

HVTECK CU 1/C 90NLEPR CB PVC AIA PVC 5kV 100% CSA

Single Conductor, 90 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 100% Insulation Level, Concentric Bond, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

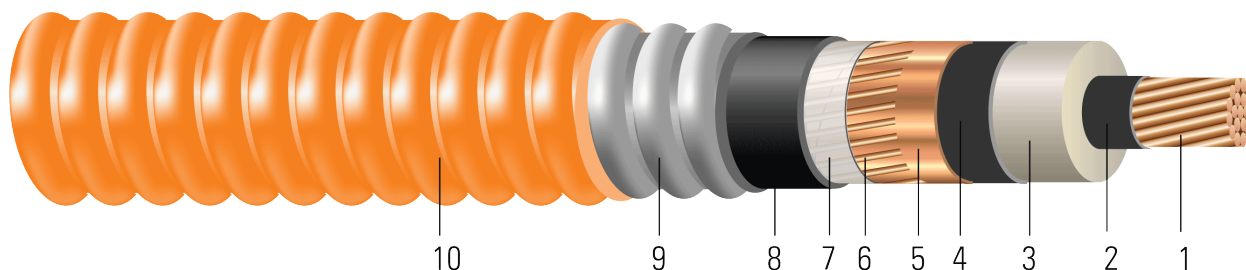


Image not to scale. See Table 1 for dimensions.

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:** 90 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% insulation level
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Tape Shield:** 5 mil tape shield
6. **Concentric Shield:** Concentrically applied copper bond / shield wires. Complies with greater than the minimum requirement as per Table 44, CSA Standard C68.10 and Table 16A, Canadian Electrical Code Part 1
7. **Neutral Separator:** Mylar tape
8. **Inner Jacket:** PVC inner jacket
9. **Armour:** Aluminum Interlocked Armour (AIA)
10. **Overall Jacket:** Orange Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 5kV 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)
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV (Qualification Test Requirements)

SAMPLE PRINT LEGEND:

{SQMTR} {CSA} SOUTHWIRE{R} POWER CABLE {NESC} MASTER-DESIGN 1/C XXX KCMIL CU X.XX mm (90 mils) NL-EPR AIA 5KV 100% INS LEVEL 25%TS CB XX X XX AWG SUN RES 105{D}C FT4 (-40{D}C) LTGG RoHS

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Concentric Neutral	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
	AWG/Kcmil	No.	inch	inch	mil	inch	No. x AWG	mil	inch	mil	inch	lb/1000ft
TBA	2	7	0.282	0.500	90	0.560	7 x 14	80	1.076	50	1.176	767
TBA	1	19	0.322	0.540	90	0.600	11 x 14	80	1.116	50	1.216	901
TBA	1/0	19	0.361	0.579	90	0.639	11 x 14	80	1.155	50	1.255	994
TBA	2/0	19	0.405	0.623	90	0.683	11 x 14	80	1.199	50	1.299	1106
TBA	3/0	19	0.456	0.674	90	0.734	13 x 14	80	1.360	50	1.460	1285
TBA	4/0	19	0.512	0.730	90	0.790	13 x 14	80	1.416	50	1.516	1456
TBA	250	37	0.558	0.784	90	0.844	17 x 14	80	1.470	50	1.570	1667
TBA	350	37	0.661	0.887	90	0.947	21 x 14	80	1.573	60	1.693	2131
587711	500	37	0.789	0.992	90	1.052	17 X 12	80	1.732	60	1.852	2901
589126	750	61	0.968	1.204	90	1.264	21 x 12	80	1.956	60	2.076	3987
TBA	1000	61	1.117	1.353	90	1.413	21 x 12	110	2.157	60	2.277	4900

