Solid Type PILC

15kV Paper Insulated Lead Covered Power Cable

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

A Conductor-Stranded Compact Sector, Pre-twisted
B Strand Screen-Carbon Black Paper Tapes
C Insulation-Impregnated Paper Tapes
D Insulation Screen-Carbon Black Paper Tape
E Shield Copper Tape
F Fillers-Impregnated Paper
G Binder Copper Tape
H Sheath-Copper Bearing Lead
J Jacket

Conductor

Okonite's multiconductor PILC cables are available with three different style conductors depending on the application. The three conductor styles are compressed round, compact round and compact (120°) sector.

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. To maintain a smooth, wrinkle-free precisely gapped tape insulation, Okonite carefully slits it own paper tapes into widths tailored for each conductor size and wall thickness. Most importantly, Okonite has the most precise tape tensions available.
The impregnating 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 encapsulation of the impregnant. All lead sheaths have the inherent capacity for substantial electrical conductivity, even 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 of extrusion.
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 aids pulling through ducts and conduits.

Applications

Okonite Paper Insulated Lead Covered 3/C cable is recommended for use in underground ducts, direct buried, and aerially when lashed to a messenger.

PILC cables are used in any circuit that requires the highest reliability, the longest uninterrupted service life, and where the greatest surge, impulse and AC dielectric strength is desired. An added advantage is that a 3/C PILC cable permits the largest amount of power to be transmitted in the smallest diameter space because of its unique triangle shaped and nested design.
Although not shown as an insulation above 600 Volts in the National Electrical Code, it is readily approved for use by local inspectors because of its extensive safe use by utilities. Therefore, PILC cables can be used in industrial or commercial applications with prior notification 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
  - Compact Sector (Pre-twisted)
- 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 though 69 kV.
- Available with 133 and 173% insulation levels.
- Available as 3 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.

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15kV Paper Insulated Lead Covered Power Cable

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

AEIC CS1-90 11th Edition(A)

Catalog Number	Conductor size AWG/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) (100% LF)	Ampacities in Duct (2) (75% LF)
Concentric Round									
101-63-4120	2	33.6	180	90	90	1.92	4.34	146	154
101-63-4175	1	42.4	165	90	90	1.94	4.53	167	176
Compact Round									
101-63-4243	1/0	53.5	165	90	90	1.97	4.83	191	202
Compact Sector									
101-63-4277	2/0	67.4	165	90	90	1.92	4.80	215	228
101-63-4335	3/0	85.0	165	90	90	2.00	5.32	245	260
101-63-4373	4/0	107.0	165	90	90	2.12	6.13	280	297
101-63-4436	250	127.0	165	90	90	2.19	6.67	307	327
▲101-63-4544	350	177.0	165	90	90	2.37	8.19	371	397
▲101-63-4665	500	253.0	165	110	110	2.64	10.37	450	483
101-63-4904	750	380.0	165	110	110	2.94	13.71	555	599

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

AEIC CS1-12 12th Edition(B)

Catalog Number	Conductor size AWG/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) (100% LF)	Ampacities in Duct (2) (75% LF)
Concentric Round									
101-61-4120	2	33.6	180	85	70	1.93	4.46	146	154
101-61-4175	1	42.4	165	85	70	1.95	4.65	167	176
Compact Round									
101-61-4243	1/0	53.5	165	85	70	1.98	4.96	191	202
Compact Sector									
101-61-4277	2/0	67.4	165	85	70	1.93	4.92	215	228
101-61-4335	3/0	85.0	165	85	70	2.02	5.45	245	260
101-61-4373	4/0	107.0	165	85	70	2.12	6.11	280	297
101-61-4436	250	127.0	165	85	70	2.20	6.65	307	327
101-61-4544	350	177.0	165	85	70	2.37	8.00	371	397
101-61-4665	500	253.0	165	100	85	2.65	10.61	450	483
101-61-4904	750	380.0	165	100	85	2.95	13.73	555	599
101-61-4986	1000	507.0	165	100	100	3.29	16.95	636	689

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

Authorized Stock Item. Stock items use high viscosity polybutene impregnating fluid. Available from our Customer Service Centers.

(1) Ampacity for one circuit, one conduit in ductbank, 90°C conductor temperature, 90 RHO soil 20°C earth temperature, 100% Load Factor, multi point grounded sheaths. Per Okonite Bulletin 205, page 53.

(2) Ampacity for one circuit, one conduit in ductbank, 90°C conductor temperature, 90 RHO soil 20°C earth temperature, 75% Load Factor, multi point grounded sheaths. Per Okonite Bulletin 205, page 53.

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