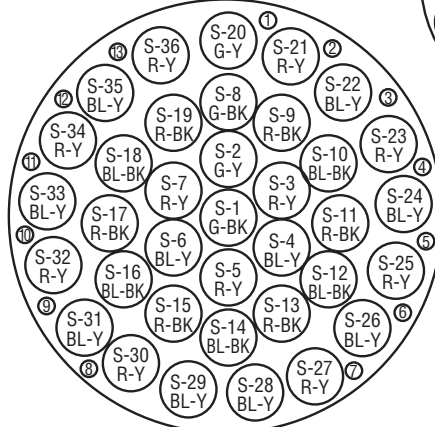
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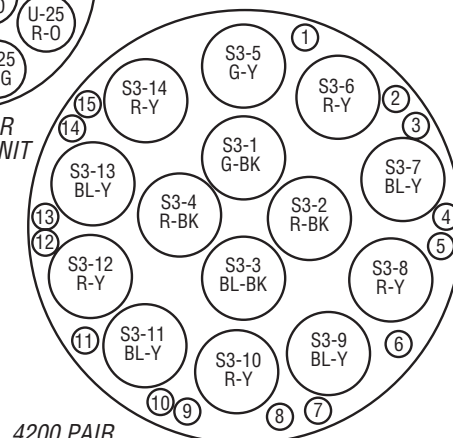
300 PAIR
SUPER-UNIT



3000 PAIR



3600 PAIR



4200 PAIR

Abbreviations/Acronyms

AFCEA	Armed Forces Communications and Electronics Association	LEC	Local Exchange Carrier
AM	Amplitude Modulation	LNP	Local Number Portability
Amp	Ampere	MAN	Metropolitan Area Network
ANSI	American National Standards Institute	Mbps	Megabits per Second
ASTM	American Society for Testing and Materials	MCF	Million Conductor Feet
AWG	American Wire Gauge	MHz	Megahertz
BCF	Billion Conductor Feet	MPF	Million Paired Feet
BICSI	Building Industry Consulting Services International	NATA	North American Telephone Association
bit	One Binary Digit	NEC	National Electric Code
BPF	Billion Paired Feet	NEMA	National Electrical Manufacturers Association
CLEC	Competitive Local Exchange Carrier	NESC	National Electric Safety Code
CO	Central Office	NEXT	Near-End Crosstalk
CRT	Cathode Ray Tube	OSHA	Occupational Safety & Health Act
CSA	Canadian Standards Association	OSP	Outside Plant
Cu	Copper	PIC	Plastic Insulated Conductor
dB	Decibel	POTS	Plain Old Telephone Service
DSL	Digital Subscriber Line	PSI	Pounds per Square Inch
EAX	Electronic Automatic Exchange	PVC	Polyvinyl Chloride
EIA	Electronics Industries Association	RBOC	Regional Bell Operating Company
ETPR	Extended Thermoplastic Rubber	RCDD	Registered Communications Distribution Designer
FCC	Federal Communications Commission	REA	Rural Electrification Administration
FDM	Frequency Division Multiplexing	RF	Radio Frequency
FEXT	Far-End Crosstalk	RUS	Rural Utilities Service
FM	Frequency Modulation	SDV	Switched Digital Video
HFC	Hybrid Fiber/Coax Cable Network	TDM	Time Division Multiplexing
Hz	Hertz	TIA	Telecommunications Industry Association (Associated with EIA & USTA & USTSA)
ICEA	Insulated Cable Engineers Association	UHF	Ultra High Frequency
IEEE	Institute of Electrical and Electronics Engineers	UL	Underwriters Laboratories
ILEC	Incumbent Local Exchange Carrier	UNE-P	Unbundled Network Element Provider
IP	Internet Protocol	USTA	United States Telephone Association
ISDN	Integrated Services Digital Network	USTSA	United States Telephone Suppliers Association
ISP	Internet Service Provider	V	Volt
IXC	Interexchange Carrier	VHF	Very High Frequency
k	Kilo (1 000)	W	Watt
kHz	Kilohertz	WAN	Wide Area Network
LAN	Local Area Network	XC	Cross Connect

Glossary

- Abrasion Resistance:** Ability of material or cable to resist surface wear.
- Accelerated Aging:** A test performed on material or cable meant to duplicate long-term 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.
- Ambient Temperature:** Any all-encompassing temperature within a given area.
- 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.
- Ampere: (AMP)** The unit of current. One ampere is the current flowing through one ohm of resistance at one volt potential.
- 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.
- Audio Frequency:** Pertaining to the band of frequencies which is audible to the human ear. Usually 20-20,000 Hz.
- 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.
- Baseband Signaling:** Transmission of a digital or analog signal at its original frequencies, i.e., a signal in its original form, not changed by modulation.
- Binder:** Usual spirally served tape or thread used for holding assembled cable components in place.
- Bit:** One binary digit.
- 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.
- Breakdown Voltage:** The voltage at which the insulation between two conductors breaks down.
- 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.
- Circuit Sizes:** A popular term for building wire sizes 14 through 10 AWG.

