46kV AL 100% TRXLPE LCT LLDPE

Single Conductor, 445 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, Longitudinally Corrugated Tape Shield, Linear Low Density Polyethylene (LLDPE) Jacket. Silicone Free



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Moisture blocked class B compressed Aluminum ASTM B231 1350 ¾ hard H16/H26 (Non Moisture Blocked Optional)
2. **Conductor Shield:** Conventional Semi-conducting cross-linked copolymer; Supersmooth conductor shield optional; A conductor tape is used for cable size larger than or equal to 1500 Kcmil
3. **Insulation:** 445 Mils Tree Retardant Cross Linked Polyethylene 100% insulation level
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Tape Shield:** 10 mil Longitudinally Corrugated Tape Shield (8 and 9 mil thickness available)
6. **Overall Jacket:** Linear Low Density Polyethylene (LLDPE) Jacket, black with red extruded stripes; PowerGlide® LLDPE jacket optional

APPLICATIONS AND FEATURES:

Southwire's 46kV cables are suited for use in wet and dry areas, conduits, ducts, direct burial, sunlight, and where superior electrical properties are desired. These cables are capable of operating continuously at the conductor temperature not in excess of 90°C for normal operation. 130°C for emergency overload, and 250°C for short circuit conditions. Jacket types available that can be installed in conduit without the aid of lubrication. Rated for 1000 lbs./FT maximum sidewall pressure.

SPECIFICATIONS:

- ASTM B231 Standard Specification for Concentric-Lay-Stranded Aluminum 1350 Conductors
- ASTM B609 Standard Specification for Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes
- ICEA S-97-682 Standard for Shielded Utility Cable Rated for 5 - 46kV
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV (Qualification Test Requirements)
- Optional CSA 68.5: -40ºC and MV 90ºC optional marking available upon request

SAMPLE PRINT LEGEND:

SOUTHWIRE HI-DRI(R) [CONDUCTOR SIZE] [AWG or KCMIL] AL 46000 VOLTS TRXLPE INSULATION 445 MILS -- (NESC) -- SOUTHWIRE {MMM} {YYYY} NON-CONDUCTING JACKET

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Table 1 – Weights and Measurements

Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension
AWG/ Kcmil	inch	inch	mil	inch	mil	inch	lb /1000ft	inch	lb
350 (37)	0.661	1.597	445	1.677	110	1.997	1733	24.0	2100
500 (37)	0.789	1.725	445	1.805	110	2.125	2007	25.5	3000
600 (61)	0.865	1.811	445	1.891	110	2.211	2211	26.5	3600
750 (61)	0.968	1.914	445	1.994	110	2.314	2462	27.8	4500
1000 (61)	1.117	2.063	445	2.143	110	2.463	2857	29.6	6000

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
* Pulling tension based on pulling eye directly connected to conductor

Table 2 – Electrical and Engineering Data

Cond. Size	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Charging Current	Dielectric Loss	Zero Sequence Impedance	Positive Sequence Impedance	Short Circuit Current @ 30 Cycle	Allowable Ampacity in Duct 90°C
AWG/ Kcmil	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	A/1000ft	W/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp
350 (37)	0.050	0.065	0.060	0.047	0.255	6.77	0.119 + j0.718	0.065 + j0.047	4702	315
500 (37)	0.035	0.046	0.053	0.044	0.288	7.65	0.100 + j0.711	0.046 + j0.045	5057	380
600 (61)	0.029	0.039	0.050	0.043	0.305	8.10	0.093 + j0.706	0.039 + j0.043	5295	445
750 (61)	0.024	0.033	0.046	0.042	0.330	8.76	0.087 + j0.702	0.033 + j0.042	5581	480
1000 (61)	0.018	0.026	0.041	0.040	0.367	9.75	0.080 + j0.696	0.026 + j0.040	5994	550

*Ampacities for Direct Buried are based on ICEA P-117-734-2016 Single-Conductor Solid Dielectric 15-35kV. Single Circuit Flat Direct Buried Figure 3
*Ampacities for Duct are based on ICEA P-117-734-2016 for Single-Conductor Solid Dielectric 15-35kV. Single Circuit Trefoil Conduit Figure 7.
*Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft.

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Table 3 – Weights and Measurements (Metric)

Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension
AWG/ Kcmil	mm	mm	mm	mm	mm	mm	kg/km	mm	newton
350 (37)	16.79	40.56	11.30	42.60	2.79	50.72	2579	609.60	9345
500 (37)	20.04	43.82	11.30	45.85	2.79	53.97	2987	647.70	13350
600 (61)	21.97	46.00	11.30	48.03	2.79	56.16	3290	673.10	16020
750 (61)	24.59	48.62	11.30	50.65	2.79	58.78	3664	706.12	20025
1000 (61)	28.37	52.40	11.30	54.43	2.79	62.56	4252	751.84	26700

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
* Pulling tension based on pulling eye directly connected to conductor

Table 4 – Electrical and Engineering Data (Metric)

Cond. Size	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Charging Current	Dielectric Loss	Zero Sequence Impedance*	Positive Sequence Impedance*	Short Circuit Current @ 30 Cycle	Allowable Ampacity in Duct 90°C
AWG/ Kcmil	Ω/km	Ω/km	MΩ*km	Ω/km	A/km	W/km	Ω/1000ft	Ω/1000ft	Amp	Amp
350 (37)	0.1640	0.21	0.0183	0.1542	0.837	22.2113	0.119 + j0.718	0.065 + j0.047	4702	315
500 (37)	0.1148	0.15	0.0162	0.1444	0.945	25.0984	0.100 + j0.711	0.046 + j0.045	5057	380
600 (61)	0.0951	0.13	0.0152	0.1411	1.001	26.5748	0.093 + j0.706	0.039 + j0.043	5295	445
750 (61)	0.0787	0.11	0.0140	0.1378	1.083	28.7402	0.087 + j0.702	0.033 + j0.042	5581	480
1000 (61)	0.0591	0.09	0.0125	0.1312	1.204	31.9882	0.080 + j0.696	0.026 + j0.040	5994	550

*Ampacities for Direct Buried are based on ICEA P-117-734-2016 Single-Conductor Solid Dielectric 15-35kV. Single Circuit Flat Direct Buried Figure 3
*Ampacities for Duct are based on ICEA P-117-734-2016 for Single-Conductor Solid Dielectric 15-35kV. Single Circuit Trefoil Conduit Figure 7.
*Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft.