PILC Solid Type Copper

Single or Three Conductors

Features

User Advantages: PILC cables are hermetically sealed with a lead sheath, which protect the cables against humidity, gasoline and most chemical agents. Outer jacket provides additional protection against corrosion and galvanic action.

Description: Single or multiple conductors, concentric round, compact round or sectoral stranded copper conductors, impregnated paper insulation, lead sheath, and low density thermoplastic jacket. Optional, non-jacketed cables.

Shielding Rated Cables
10 kV and up.

Application

PILC cables are used in power distribution and other industrial circuits, where it is necessary to splice into existing PILC cable system.

Specifications

AEIC CS1-90 (11th ed.)

Specification for Impregnated Paper–Insulated Metallic–Sheathed Cable, Solid Type.

See Conductor Size and Operating Voltages, and Operating Conductor Temperature data below.

Engineering Information

1. Copper Conductor: Annealed bare copper conductor, normal, compact round, or compact sectoral stranded, per ASTM B3, B8, B496.

2. Conductor Shield: Carbon black impregnated semi-conducting paper tapes adjacent to and in contact with the conductor.

3. Insulation: Paper, 100% high quality sulphate – processed wood pulp paper tapes helically and uniformly applied around the conductor.

4. Insulation Shielding: For 10 kV rated cables and up, semi-conducting carbon black paper tapes over the insulation in single conductor cable. In shielded multiple conductor cable, copper tapes intercalated with carbon black semi-conducting paper tapes over individual insulation. Belted multiconductor shielded cables shall have a shielding consisting of carbon black semi-conducting paper tapes.

Assembly (Multiconductor cables): Individual insulated conductors are cabled with paper fillers in interstices to give a round core, and a binder paper tape.

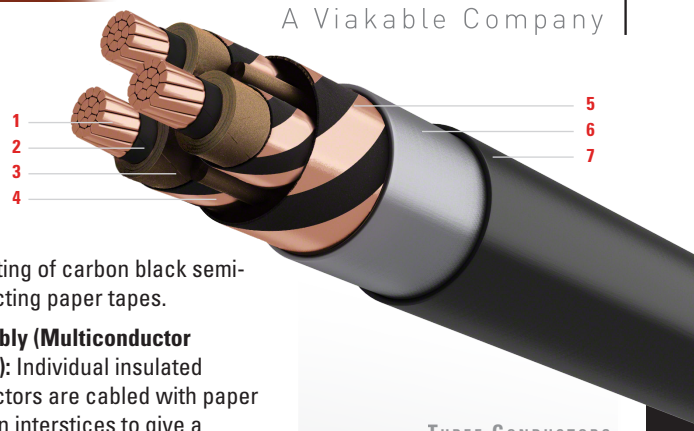
5. Binder: For shielded multiconductor cables an optional binder of semi-conducting tapes (20 mil maximum), paper tapes (20 mil maximum) or copper tapes intercalated with paper tapes.

Impregnate: High viscosity impregnating oil, applied after an appropriate vacuum drying process.

6. Sheath: Commercially pure lead sheath. Some other lead alloys available on request.

7. Jacket: Extruded thermoplastic polyethylene.

Optional polyvinyl chloride (PVC) jacket.



Three Conductors


Single Conductor

Technical Data

Conductor Size and Operating Voltages

Conductor Size Range	Rated Voltage (kV)	% Insulation Level
6 AWG – 1000 kcmil	1	100
6 AWG – 1000 kcmil	5	100
4 AWG – 1000 kcmil	15	100
1 AWG – 1000 kcmil	25	100

Operating Conductor Temperature

Rated Voltage	% Insulation Level	Maximum Operating Temperature	
		Normal	Emergency
1 and 5	100	95 °C	115 °C
15 and 25	100	90 °C	110 °C

Single Conductor 100% Insulation Level

Size AWG or kcmil	Insulation Thickness mil	Lead Thickness mil	Jacket Thickness mil	Overall Diameter in	Approximate Weight lb/kft
1 kV Rated Voltage					
6	60	80	80	0.65	693
4	60	80	80	0.70	812
2	60	80	80	0.76	977
1	60	80	80	0.80	1092
1/0	60	80	80	0.84	1222
2/0	60	80	80	0.88	1375
3/0	60	80	80	0.93	1560
4/0	60	80	80	0.99	1782
250	60	80	80	1.03	1972
300	60	80	80	1.09	2208
350	60	80	80	1.13	2440
400	60	80	80	1.18	2666
500	60	80	80	1.26	3105
600	60	80	80	1.34	3535
750	60	80	80	1.44	4158
1000	60	85	80	1.60	5280
5 kV Rated Voltage					
6	90	80	80	0.71	795
4	90	80	80	0.76	919
2	90	80	80	0.82	1087
1	90	80	80	0.86	1203
1/0	90	80	80	0.90	1335
2/0	90	80	80	0.94	1490
3/0	90	80	80	0.99	1678
4/0	90	80	80	1.05	1903
250	90	80	80	1.09	2095
300	90	80	80	1.15	2335
350	90	80	80	1.20	2569
400	90	80	80	1.24	2797
500	90	80	80	1.32	3241
600	90	80	80	1.40	3675
750	90	80	80	1.50	4304
1000	90	85	80	1.66	5439

