



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

3 Conductor, 175 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

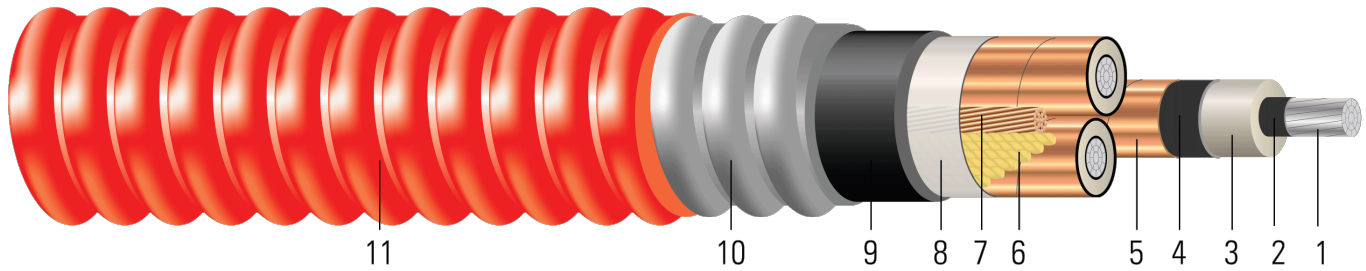


Image not to scale. See Table 1 for dimensions.

### 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 Tree Retardant Cross Linked Polyethylene 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 TRXLPE 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**

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
2	7	0.268	0.656	175	0.716	8	110	2.166	60	2.286	1998
1	19	0.298	0.686	175	0.746	6	110	2.231	60	2.351	2141
1/0	19	0.336	0.724	175	0.784	6	110	2.313	75	2.463	2382
2/0	19	0.376	0.764	175	0.824	6	110	2.399	75	2.549	2574
3/0	19	0.422	0.810	175	0.870	6	110	2.498	75	2.648	2807
4/0	19	0.474	0.862	175	0.922	6	110	2.611	75	2.761	3082
250	37	0.520	0.916	175	0.976	4	110	2.727	75	2.877	3375
350	37	0.615	1.011	175	1.071	4	110	2.933	75	3.083	3944
500	37	0.735	1.131	175	1.191	3	125	3.222	85	3.392	4911
750	61	0.908	1.314	175	1.374	2	125	3.617	85	3.787	6250

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	0.056	0.045	0.711 + j0.465	0.336 + j0.045	2249	135	157
1	16.5	1506	0.211	0.266	0.052	0.043	0.642 + j0.448	0.266 + j0.042	2342	154	178
1/0	17.2	1900	0.168	0.211	0.048	0.042	0.586 + j0.429	0.211 + j0.040	2459	176	202
2/0	17.8	2395	0.133	0.167	0.044	0.040	0.542 + j0.410	0.167 + j0.039	2584	204	229
3/0	18.5	3020	0.105	0.133	0.041	0.039	0.506 + j0.390	0.133 + j0.037	2726	234	260
4/0	19.3	3808	0.084	0.105	0.037	0.037	0.475 + j0.369	0.105 + j0.036	2887	268	294
250	20.1	4500	0.071	0.090	0.035	0.037	0.457 + j0.348	0.090 + j0.035	3054	296	323
350	21.6	6300	0.050	0.065	0.030	0.030	0.425 + j0.316	0.065 + j0.033	3349	363	386
500	23.7	9000	0.035	0.046	0.030	0.030	0.395 + j0.280	0.046 + j0.032	3721	447	465
750	26.5	13500	0.020	0.030	0.020	0.030	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)**

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
2	7	6.81	16.66	4.44	18.19	8	2.79	55.02	1.52	58.06	2973
1	19	7.57	17.42	4.44	18.95	6	2.79	56.67	1.52	59.72	3186
1/0	19	8.53	18.39	4.44	19.91	6	2.79	58.75	1.91	62.56	3545
2/0	19	9.55	19.41	4.44	20.93	6	2.79	60.93	1.91	64.74	3831
3/0	19	10.72	20.57	4.44	22.10	6	2.79	63.45	1.91	67.26	4177
4/0	19	12.04	21.89	4.44	23.42	6	2.79	66.32	1.91	70.13	4587
250	37	13.21	23.27	4.44	24.79	4	2.79	69.27	1.91	73.08	5023
350	37	15.62	25.68	4.44	27.20	4	2.79	74.50	1.91	78.31	5869
500	37	18.67	28.73	4.44	30.25	3	3.18	81.84	2.16	86.16	7308
750	61	23.06	33.38	4.44	34.90	2	3.18	91.87	2.16	96.19	9301

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	0.0171	0.1476	0.711 + j0.465	0.336 + j0.045	2249	135	157
1	419.10	6702	0.6923	0.87	0.0158	0.1411	0.642 + j0.448	0.266 + j0.042	2342	154	178
1/0	436.88	8455	0.5512	0.69	0.0146	0.1378	0.586 + j0.429	0.211 + j0.040	2459	176	202
2/0	452.12	10658	0.4364	0.55	0.0134	0.1312	0.542 + j0.410	0.167 + j0.039	2584	204	229
3/0	469.90	13439	0.3445	0.44	0.0125	0.1280	0.506 + j0.390	0.133 + j0.037	2726	234	260
4/0	490.22	16946	0.2756	0.34	0.0113	0.1214	0.475 + j0.369	0.105 + j0.036	2887	268	294
250	510.54	20025	0.2329	0.30	0.0107	0.1214	0.457 + j0.348	0.090 + j0.035	3054	296	323
350	548.64	28035	0.1640	0.21	0.0091	0.0984	0.425 + j0.316	0.065 + j0.033	3349	363	386
500	601.98	40050	0.1148	0.15	0.0091	0.0984	0.395 + j0.280	0.046 + j0.032	3721	447	465
750	673.10	60075	0.0656	0.10	0.0061	0.0984	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:

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3/C direct buried copper and aluminum: D17E

