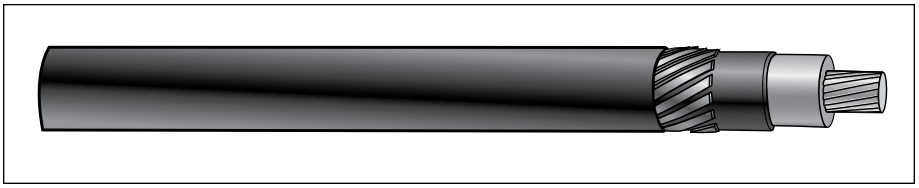
PowrPak® Underground PILC Replacement Cable

Copper EPR Insulation Flat Strap Concentric Neutral LLDPE Jacket



PILC REPLACEMENT CABLE – 15 kV – PowrPak®															
COMPACT CONDUCTOR		FLAT STRAP SHIELD (1)			NOMINAL O.D. (INCHES)					APPROX. WEIGHT (LB/1000 FT)				DUCT CLEARANCE (3)	
CU (AWG OR kcmil)	MIN. NO. OF WIRES	NO. OF STRAPS	THKN. (mils)	WIDTH (mils)	INS. (± 25 mils)	INS. SHIELD (± 30 mils)	FLAT STRAP	ENCAP JACKET (± 50 mils)	NOM. JACKET THKN. (INCHES)	CU COND.	CU SHIELD	TOTAL	AMP. IN DUCT (2)	DUCT I.D. (INCHES)	MIN. CLEAR (INCHES)
175 mils NOMINAL EPR INSULATION – 100% INSULATION LEVEL															
4/0	18	12	20	175	0.865	0.925	0.965	1.065	0.050	653	178	1167	305	3.0	0.72
350	35	14	20	175	1.006	1.066	1.106	1.206	0.050	1081	208	1694	400	3.0	0.36
500	35	14	20	175	1.126	1.186	1.226	1.326	0.050	1544	208	2222	495	3.5	0.63
750	58	16	20	175	1.298	1.358	1.398	1.498	0.050	2316	237	3120	615	4.0	0.75
1000	58	16	20	175	1.450	1.510	1.550	1.650	0.050	3088	237	3980	705	4.0	0.36

PILC REPLACEMENT CABLE – 25 kV – PowrPak®															
COMPACT CONDUCTOR		FLAT STRAP SHIELD (1)			NOMINAL O.D. (INCHES)					APPROX. WEIGHT (LB/1000 FT)				DUCT CLEARANCE (3)	
CU (AWG OR kcmil)	MIN. NO. OF WIRES	NO. OF STRAPS	THKN. (mils)	WIDTH (mils)	INS. (± 25 mils)	INS. SHIELD (± 30 mils)	FLAT STRAP	ENCAP JACKET (± 50 mils)	NOM. JACKET THKN. (INCHES)	CU COND.	CU SHIELD	TOTAL	AMP. IN DUCT (2)	DUCT I.D. (INCHES)	MIN. CLEAR (INCHES)
260 mils NOMINAL EPR INSULATION – 100% INSULATION LEVEL															
4/0	18	12	20	175	1.035	1.095	1.135	1.235	0.050	653	179	1319	315	3.5	0.86
350	35	14	20	175	1.176	1.236	1.276	1.376	0.050	1081	208	1866	410	3.5	0.50
500	35	14	20	175	1.296	1.356	1.396	1.496	0.050	1544	208	2409	505	4.0	0.76
750	58	16	20	175	1.468	1.528	1.568	1.668	0.050	2316	238	3331	620	4.0	0.31
1000	58	16	20	175	1.620	1.680	1.720	1.820	0.050	3088	238	4211	730	5.0	1.15

(1) Concentric neutral designs shown are for typical metallic shield requirements. The concentric neutral can be designed to fit the customer's fault current and time duration requirements. See fault current capability of typical designs on following page.
(2) Ampacity based on three phases in a duct and one duct load in the duct bank. Concrete thermal resistivity of 85°C-cm watt, earth thermal resistivity of 90°C-cm/watt, burial depth to top of duct bank is 30", 90°C conductor temperature, 20°C earth ambient temperature and 75% load factor.
(3) Duct clearance based on maximum cable diameter and inside diameter of schedule 40 duct.