Glossary

- 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.
- Control Cable:** A multi-conductor cable made for operation in control or signal circuits.
- Copolymer:** A compound resulting from the polymerization of two different monomers.
- Cord:** A small, flexible insulated cable.
- Core:** In cables, a component or assembly of components over which additional components (shield, sheath, etc.) are applied.
- Corrosion:** The destruction of the surface of a metal by chemical reaction.
- Coverage:** The percent of completeness with which a metal braid covers the underlying surface.
- Cross-Linked:** Inter-molecular bonds between long chain thermoplastic polymers created by chemical action or electron bombardment.
- 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.
- 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.
- Ductile:** Capable of being drawn out or hammered thin, or of being flexed or bent without failure.
- 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.
- Electrolysis:** The production of chemical changes by passage of current through an electrolyte.
- 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.

Glossary

- 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.
- Farad:** The standard unit of capacitance. A one farad capacitor is one in which a one coulomb charge produces a one volt potential difference between the plates.
- 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.
- Flexible:** The quality of a cable or cable component which allows for bending under the influence of outside force, as opposed to limpness which is bending due to the cable's own weight.
- 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.
- Hertz:** Unit of measure of frequency of alternating current. One hertz is equal to one cycle per second.
- Hook-Up Wire:** A wire used for low current, low voltage (under 1000 volts) applications within enclosed electronic equipment.
- 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.
- Impedance Match:** A condition in which the impedance of a particular circuit cable or component is the same as the impedance of the circuit, cable, or device to which it is connected.
- 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 Plant (ISP):** All cable and equipment inside a central office or subscriber's premises.
- 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.

Glossary

- 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.
- 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 (10^3).
- Kilohertz:** One thousand hertz, or one thousand cycles per second.
- 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, monopoly 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.
- Meg or Mega:** A numerical prefix denoting one million (1,000,000 or 10^6).
- Micro:** A numerical prefix denoting one millionth (10^{-6}).
- Micro Farad:** One millionth of a farad. This is the common unit for designating capacitance in electronics and communications.
- Mil:** 1/1000 of an inch.
- Milli:** Prefix meaning one thousandth (10^{-3}).
- 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.
- Nano:** Prefix meaning one billionth (10^{-9}).
- 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.
- Pico:** Prefix meaning one trillionth (10^{-12}).

Glossary

- Picofarad:** One trillionth of a farad. A unit capacitance usually used to designate capacitance unbalance between pairs and capacitance unbalance of the two wires of a pair to ground.
- 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 non-conductive 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.
- Rated Voltage:** The maximum voltage at which an electric component can operate for extended periods without undue degradation or safety hazard.
- Redrawn:** The drawing of wire which has already been drawn to an intermediate size, through a series of dies, to reach a desired wire size.
- Regional Bell Operating Company (RBOC):** A holding company formed by the divestiture of AT&T to provide both regulated and non-regulated 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.
- Self-Extinguishing:** The characteristic of a material whose flame is extinguished within a specified time after the igniting flame is removed.
- Semi-Rigid:** A cable containing a flexible inner core and a relatively inflexible sheathing material, such as a metallic tube, but which can be bent for coiling or spooling and placing in a duct or cable run.
- 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 wires 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.

Glossary

- Specific Gravity:** The ratio of the weight of any volume of substance to a weight of an equal volume of some substance taken as a standard, usually water for liquids and hydrogen for gases.
- 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.
- Strand:** A single uninsulated wire.
- Strand Lay:** The distance of advance of one strand of a spirally stranded conductor, in one turn, measured axially.
- Stranded Conductor:** A conductor composed of groups of wires twisted together.
- 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 1.544M bps. 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.
- Thermoset:** A plastic material which is cross-linked by a heating process known as curing. Once cured, thermosets cannot be reshaped.
- 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.
- UHF:** Abbreviation for ultra high frequency; 300 to 3,000 MHz.
- 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.
- VHF:** Abbreviation for very high frequency; 30 to 300 MHz.
- 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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