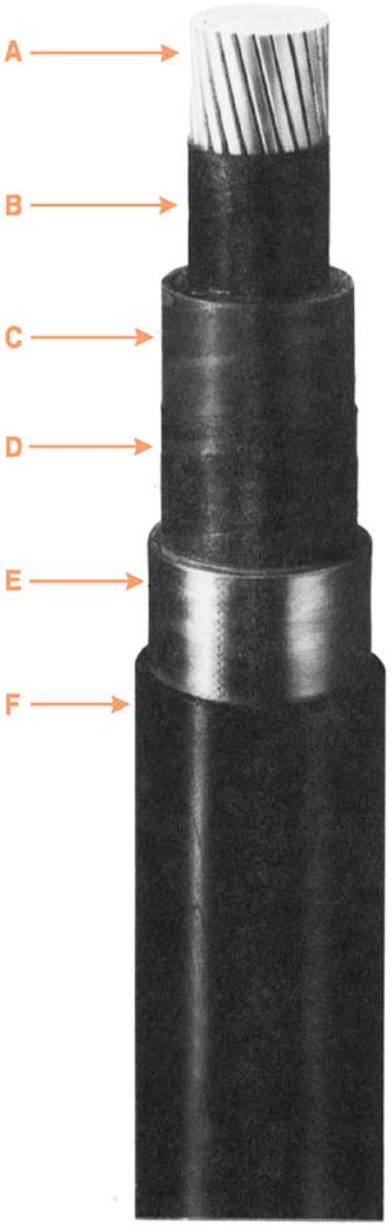
Solid Type PILC

15kV Paper Insulated Lead Covered Power Cable

Single Copper Conductors/90°C Rating
100% Insulation Level



A Conductor-Stranded Round
B Strand Screen-Carbon Black Paper Tapes
C Insulation-Impregnated Paper Tapes
D Insulation Screen-Carbon Black Paper Tape
E Sheath- Copper Bearing Lead
F Jacket

Conductor

Okonite's single conductor PILC cables are available with four different style conductors depending on the application. The four conductor styles are concentric, compressed, compact round and compact segmental.

Insulation

Okonite's impregnated paper insulation consists of the finest electrical grade paper made from the highest quality coniferous wood pulp and the purest polybutene dielectric fluid. The paper is manufactured to meet Okonite specifications to produce the necessary mechanical and physical properties to resist tearing and wrinkling during manufacture and subsequent handling during field operations; and in addition to assure properties of low dielectric loss with high dielectric strength. Okonite pre-twists the compact sector conductors before applying the paper insulation to eliminate wrinkles. To maintain a smooth, wrinkle-free precisely gapped tape insulation, Okonite carefully slits its own paper tapes into widths tailored for each conductor size and wall thickness. Most importantly, Okonite has the most precise tape tensions available. The impreganating fluid used is a medium viscosity polybutene type with an optional high viscosity fluid for warm installations, risers installations or installations with severe elevation changes. Polybutene fluids are superior in that they resist aging, have lower and more stable power factor values and possess an inherent tackiness which resists draining. Okonite treats the dielectric fluid with clay-filtering and then de-gases it prior to impregnating the cable to provide the lowest power factor and ionization levels.

Sheath & Jacket

Okonite's copper bearing lead sheath provides an impervious barrier from the environment; in addition, it provides mechanical protection for the insulation and encapsulates the impregnant. All lead sheaths have the inherent capacity for substantial electrical conductivity under short circuit conditions without requiring a separate ground. Okonite's lead sheaths are applied with a continuous lead extruder under the control of a thickness gauge for uniform wall thickness and concentricity.

The Okolene® jacket provides mechanical and corrosion protection for the lead sheath and is used in most installations. (Indoor and aerial installations may not require a jacket.) Okolene is a thermoplastic polyethylene material that resists most chemicals and moisture; it is unaffected by oils below 60°C and has a low coefficient of friction which reduces tensions when pulling through ducts and conduits.

Applications

Okonite Paper Insulated Lead Covered 1/C cable is recommended for use in underground ducts, direct burial and aerially when lashed to a messenger. PILC cables are used in many circuits where the highest reliability, the longest uninterrupted service life and where the greatest surge, impulse and AC dielectric strengths are desired.

Although not shown as an insulation above 600 Volts in the National Electric Code, it may be approved for use by the local inspector because of its extensive safe use by utilities for over 60 years. Therefore, PILC cables can be used in industrial or commercial applications with prior notifications to and approval by the local inspector.

Also available in other voltage ratings.

Specifications

Okonite PILC cables are available in accordance with AEIC CS1-90 or AEIC CS1-12.