Dimensions and weights not designated minimum or maximum are nominal values and subject to manufacturing tolerances. In this context, weight means mass.

Product Construction:

Complete Cable:

Cross-linked semi-conducting conductor shield, insulation and semi-conducting insulation shield are extruded over stranded copper conductor and cured in a single operation. Uncoated copper flat strap neutrals (helically applied) and extruded-to-fill black jacket are applied over the cable core.

Conductor:
STRANDFILL® compact, Class B concentric lay stranded copper meeting the requirements of ANSI/ICEA S-94-649 and tested in accordance with ICEA T-31-610.

Conductor Shield:
Extruded semi-conducting thermosetting polymeric stress control layer.

Insulation:
Extruded Ethylene Propylene Rubber (EPR) Class II and III as defined in ANSI/ICEA S-94-649.

Insulation Shield:
Extruded semi-conducting thermosetting layer, clean- and free-stripping from insulation.

Metallic Shield:
Bare annealed copper flat strap neutrals designed to meet customer fault current requirements.

Jacket:
Black, non-conducting Linear Low-Density Polyethylene (LLDPE) extruded to fill spaces between flat straps.

Features and Benefits:

- Triple-extruded for clean interfaces
- Class 10,000 environment utilized for material handling
- Flexibility for easy handling
- Excellent moisture resistance
- Improved temperature rating over PILC
- Low dielectric loss
- Deformation-resistant
- High dielectric strength
- Excellent resistance to treeing
- Clean-stripping insulation shield without the use of a release agent
- Reduced overall diameter for tight duct applications without reducing insulation wall
- No environmental concerns
- Higher emergency ampacity capabilities
- Less costly than PILC
- Millions of feet successfully installed and operated since its introduction in 1989

PowrPak® Underground PILC Replacement Cable

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Temperature Rating:

- Normal ..... 105°C
- Emergency* ..... 140°C
- Short Circuit ..... 250°C

** Operation at the emergency overload temperature shall not exceed 1500 hours cumulative during the lifetime of the cable.*

Standards and Specifications:

PowrPak® cables meet the latest ANSI/ICEA S-94-649 and AEIC CS8 specifications for Ethylene Propylene Rubber (EPR) insulated concentric neutral cable except for dimensional requirements.

Applications:

PowrPak® cables are intended for use in dry or wet locations for today's aging and expanding urban underground distribution systems of utilities where PILC has been used previously. It is specifically designed to be used in urban underground network systems where existing duct space is limited.

Options:

- Class C copper conductors
- Reduced insulation wall thickness
- BIFILL® blocked conductor and cable core/ jacket. Tested in accordance with ICEA T-34-664
- Available with lead-free EAM insulation
- Dry nitrogen cure
- Red stripes on jacket
- Deformation-resistant polypropylene jacket
- 3 X 1/C triplex or parallel
- CSA C68.5

For information on conductor sizes or voltage ratings not shown in the tables, contact your General Cable sales representative or e-mail infoca@generalcable.com.

FAULT CURRENT CAPABILITY OF FLAT STRAP NEUTRAL

NO. STRAPS	THKN. (mils)	WIDTH (mils)	CROSS-SECTIONAL AREA (kcmil)	AMPERES FOR FAULT DURATION (CYCLES)						
				3	6	8	10	12	15	20
12	20	175	53.466	15,064	10,652	9,225	8,251	7,532	6,737	5,834
14	20	175	62.377	17,574	12,427	10,762	9,626	8,787	7,850	6,807
16	20	175	71.288	20,085	14,202	12,300	11,001	10,043	8,982	7,779
14	25	175	77.971	21,968	15,534	13,453	12,032	10,984	9,824	8,508
16	25	175	89.110	25,106	17,753	15,374	13,751	12,553	11,228	9,724
14	35	200	124.754	35,149	24,854	21,524	19,252	17,574	15,719	13,613