HVTECK AL 1/C 420TRXLPE TS PVC AIA PVC 35kV 133% CSA

Single Conductor, 420 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

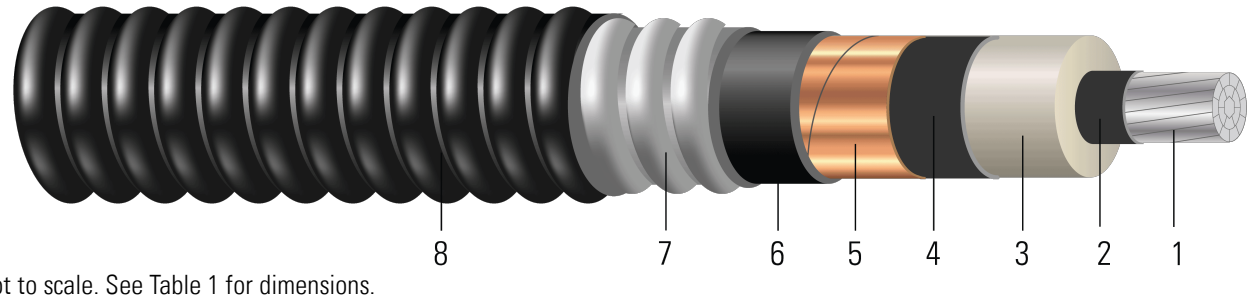


Image not to scale. See Table 1 for dimensions.

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:** 420 Mils Tree Retardant Cross Linked Polyethylene 133% 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. **Inner Jacket:** PVC inner jacket
7. **Armour:** Aluminum Interlocked Armour (AIA)
8. **Overall Jacket:** Black Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 35kV 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 (1/0 and Larger)

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UPDATED: Dec. 31, 2024, 11:07 p.m.UTC REVISION: 1.000.000

- 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# 1/C [#AWG or #kcmil] CPT AL 420 TRXLPE AIA 35kV 133% 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	Inner Jacket Thickness	Dia. Over Inner Jacket	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	inch	mil	inch	lb/ 1000ft	lb/ 1000ft	inch
1/0	19	0.336	1.214	420	1.274	80	1.454	1.764	60	1.884	105	1704	5
2/0	19	0.376	1.254	420	1.314	80	1.494	1.804	60	1.924	108	1788	5
3/0	19	0.423	1.301	420	1.361	80	1.541	1.851	60	1.971	112	1889	5
4/0	19	0.475	1.353	420	1.413	80	1.593	1.903	60	2.023	116	2005	5.5
250	37	0.52	1.406	420	1.466	80	1.646	1.956	60	2.076	121	2121	5.5
350	37	0.616	1.502	420	1.562	110	1.802	2.112	60	2.232	128	2472	6
500	37	0.736	1.622	420	1.682	110	1.922	2.232	60	2.352	138	2794	6
750	61	0.908	1.804	420	1.864	110	2.104	2.414	75	2.564	153	3381	7

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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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
1/0	13.2	633	0.167	0.229	0.08	0.061	0.570+j0.321	0.230+j0.065	3978	221	219
2/0	13.5	798	0.133	0.182	0.075	0.059	0.520+j0.309	0.183+j0.063	4102	253	246
3/0	13.8	1006	0.105	0.144	0.071	0.057	0.479+j0.297	0.145+j0.061	4248	288	275
4/0	14.2	1269	0.084	0.115	0.066	0.055	0.447+j0.284	0.117+j0.059	4409	327	305
250	14.5	1500	0.07	0.096	0.062	0.054	0.424+j0.272	0.098+j0.057	4573	367	343
350	15.6	2100	0.051	0.07	0.056	0.051	0.390+j0.251	0.072+j0.055	4871	443	399
500	16.5	3000	0.036	0.05	0.05	0.048	0.361+j0.229	0.052+j0.052	5242	529	451
750	17.9	4500	0.023	0.033	0.043	0.046	0.330+j0.200	0.035+j0.049	5806	633	505

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
* CEC ampacities are based on:
3-1/C in air copper and aluminum: D17M
3-1/C direct buried copper and aluminum: D17A

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Table 3 – Weights and Measurements (Metric)

Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Inner Jacket Thickness	Dia. Over Inner Jacket	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
AWG/ Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg/km	kg/km	inch
1/0	19	8.53	30.84	10.67	32.36	2.03	36.93	44.81	1.52	47.85	156	2536	5
2/0	19	9.55	31.85	10.67	33.38	2.03	37.95	45.82	1.52	48.87	161	2661	5
3/0	19	10.74	33.05	10.67	34.57	2.03	39.14	47.02	1.52	50.06	167	2811	5
4/0	19	12.07	34.37	10.67	35.89	2.03	40.46	48.34	1.52	51.38	173	2984	5.5
250	37	13.21	35.71	10.67	37.24	2.03	41.81	49.68	1.52	52.73	180	3156	5.5
350	37	15.65	38.15	10.67	39.67	2.79	45.77	53.64	1.52	56.69	190	3679	6
500	37	18.69	41.20	10.67	42.72	2.79	48.82	56.69	1.52	59.74	205	4158	6
750	61	23.06	45.82	10.67	47.35	2.79	53.44	61.32	1.91	65.13	228	5031	7

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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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
1/0	335.28	2817	0.5479	0.75	0.0244	0.2001	0.570+j0.321	0.230+j0.065	3978	221	219
2/0	342.90	3551	0.4364	0.60	0.0229	0.1936	0.520+j0.309	0.183+j0.063	4102	253	246
3/0	350.52	4477	0.3445	0.47	0.0216	0.1870	0.479+j0.297	0.145+j0.061	4248	288	275
4/0	360.68	5647	0.2756	0.38	0.0201	0.1804	0.447+j0.284	0.117+j0.059	4409	327	305
250	368.30	6675	0.2297	0.31	0.0189	0.1772	0.424+j0.272	0.098+j0.057	4573	367	343
350	396.24	9345	0.1673	0.23	0.0171	0.1673	0.390+j0.251	0.072+j0.055	4871	443	399
500	419.10	13350	0.1181	0.16	0.0152	0.1575	0.361+j0.229	0.052+j0.052	5242	529	451
750	454.66	20025	0.0755	0.11	0.0131	0.1509	0.330+j0.200	0.035+j0.049	5806	633	505

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
***** CEC ampacities are based on:
3-1/C in air copper and aluminum: D17M
3-1/C direct buried copper and aluminum: D17A

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