



## HVTECK AL 3/C 175NLEPR TS PVC AIA PVC 15kV 100% CSA

3 Conductor, 175 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

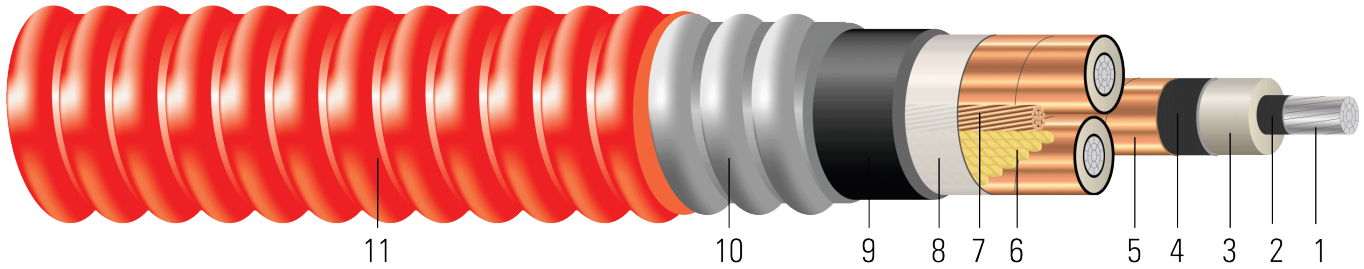


Image not to scale. See Table 1 for dimensions.

### CONSTRUCTION:

1. **Conductor:** Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
2. **Conductor Shield:** Semi-conducting cross-linked copolymer; A conductor separator is used for cable size larger than or equal to 500 Kcmil
3. **Insulation:** 175 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% insulation level
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
6. **Filler:** Interstices filled with non-hydroscoping/non-wicking fillers
7. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
8. **Binder:** Polypropylene tape
9. **Inner Jacket:** PVC inner jacket
10. **Armour:** Aluminum Interlocked Armour (AIA)
11. **Overall Jacket:** Red Polyvinyl Chloride (PVC) Jacket

### APPLICATIONS AND FEATURES:

Southwire's 15kV HVTECK is a CSA armoured cable for industrial and commercial medium voltage applications. Rated FT4, -40°C, Hazardous Locations (HL). These cables are capable of operating continuously at the conductor temperature not in excess of 105°C for normal operation, 140°C for emergency overload, and 250°C for short circuit conditions. Rated for 1000 lbs /FT maximum sidewall pressure. These cables feature sunlight and moisture resistance, exceptional corona resistance, resistance to most chemical soils and acids and are flame retardant.

### SPECIFICATIONS:

- ASTM B801 Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy
- ASTM B836 Compact Rounded Stranded Aluminum Conductors
- CSA C22.2 No. 174 Cables in Hazardous Locations
- CSA C22.2 No. 2556 & No. 0.3 Wire and Cable Test Methods
- CSA C68.10 Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 KV
- CSA C68.3 Shielded & Concentric Neutral Power Cable - 5 to 46 kV
- CSA LTGG [-40°C] - as per C68.10 - for Cold Bend and Impact rating
- CSA HL - for Hazardous Locations rating
- CSA SUN RES - for Sunlight Resistant rating
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable





- ICEA T-29-520 Flame Test (210,000 BTU/Hr)
- IEEE 383 Flame Test (70,000 btu)
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test
- FT1 Flame Test (1,706 BTU/Hr nominal - Vertical Wire Flame Test)
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV (Qualification Test Requirements)

**SAMPLE PRINT LEGEND:**

(CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CPT AL 175 NLEPR AIA 15kV 100% INS LEVEL 25% TS SUN RES 105°C FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
	AWG/ Kcmil	No.	inch	inch	mil	inch	AWG	mil	inch	mil	inch	lb/1000ft
TBA	2	7	0.268	0.656	175	0.716	8	110	2.166	60	2.286	1998
TBA	1	19	0.298	0.686	175	0.746	6	110	2.231	60	2.351	2141
TBA	1/0	19	0.336	0.724	175	0.784	6	110	2.313	75	2.463	2382
TBA	2/0	19	0.376	0.764	175	0.824	6	110	2.399	75	2.549	2574
TBA	3/0	19	0.422	0.810	175	0.870	6	110	2.498	75	2.648	2807
578144 <sup>^</sup>	4/0	18	0.474	0.863	175	0.923	6	110	2.607	60	2.727	3356
578135 <sup>^</sup>	250	35	0.520	0.916	175	0.976	4	110	2.721	60	2.841	3856
TBA	350	37	0.615	1.011	175	1.071	4	110	2.933	75	3.083	3944
TBA	500	37	0.735	1.131	175	1.191	3	125	3.222	85	3.392	4911
578149 <sup>^</sup>	750	58	0.908	1.326	175	1.406	2	125	3.700	70	3.840	6668