The above data are approximate and subject to normal manufacturing tolerances. Other sizes available upon request.

Single Conductor 100% Insulation Level

Size AWG or kcmil	Insulation Thickness mil	Lead Thickness mil	Jacket Thickness mil	Overall Diameter in	Approximate Weight lb/kft
15 kV Rated Voltage					
4	180	80	80	0.96	1304
2	180	80	80	1.02	1483
1	165	80	80	1.03	1545
1/0	165	80	80	1.07	1682
2/0	165	80	80	1.11	1845
3/0	165	80	80	1.16	2041
4/0	165	80	80	1.22	2275
250	165	80	80	1.26	2475
300	165	80	80	1.32	2723
350	165	80	80	1.37	2965
400	165	80	80	1.41	3201
500	165	80	80	1.50	3658
600	165	85	80	1.58	4217
750	165	85	90	1.71	4893
1000	165	90	90	1.87	6081
25 kV Rated Voltage					
1	255	80	80	1.21	1928
1/0	255	80	80	1.25	2073
2/0	255	80	80	1.29	2243
3/0	240	80	80	1.31	2377
4/0	240	80	80	1.37	2619
250	240	80	80	1.42	2825
300	240	80	80	1.47	3080
350	240	80	80	1.52	3329
400	240	80	80	1.56	3571
500	240	80	80	1.65	4039
600	240	85	80	1.73	4621
750	240	85	90	1.86	5313
1000	240	90	90	2.02	6533

The above data are approximate and subject to normal manufacturing tolerances. Other sizes available upon request.

CME wire and cable
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Technical Data *continued*

Three Conductor (Round) 100% Insulation Level

Size AWG or kcmil	Insulation Thickness mil	Lead Thickness mil	Jacket Thickness mil	Overall Diameter in	Approximate Weight lb/kft
15 kV Rated Voltage					
4	180	90	90	1.77	3404
2	180	90	90	1.90	3907
1	165	90	90	1.92	4166
1/0	165	95	90	2.01	4701
2/0	165	95	90	2.11	5211
3/0	165	100	90	2.23	5940
4/0	165	100	90	2.35	6670
250	165	105	110	2.50	7509
300	165	105	110	2.61	8302
350	165	110	110	2.73	9269
400	165	110	110	2.83	10027
500	165	115	110	3.02	11720
600	165	120	125	3.22	13481
750	165	125	125	3.45	15860
1000	165	130	125	3.79	19562
25 kV Rated Voltage					
1	255	90	90	2.31	5235
1/0	255	95	90	2.41	5861
2/0	255	95	90	2.50	6399
3/0	240	100	90	2.55	6984
4/0	240	100	90	2.67	7738
250	240	105	110	2.83	8670
300	240	105	110	2.94	9517
350	240	110	110	3.06	10531
400	240	110	110	3.15	11314
500	240	120	110	3.35	13315
600	240	125	125	3.56	15148
750	240	130	125	3.79	17620
1000	240	140	125	4.13	21743

The above data are approximate and subject to normal manufacturing tolerances. Other sizes available upon request.

CME wire and cable
A Viakable Company

Technical Data *continued*

Three Conductor (Sector) 100% Insulation Level

Size AWG or kcmil	Insulation Thickness mil	Lead Thickness mil	Jacket Thickness mil	Overall Diameter in	Approximate Weight lb/kft
15 kV Rated Voltage					
1/0	165	85	80	1.86	4342
2/0	165	85	80	1.94	4825
3/0	165	95	90	2.07	5668
4/0	165	90	90	2.17	6348
250	165	100	90	2.28	7317
300	165	105	110	2.42	8794
350	165	105	110	2.52	9113
500	165	110	110	2.76	11431
600	165	110	110	2.89	12856
750	165	115	110	3.07	14988
1000	165	120	125	3.38	18594

The above data are approximate and subject to normal manufacturing tolerances. Other sizes available upon request.

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