

## 35kV AL 133% TRXLPE One-Third Neutral LLDPE Primary UD

Single Conductor, 420 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, One-third Concentric Neutral, Linear Low Density Polyethylene (LLDPE) Jacket. Silicone Free

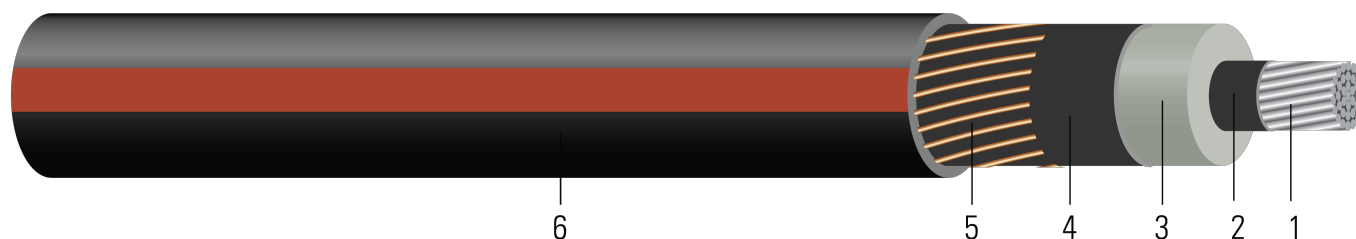


Image not to scale. See Table 1 for dimensions.

### CONSTRUCTION:

- Conductor:** Class B compressed Aluminum ASTM 1350 ¾ hard H16/H26; Conductor moisture block (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:** 420 Mils Tree Retardant Cross Linked Polyethylene 133% 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 (red extruded stripes optional); PowerGlide® LLDPE jacket optional

### APPLICATIONS AND FEATURES:

Southwire's 35kV 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 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-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
- Rural Utility Standard RUS 1728F-U1 or 1728.204 (Electric standards and specifications for materials and construction)
- UL 1072 Listed as MV 90 When Specified
- 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] AL 35000 VOLTS TRXLPE INSULATION 420 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	1/0 (1)	0.325	1.202	420	1.302	6x14	0.438	50	1.530	889	12.	634
TBA	1/0 (19)	0.352	1.229	420	1.329	6x14	0.438	50	1.557	920	12.4	634
TBA	2/0 (19)	0.395	1.272	420	1.372	7x14	0.376	50	1.600	993	120	799
TBA	3/0 (19)	0.443	1.320	420	1.420	9x14	0.292	50	1.648	1088	13.1	1007
618589	4/0 (19)	0.498	1.375	420	1.475	11x14	0.239	80	1.763	1264	14.1	1270
TBA	250 (37)	0.558	1.444	420	1.544	13x14	0.202	80	1.832	1394	14.6	1500
618590	350 (37)	0.661	1.547	420	1.647	18x14	0.146	80	1.935	1640	15.	2100
618591	500 (37)	0.789	1.675	420	1.805	16x12	0.104	80	2.125	2078	170	3000
628573#	750 (61)	0.968	1.863	420	1.993	24x12	0.069	80	2.313	2647	18.5	4500
616939§	750 (61)	0.968	1.863	420	1.993	24x12	0.069	80	2.313	2647	18.5	4500
618592	750 (61)	0.968	1.863	420	1.993	24x12	0.069	80	2.313	2647	18.5	4500
618593	1000 (61)	1.117	2.012	420	2.142	20x10	0.052	80	2.506	3243	20.0	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