- Cables made per AEIC CS1-90 have traditional nominal wall thicknesses for the lead sheath and overall jacket.
- Cables made per AEIC CS1-12 have “minimum point” wall thicknesses for the lead sheath and overall jacket.

Specifications

- Copper conductors available as:
  - Concentric Round
  - Compact Round
  - Compressed Round
  - Compact segmental (1000 to 3500 kcmil)
- 90°C continuous operation.
- 110°C emergency rating.
- 200°C short circuit rating.
- Polybutene impregnating fluid.
- Type H (shielded) cable.
- High impulse strength.
- Proven service life of over 80 years.
- Impervious to environment.
- Copper bearing lead sheath.

Options

- Available in other voltage ranges from 0.6 through 46 kV.
- Available with 133 and 173% insulation levels.
- Available as single and 4 conductor cables.
- Available with high viscosity dielectric fluid for risers and installations with severe elevation differences.
- Available with a reinforced lead sheath (ROC-Reinforced Okonite Covering).
- Available with LS/ZH Okoclear TP(TPPO) and Okoseal (PVC) jackets.
- Belted PILC cables are also available.

Solid Type PILC

15kV Paper Insulated Lead Covered Power Cable

Single Copper Conductor/90°C Rating
100% Insulation Level

AEIC CS1-90 11th Edition(A)

Catalog Number	Conductor size (AWG or kcmil)	Conductor Size -mm²	Insulation Thickness Nominal-mils	Lead Thickness Nominal-mils	Jacket Thickness Nominal-mils	Cable Diameter-inches	New Weight - lbs./ft.	Ampacities Duct (1)	Ampacities in Air (2)
Compact Round									
101-03-4240	250	127	165	75	80	1.22	2.58	408	416
101-03-4310	500	253	165	80	80	1.44	3.90	611	646
101-03-4564	750	380	165	85	80	1.62	5.12	771	836
101-03-4621	1000	507	165	90	90	1.81	6.49	902	1001
Concentric Round									
101-03-4652	1250	633	165	95	90	2.04	7.61	1015	1147
101-03-4661	1500	760	165	95	90	2.17	8.60	1110	1277
101-03-4666	1750	887	165	100	90	2.29	9.86	1193	1393
Compact Segmental									
101-03-4594	1000	507	165	90	90	1.90	6.49	924	1024
101-03-4656	1500	760	165	95	90	2.17	8.60	1166	1338
101-03-4776	2000	1010	165	100	110	2.44	10.84	1366	1611
101-03-4870	2500	1280	165	105	110	2.64	13.03	1526	1844

A-Lead sheath and jacket thicknesses per AEIC CS1-90 version using traditional normal thicknesses.

AEIC CS1-12 12th Edition(B)

Catalog Number	Conductor size (AWG or kcmil)	Conductor Size -mm²	Insulation Thickness Nominal-mils	Lead Thickness Nominal-mils	Jacket Thickness Nominal-mils	Cable Diameter-inches	New Weight - lbs./ft.	Ampacities Duct (1)	Ampacities in Air (2)
Compact Round									
101-04-4240	250	127	165	65	60	1.21	2.28	408	416
101-04-4310	500	253	165	75	60	1.44	3.60	611	646
101-04-4564	750	380	165	75	60	1.63	4.70	771	836
101-04-4621	1000	507	165	75	70	1.79	5.75	902	1001
Concentric Round									
101-04-4652	1250	633	165	85	70	2.03	7.22	1015	1147
101-04-4661	1500	760	165	85	70	2.15	8.22	1110	1277
101-04-4666	1750	887	165	85	70	2.24	9.25	1193	1393
Compact Segmental									
101-03-4594	1000	507	165	75	70	1.86	6.00	924	1024
101-03-4656	1500	760	165	85	70	2.12	8.32	1166	1338
101-03-4776	2000	1010	165	85	70	2.31	10.28	1366	1611
101-03-4870	2500	1280	165	105	100	2.56	12.86	1526	1844

B-Lead sheath and jacket thicknesses per AEIC CS1-12 version using minimum point thicknesses.

Ampacities

(1) Ampacity for one circuit, one cable per conduit in ductbank, 90°C conductor temperature, 90 RHO soil 20°C earth temperature, 75% Load Factor, single point grounded sheaths. Ducts spaced 7.5" on center in 2 x 2 arrangement. Per Okonite Bulletin 205, page 47.

(2) Ampacity for one or multiple circuits, spaced one cable diameter or more apart, 40°C ambient air temperature, 40 to 100% daily Load Factor, single point grounded sheaths. Per Okonite Bulletin 205, page 50.

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