

PowrPak® Underground PILC Replacement Cable

Cu Conductor EPR Insulation Flat Strap Concentric Neutral LLDPE Jacket



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. 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.

Conductor:

STRANDFILL®, bare, compact, concentric lay stranded copper 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.

Insulation Shield:

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

Copper Flat Straps:

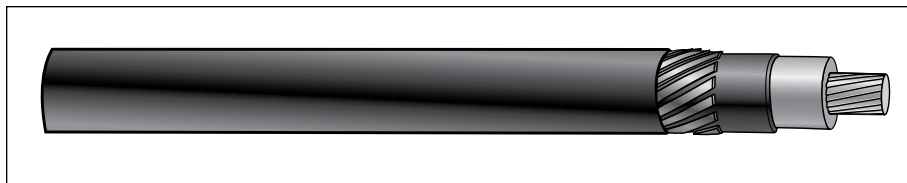
Bare annealed copper flat strap neutrals designed to meet customer fault current requirements.

Jacket:

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

Features and Benefits:

- 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
- Triple-extruded for clean interfaces
- Class 10,000 environment utilized for cable core 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 water treeing
- Clean-stripping insulation shield without the use of a release agent



PILC REPLACEMENT CABLE - 15kV - PowrPak

COMPACT CONDUCTOR		FLAT STRAP SHIELD (1)			NOMINAL O.D. INCHES					APPROX. WEIGHT LB/KFT			SHIELD FAULT CURRENT @ 8 CYCLES (2)	AMP. IN DUCT (3)	DUCT CLEARANCE (4)	
CU AWG OR kcmil	MIN. NO. OF WIRES	NO. OF STRAPS	THKN. MILS	WIDTH MILS	INS.	INS. SHIELD	FLAT STRAP	ENCAP JACKET	NOM. JACKET THKN. INCHES	CU COND.	CU SHIELD	TOTAL			DUCT I.D. INCHES	MIN. CLEAR INCHES

175 mils NOMINAL EPR INSULATION - 100% INSULATION LEVEL

4/0	18	12	20	165	0.865	0.925	0.965	1.065	0.050	653	160	1144	8700	315	3.0	0.72
350	35	14	20	165	1.006	1.066	1.106	1.206	0.050	1081	187	1658	10100	415	3.0	0.36
500	35	16	20	165	1.126	1.186	1.226	1.326	0.050	1542	214	2198	11600	505	3.5	0.63
750	58	18	20	165	1.298	1.358	1.398	1.498	0.050	2316	240	3074	13000	625	4.0	0.75
1000	58	20	20	165	1.450	1.510	1.550	1.650	0.050	3088	267	3940	14500	705	4.0	0.36

PILC REPLACEMENT CABLE - 25kV - PowrPak

COMPACT CONDUCTOR		FLAT STRAP SHIELD (1)			NOMINAL O.D. INCHES					APPROX. WEIGHT LB/KFT			SHIELD FAULT CURRENT @ 8 CYCLES (2)	AMP. IN DUCT (3)	DUCT CLEARANCE (4)	
CU AWG OR kcmil	MIN. NO. OF WIRES	NO. OF STRAPS	THKN. MILS	WIDTH MILS	INS.	INS. SHIELD	FLAT STRAP	ENCAP JACKET	NOM. JACKET THKN. INCHES	CU COND.	CU SHIELD	TOTAL			DUCT I.D. INCHES	MIN. CLEAR INCHES