# HiDri-Plus® - Water Blocking Powder

§ HiDri-Plus® - Water Blocking Powder. CSA Listed



**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
1/0 (1)	0.168	0.211	0.082	0.055	0.247	1.500	0.520+j0.241	0.212+j0.055	2251.8	160	195
1/0 (19)	0.168	0.211	0.078	0.054	0.258	1.565	0.520+j0.240	0.212+j0.054	2251.8	160	195
2/0 (19)	0.133	0.167	0.073	0.052	0.275	1.667	0.454+j0.200	0.168+j0.052	2627.1	185	220
3/0 (19)	0.105	0.132	0.069	0.050	0.294	1.780	0.379+j0.147	0.133+j0.050	3377.6	210	250
4/0 (19)	0.0836	0.105	0.064	0.049	0.315	1.907	0.320+j0.115	0.107+j0.049	4128.2	235	285
250 (37)	0.0707	0.089	0.059	0.047	0.341	2.065	0.277+j0.093	0.091+j0.047	4878.8		
350 (37)	0.0505	0.064	0.053	0.045	0.379	2.299	0.207+j0.064	0.066+j0.044	6755.3	315	370
500 (37)	0.0354	0.045	0.047	0.043	0.427	2.586	0.151+j0.049	0.048+j0.042	9540.3	380	450
750 (61)	0.0236	0.030	0.041	0.040	0.495	3.003	0.102+j0.035	0.034+j0.039	14310.5	470	545
750 (61)	0.0236	0.030	0.041	0.040	0.495	3.003	0.102+j0.035	0.034+j0.039	14310.5	470	545
750 (61)	0.0236	0.030	0.041	0.040	0.495	3.003	0.102+j0.035	0.034+j0.039	14310.5	470	545
1000 (61)	0.0177	0.023	0.037	0.039	0.549	3.331	0.077+j0.031	0.029+j0.036	18956.4	530	620

\* 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	1/0 (1)	8.25	30.53	10.67	33.07	6x14	1.44	1.27	38.86	1323	304.80	2821
TBA	1/0 (19)	8.94	31.22	10.67	33.76	6x14	1.44	1.27	39.55	1369	314.96	2821
TBA	2/0 (19)	10.03	32.31	10.67	34.85	7x14	1.23	1.27	40.64	1478	3048.00	3556
TBA	3/0 (19)	11.25	33.53	10.67	36.07	9x14	0.96	1.27	41.86	1619	332.74	4481
618589	4/0 (19)	12.65	34.93	10.67	37.47	11x14	0.78	2.03	44.78	1881	358.14	5652
TBA	250 (37)	14.17	36.68	10.67	39.22	13x14	0.66	2.03	46.53	2075	370.84	6675
618590	350 (37)	16.79	39.29	10.67	41.83	18x14	0.48	2.03	49.15	2441	381.00	9345
618591	500 (37)	20.04	42.55	10.67	45.85	16x12	0.34	2.03	53.97	3092	4318.00	13350
628573#	750 (61)	24.59	47.32	10.67	50.62	24x12	0.23	2.03	58.75	3939	469.90	20025
616939§	750 (61)	24.59	47.32	10.67	50.62	24x12	0.23	2.03	58.75	3939	469.90	20025
618592	750 (61)	24.59	47.32	10.67	50.62	24x12	0.23	2.03	58.75	3939	469.90	20025
618593	1000 (61)	28.37	51.10	10.67	54.41	20x10	0.17	2.03	63.65	4826	508.00	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

# HiDri-Plus® - Water Blocking Powder

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**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
1/0 (1)	0.5512	0.69	0.0250	0.1804	0.810	4.9213	0.520+j0.241	0.212+j0.055	2251.8	160	195
1/0 (19)	0.5512	0.69	0.0238	0.1772	0.846	5.1345	0.520+j0.240	0.212+j0.054	2251.8	160	195
2/0 (19)	0.4364	0.55	0.0223	0.1706	0.902	5.4692	0.454+j0.200	0.168+j0.052	2627.1	185	220
3/0 (19)	0.3445	0.43	0.0210	0.1640	0.965	5.8399	0.379+j0.147	0.133+j0.050	3377.6	210	250
4/0 (19)	0.2743	0.34	0.0195	0.1608	1.033	6.2566	0.320+j0.115	0.107+j0.049	4128.2	235	285
250 (37)	0.2320	0.29	0.0180	0.1542	1.119	6.7749	0.277+j0.093	0.091+j0.047	4878.8		
350 (37)	0.1657	0.21	0.0162	0.1476	1.243	7.5427	0.207+j0.064	0.066+j0.044	6755.3	315	370
500 (37)	0.1161	0.15	0.0143	0.1411	1.401	8.4843	0.151+j0.049	0.048+j0.042	9540.3	380	450
750 (61)	0.0774	0.10	0.0125	0.1312	1.624	9.8524	0.102+j0.035	0.034+j0.039	14310.5	470	545
750 (61)	0.0774	0.10	0.0125	0.1312	1.624	9.8524	0.102+j0.035	0.034+j0.039	14310.5	470	545
750 (61)	0.0774	0.10	0.0125	0.1312	1.624	9.8524	0.102+j0.035	0.034+j0.039	14310.5	470	545
1000 (61)	0.0581	0.08	0.0113	0.1280	1.801	10.9285	0.077+j0.031	0.029+j0.036	18956.4	530	620

\* 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)

