HVTECK CU 1/C 280TRXLPE TS PVC AIA PVC 28kV 100% CSA

Single Conductor, 280 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

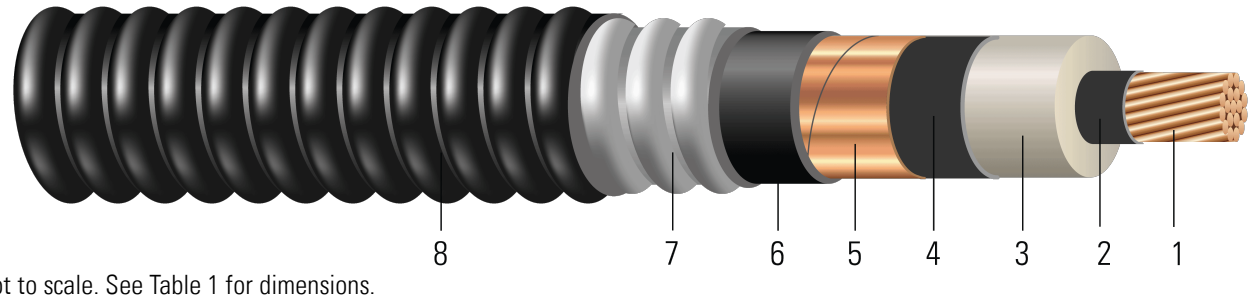

Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8
2. **Conductor Shield:** Semi-conducting cross-linked copolymer
3. **Insulation:** 280 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. **Inner Jacket:** PVC inner jacket
7. **Armour:** Aluminum Interlocked Armour (AIA)
8. **Overall Jacket:** Black Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 28kV 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 B3 Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper 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)
- FT1 Flame Test (1,706 BTU/Hr nominal - Vertical Wire Flame Test)

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- 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] CU 280 TRXLPE AIA 28kV 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	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
	AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft	inch
TBA	1	19	0.322	0.92	280	0.98	80	1.37	50	1.47	339	1233	4
TBA	1/0	19	0.362	0.96	280	1.02	80	1.41	50	1.51	410	1344	4
TBA	2/0	19	0.405	1.003	280	1.063	80	1.453	50	1.553	498	1475	4
TBA	3/0	19	0.456	1.054	280	1.114	80	1.604	60	1.724	610	1815	4.5
TBA	4/0	19	0.512	1.11	280	1.17	80	1.66	60	1.78	749	2016	4.5
TBA	250	37	0.558	1.164	280	1.224	80	1.714	60	1.834	873	2203	5
672631	350	37	0.661	1.267	280	1.341	80	1.865	60	1.985	1194	2454	5
653134	350	37	0.661	1.267	280	1.341	80	1.865	60	1.985	1194	2458	5
TBA	500	37	0.789	1.395	280	1.455	80	1.945	60	2.065	1664	3251	5.5
TBA	750	61	0.968	1.584	280	1.644	110	2.194	60	2.314	2451	4379	6

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
1 Comply with ICEA S-93-639 Appendix C for jacket thickness determination
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	10.3	669	0.128	0.175	0.064	0.057	0.530+j0.402	0.176+j0.062	3067	245	244
1/0	10.6	844	0.102	0.139	0.06	0.055	0.493+j0.387	0.140+j0.060	3191	278	272
2/0	10.9	1064	0.082	0.112	0.056	0.053	0.465+j0.372	0.113+j0.058	3325	316	303
3/0	12.1	1342	0.064	0.087	0.052	0.052	0.436+j0.355	0.088+j0.058	3483	356	333
4/0	12.5	1692	0.051	0.07	0.048	0.05	0.417+j0.338	0.071+j0.056	3656	403	367
250	12.8	2000	0.043	0.059	0.045	0.049	0.403+j0.322	0.060+j0.054	3823	455	411
350	13.9	2800	0.031	0.043	0.04	0.047	0.379+j0.292	0.045+j0.052	4186	537	459
350	13.9	2800	0.031	0.043	0.04	0.047	0.379+j0.292	0.045+j0.052	4186	537	459
500	14.5	4000	0.021	0.03	0.035	0.044	0.359+j0.266	0.032+j0.049	4539	616	499
750	16.2	6000	0.014	0.021	0.03	0.042	0.335+j0.229	0.023+j0.047	5125	716	557

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
***** CEC ampacities are based on:

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3-1/C in air copper and aluminum: D17M
3-1/C direct buried copper and aluminum: D17A

Table 3 – Weights and Measurements (Metric)

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Inner Jacket Thickness	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	kg/km	kg/km	inch
TBA	1	19	8.18	23.37	7.11	24.89	2.03	34.80	1.27	37.34	504	1835	4
TBA	1/0	19	9.19	24.38	7.11	25.91	2.03	35.81	1.27	38.35	610	2000	4
TBA	2/0	19	10.29	25.48	7.11	27.00	2.03	36.91	1.27	39.45	741	2195	4
TBA	3/0	19	11.58	26.77	7.11	28.30	2.03	40.74	1.52	43.79	908	2701	4.5
TBA	4/0	19	13.00	28.19	7.11	29.72	2.03	42.16	1.52	45.21	1115	3000	4.5
TBA	250	37	14.17	29.57	7.11	31.09	2.03	43.54	1.52	46.58	1299	3278	5
672631	350	37	16.79	32.18	7.11	34.06	2.03	47.37	1.52	50.42	1777	3652	5
653134	350	37	16.79	32.18	7.11	34.06	2.03	47.37	1.52	50.42	1777	3658	5
TBA	500	37	20.04	35.43	7.11	36.96	2.03	49.40	1.52	52.45	2476	4838	5.5
TBA	750	61	24.59	40.23	7.11	41.76	2.79	55.73	1.52	58.78	3647	6517	6

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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	261.62	2977	0.4199	0.57	0.0195	0.1870	0.530+j0.402	0.176+j0.062	3067	245	244
1/0	269.24	3756	0.3346	0.46	0.0183	0.1804	0.493+j0.387	0.140+j0.060	3191	278	272
2/0	276.86	4735	0.2690	0.37	0.0171	0.1739	0.465+j0.372	0.113+j0.058	3325	316	303
3/0	307.34	5972	0.2100	0.29	0.0158	0.1706	0.436+j0.355	0.088+j0.058	3483	356	333
4/0	317.50	7529	0.1673	0.23	0.0146	0.1640	0.417+j0.338	0.071+j0.056	3656	403	367
250	325.12	8900	0.1411	0.19	0.0137	0.1608	0.403+j0.322	0.060+j0.054	3823	455	411
350	353.06	12460	0.1017	0.14	0.0122	0.1542	0.379+j0.292	0.045+j0.052	4186	537	459
350	353.06	12460	0.1017	0.14	0.0122	0.1542	0.379+j0.292	0.045+j0.052	4186	537	459
500	368.30	17800	0.0689	0.10	0.0107	0.1444	0.359+j0.266	0.032+j0.049	4539	616	499
750	411.48	26700	0.0459	0.07	0.0091	0.1378	0.335+j0.229	0.023+j0.047	5125	716	557

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