260 mils NOMINAL EPR INSULATION - 100% INSULATION LEVEL

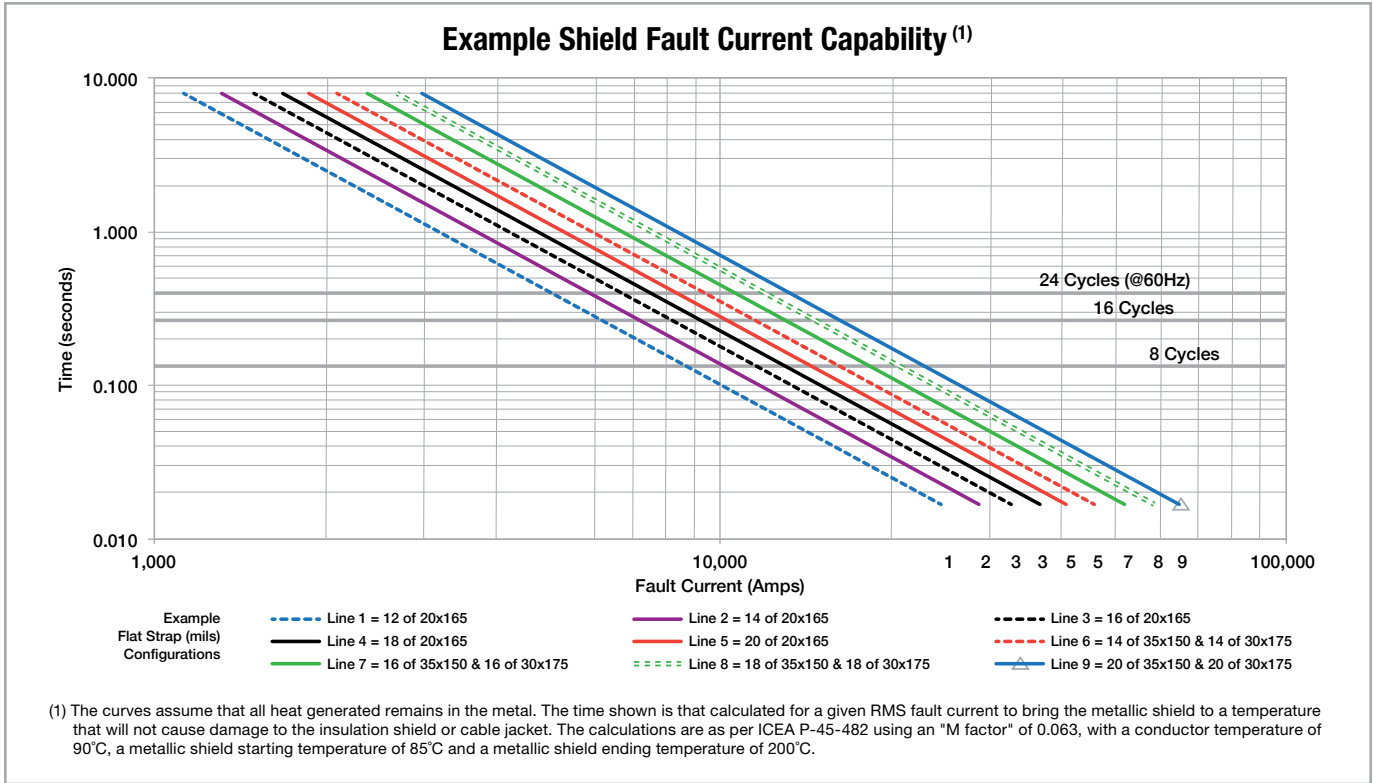
4/0	18	12	20	165	1.035	1.095	1.135	1.235	0.050	653	161	1296	8700	320	3.5	0.86
350	35	14	20	165	1.176	1.236	1.276	1.376	0.050	1081	187	1829	10100	420	3.5	0.50
500	35	16	20	165	1.296	1.356	1.396	1.496	0.050	1542	214	2385	11600	515	4.0	0.76
750	58	18	20	165	1.468	1.528	1.568	1.668	0.050	2316	241	3285	13000	630	4.0	0.31
1000	58	20	20	165	1.620	1.680	1.720	1.820	0.050	3088	267	4172	14500	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 the following page.
- (2) The value of the shield fault current is based on an 8 cycle duration (@ 60Hz) and calculated per ICEA P-45-482 using an "M factor" of 0.063, with a conductor temperature of 90°C and a metallic shield starting temperature of 85°C and a metallic shield ending temperature of 200°C.
- (3) Ampacity based on three phases in a duct and one duct load in a 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 of 36", 90°C conductor temp., 20°C earth ambient temperature, and 75% load factor. For specific ampacities, contact your General Cable sales representative.
- (4) 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.

PowrPak® Underground PILC Replacement Cable

Cu Conductor EPR Insulation Flat Strap Concentric Neutral LLDPE Jacket



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.

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
- Dry nitrogen cure
- True Triple Extrusion
- Red stripes on jacket
- Deformation-resistant polypropylene jacket
- CL™ XLPE jacket
- 3 X 1/C triplex or parallel
- Lead-free filled EAM insulation
- TRXLPE insulation