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



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 @ 60Hz	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	8.2	530	0.162	0.204	0.029	0.054	0.186 + j0.028	0.191 + j0.036	5458	215	221
1	8.5	669	0.128	0.162	0.026	0.052	0.144 + j0.025	0.149 + j0.033	8577	245	247
1/0	8.7	844	0.102	0.128	0.024	0.050	0.11 + j0.024	0.115 + j0.032	8577	278	275
2/0	9.0	1064	0.081	0.102	0.022	0.048	0.084 + j0.023	0.09 + j0.031	8577	317	306
3/0	10.2	1342	0.064	0.081	0.020	0.048	0.063 + j0.021	0.068 + j0.029	10137	357	335
4/0	10.6	1692	0.051	0.065	0.018	0.047	0.047 + j0.02	0.052 + j0.028	10137	404	369
250	10.9	2000	0.043	0.056	0.017	0.045	0.038 + j0.019	0.044 + j0.027	13256	456	412
350	11.8	2800	0.031	0.041	0.015	0.043	0.023 + j0.018	0.029 + j0.026	16376	537	456
500	12.9	4000	0.022	0.030	0.013	0.041	0.012 + j0.016	0.018 + j0.024	20275	616	497
750	14.5	6000	0.014	0.023	0.011	0.039	0.005 + j0.015	0.011 + j0.023	26018	706	551
1000	15.9	8000	0.011	0.019	0.010	0.038	0.001 + j0.014	0.007 + j0.022	26018	813	596

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

Table 3 – Weights and Measurements (Metric)

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Concentric Neutral	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
	AWG/Kcmil	No.	mm	mm	mm	mm	No. x AWG	mm	mm	mm	mm	kg/km
TBA	2	7	7.16	12.70	2.29	14.22	7 x 14	2.03	27.33	1.27	29.87	1141
TBA	1	19	8.18	13.72	2.29	15.24	11 x 14	2.03	28.35	1.27	30.89	1341
TBA	1/0	19	9.17	14.71	2.29	16.23	11 x 14	2.03	29.34	1.27	31.88	1479
TBA	2/0	19	10.29	15.82	2.29	17.35	11 x 14	2.03	30.45	1.27	32.99	1646
TBA	3/0	19	11.58	17.12	2.29	18.64	13 x 14	2.03	34.54	1.27	37.08	1912
TBA	4/0	19	13.00	18.54	2.29	20.07	13 x 14	2.03	35.97	1.27	38.51	2167
TBA	250	37	14.17	19.91	2.29	21.44	17 x 14	2.03	37.34	1.27	39.88	2481
TBA	350	37	16.79	22.53	2.29	24.05	21 x 14	2.03	39.95	1.52	43.00	3171
587711	500	37	20.04	25.20	2.29	26.72	17 X 12	2.03	43.99	1.52	47.04	4317
589126	750	61	24.59	30.58	2.29	32.11	21 x 12	2.03	49.68	1.52	52.73	5933
TBA	1000	61	28.37	34.37	2.29	35.89	21 x 12	2.79	54.79	1.52	57.84	7292

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



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 @ 60Hz	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	208.28	2359	0.5315	0.67	0.0088	0.1772	0.186 + j0.028	0.191 + j0.036	5458	215	221
1	215.90	2977	0.4199	0.53	0.0079	0.1706	0.144 + j0.025	0.149 + j0.033	8577	245	247
1/0	220.98	3756	0.3346	0.42	0.0073	0.1640	0.11 + j0.024	0.115 + j0.032	8577	278	275
2/0	228.60	4735	0.2657	0.33	0.0067	0.1575	0.084 + j0.023	0.09 + j0.031	8577	317	306
3/0	259.08	5972	0.2100	0.27	0.0061	0.1575	0.063 + j0.021	0.068 + j0.029	10137	357	335
4/0	269.24	7529	0.1673	0.21	0.0055	0.1542	0.047 + j0.02	0.052 + j0.028	10137	404	369
250	276.86	8900	0.1411	0.18	0.0052	0.1476	0.038 + j0.019	0.044 + j0.027	13256	456	412
350	299.72	12460	0.1017	0.13	0.0046	0.1411	0.023 + j0.018	0.029 + j0.026	16376	537	456
500	327.66	17800	0.0722	0.10	0.0040	0.1345	0.012 + j0.016	0.018 + j0.024	20275	616	497
750	368.30	26700	0.0459	0.08	0.0034	0.1280	0.005 + j0.015	0.011 + j0.023	26018	706	551
1000	403.86	35600	0.0361	0.06	0.0030	0.1247	0.001 + j0.014	0.007 + j0.022	26018	813	596

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

