

## 46kV CU 100% TRXLPE One-Third Neutral LLDPE Primary UD

Single Conductor, 445 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, One-third Concentric Neutral, Linear Low Density Polyethylene (LLDPE) Jacket. Silicone Free

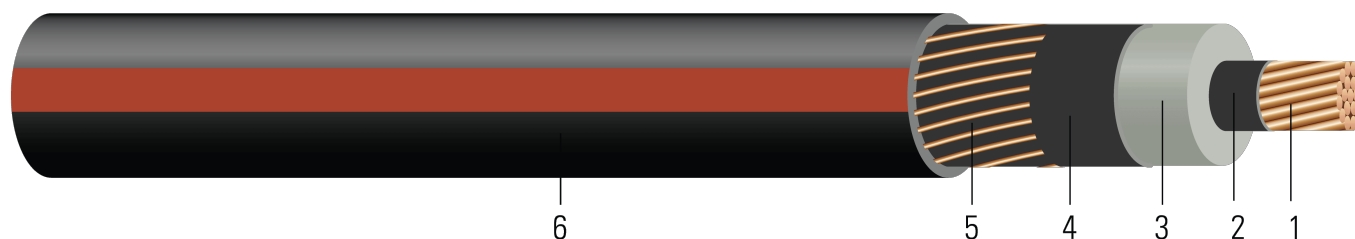


Image not to scale. See Table 1 for dimensions.

### CONSTRUCTION:

- Conductor:** Moisture blocked class B compressed stranded soft drawn bare copper per ASTM B3 and ASTM B8 (Conductor moisture block optional and tinned copper per ASTM B33 optional)
- 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
- Insulation:** 445 Mils Tree Retardant Cross Linked Polyethylene 100% insulation level
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Concentric Neutral:** Helically applied soft drawn bare copper one-third concentric neutral
- 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, troughs, trays, 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 B3 Standard Specification for Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- ICEA S-94-649 Standard for Concentric Neutral Cables Rated 5 - 46kV
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV
- Optional CSA 68.5: -40°C and MV 90°C optional marking available upon request

### SAMPLE PRINT LEGEND:

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



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**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Concentric Neutral	Neutral DC Resistance 25°C	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension*
	AWG/Kcmil	inch	inch	mil	inch	No. x AWG	Ω /1000ft	mil	inch	lb /1000ft	inch	lb
TBA	4/0 (19)	0.512	1.439	445	1.539	18x14	0.146	80	1.827	1875	14.6	1693
TBA	250 (37)	0.558	1.494	445	1.594	21x14	0.125	80	1.882	2079	15.0	2000
TBA	350 (37)	0.661	1.597	445	1.727	18x12	0.092	80	2.047	2661	16.3	2800
TBA	500 (37)	0.789	1.725	445	1.855	17x10	0.061	80	2.219	3476	17.7	4000
TBA	750 (61)	0.968	1.913	445	2.043	20x9	0.041	80	2.432	4720	19.4	6000
TBA	1000 (61)	1.117	2.062	445	2.192	21x8	0.031	80	2.609	5935	20.8	8000

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†	Allowable Ampacity Directly Buried 90°C‡
AWG/Kcmil	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	A/1000ft	W/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
4/0 (19)	0.051	0.064	0.066	0.049	0.405	3.227	0.207+j0.068	0.066+j0.049	6755.3	300	360
250 (37)	0.0431	0.054	0.062	0.048	0.431	3.434	0.179+j0.058	0.057+j0.047	7881.2		
350 (37)	0.0308	0.039	0.055	0.046	0.479	3.816	0.134+j0.047	0.043+j0.045	10732.8	400	470
500 (37)	0.0216	0.028	0.049	0.044	0.538	4.286	0.091+j0.038	0.033+j0.042	16113.0	470	555
750 (61)	0.0144	0.019	0.043	0.042	0.623	4.968	0.062+j0.031	0.026+j0.038	23905.5	560	650
1000 (61)	0.0108	0.015	0.038	0.040	0.691	5.504	0.047+j0.028	0.022+j0.034	31658.9		

\* Calculations are based on three cables triplexed / concentric shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohm-meter

† Ampacities are based on Figure 7 of ICEA P-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)

‡ Ampacities are based on Figure 1 of ICEA P-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)



**Table 3 – Weights and Measurements (Metric)**

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Concentric Neutral	Neutral DC Resistance 25°C	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension*
	AWG/Kcmil	mm	mm	mm	mm	No. x AWG	Ω/km	mm	mm	kg/km	mm	newton
TBA	4/0 (19)	13.00	36.55	11.30	39.09	18x14	0.48	2.03	46.41	2790	370.84	7534
TBA	250 (37)	14.17	37.95	11.30	40.49	21x14	0.41	2.03	47.80	3094	381.00	8900
TBA	350 (37)	16.79	40.56	11.30	43.87	18x12	0.30	2.03	51.99	3960	414.02	12460
TBA	500 (37)	20.04	43.82	11.30	47.12	17x10	0.20	2.03	56.36	5173	449.58	17800
TBA	750 (61)	24.59	48.59	11.30	51.89	20x9	0.13	2.03	61.77	7024	492.76	26700
TBA	1000 (61)	28.37	52.37	11.30	55.68	21x8	0.10	2.03	66.27	8832	528.32	35600

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†	Allowable Ampacity Directly Buried 90°C‡
AWG/Kcmil	Ω/km	Ω/km	MΩ*km	Ω/km	A/km	W/km	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
4/0 (19)	0.1673	0.21	0.0201	0.1608	1.329	10.5873	0.207+j0.068	0.066+j0.049	6755.3	300	360
250 (37)	0.1414	0.18	0.0189	0.1575	1.414	11.2664	0.179+j0.058	0.057+j0.047	7881.2		
350 (37)	0.1010	0.13	0.0168	0.1509	1.572	12.5197	0.134+j0.047	0.043+j0.045	10732.8	400	470
500 (37)	0.0709	0.09	0.0149	0.1444	1.765	14.0617	0.091+j0.038	0.033+j0.042	16113.0	470	555
750 (61)	0.0472	0.06	0.0131	0.1378	2.044	16.2992	0.062+j0.031	0.026+j0.038	23905.5	560	650
1000 (61)	0.0354	0.05	0.0116	0.1312	2.267	18.0577	0.047+j0.028	0.022+j0.034	31658.9		

\* Calculations are based on three cables triplexed / concentric shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohm-meter

† Ampacities are based on Figure 7 of ICEA P-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)

‡ Ampacities are based on Figure 1 of ICEA P-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)