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

\* Strand count meets minimum number per ASTM





**Table 2 – Electrical and Engineering Data**

Cond. Size	Min Bending Radius	Max Pull Tension	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Zero Sequence Impedance	Positive Sequence Impedance	Phase Short Circuit Current @ 6 Cycles	Allowable Ampacity In Air 90°C	Allowable Ampacity Directly Buried 90°C
AWG/Kcmil	inch	lb	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
2	16.0	1194	0.267	0.336	0.043	0.045	0.711 + j0.465	0.336 + j0.045	2249	135	157
1	16.5	1506	0.211	0.266	0.040	0.043	0.642 + j0.448	0.266 + j0.042	2342	154	178
1/0	17.2	1900	0.168	0.211	0.037	0.042	0.586 + j0.429	0.211 + j0.040	2459	176	202
2/0	17.8	2395	0.133	0.167	0.030	0.040	0.542 + j0.410	0.167 + j0.039	2584	204	229
3/0	18.5	3020	0.105	0.133	0.030	0.039	0.506 + j0.390	0.133 + j0.037	2726	234	260
4/0	19.1	3808	0.084	0.105	0.029	0.037	0.475 + j0.369	0.105 + j0.036	2887	268	294
250	19.9	4500	0.071	0.090	0.027	0.037	0.457 + j0.348	0.090 + j0.035	3054	296	323
350	21.6	6300	0.050	0.065	0.020	0.030	0.425 + j0.316	0.065 + j0.033	3349	363	386
500	23.7	9000	0.035	0.046	0.020	0.030	0.395 + j0.280	0.046 + j0.032	3721	447	465
750	26.9	13500	0.024	0.033	0.018	0.032	0.364 + j0.236	0.034 + j0.030	4288	566	563

\* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.

\* CEC ampacities are based on:

3/C in air copper and aluminum: D17N

3/C direct buried copper and aluminum: D17E

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

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
	AWG/Kcmil	No.	mm	mm	mm	mm	AWG	mm	mm	mm	mm	kg/km
TBA	2	7	6.81	16.66	4.44	18.19	8	2.79	55.02	1.52	58.06	2973
TBA	1	19	7.57	17.42	4.44	18.95	6	2.79	56.67	1.52	59.72	3186
TBA	1/0	19	8.53	18.39	4.44	19.91	6	2.79	58.75	1.91	62.56	3545
TBA	2/0	19	9.55	19.41	4.44	20.93	6	2.79	60.93	1.91	64.74	3831
TBA	3/0	19	10.72	20.57	4.44	22.10	6	2.79	63.45	1.91	67.26	4177
578144 <sup>^</sup>	4/0	18	12.04	21.92	4.44	23.44	6	2.79	66.22	1.52	69.27	4994
578135 <sup>^</sup>	250	35	13.21	23.27	4.44	24.79	4	2.79	69.11	1.52	72.16	5738
TBA	350	37	15.62	25.68	4.44	27.20	4	2.79	74.50	1.91	78.31	5869
TBA	500	37	18.67	28.73	4.44	30.25	3	3.18	81.84	2.16	86.16	7308
578149 <sup>^</sup>	750	58	23.06	33.68	4.44	35.71	2	3.18	93.98	1.78	97.54	9923

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item





\* Strand count meets minimum number per ASTM

**Table 4 – Electrical and Engineering Data (Metric)**

Cond. Size	Min Bending Radius	Max Pull Tension	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Zero Sequence Impedance	Positive Sequence Impedance	Phase Short Circuit Current @ 6 Cycles	Allowable Ampacity In Air 90°C	Allowable Ampacity Directly Buried 90°C
AWG/ Kcmil	mm	newton	Ω/km	Ω/km	MΩ*km	Ω/km	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
2	406.40	5313	0.8760	1.10	0.0131	0.1476	0.711 + j0.465	0.336 + j0.045	2249	135	157
1	419.10	6702	0.6923	0.87	0.0122	0.1411	0.642 + j0.448	0.266 + j0.042	2342	154	178
1/0	436.88	8455	0.5512	0.69	0.0113	0.1378	0.586 + j0.429	0.211 + j0.040	2459	176	202
2/0	452.12	10658	0.4364	0.55	0.0091	0.1312	0.542 + j0.410	0.167 + j0.039	2584	204	229
3/0	469.90	13439	0.3445	0.44	0.0091	0.1280	0.506 + j0.390	0.133 + j0.037	2726	234	260
4/0	485.14	16946	0.2756	0.34	0.0088	0.1214	0.475 + j0.369	0.105 + j0.036	2887	268	294
250	505.46	20025	0.2329	0.30	0.0082	0.1214	0.457 + j0.348	0.090 + j0.035	3054	296	323
350	548.64	28035	0.1640	0.21	0.0061	0.0984	0.425 + j0.316	0.065 + j0.033	3349	363	386
500	601.98	40050	0.1148	0.15	0.0061	0.0984	0.395 + j0.280	0.046 + j0.032	3721	447	465
750	683.26	60075	0.0787	0.11	0.0055	0.1050	0.364 + j0.236	0.034 + j0.030	4288	566	563

\* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.

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3/C direct buried copper and aluminum: D17E

