



HVTECK SPECIFICATIONS

HVTECK CU 1/C 140TRXLPE CB PVC AIA PVC 8KV 133% CSA

PRODUCT HIGHLIGHTS

Southwire's 8KV HVTECK is a CSA armoured cable for industrial and commercial medium voltage applications. Rated FT4, -40°C, Hazardous Locations (HL) and 105°C for use in harsh Canadian environments. For installation in cable trays, duct banks, direct burial, troughs, continuous rigid cable supports and concrete encaseable. When used in a 3 phase system, the combination of each bond conductor from each single conductor cable provide a 100% bonded system to ground.

CONSTRUCTION

Conductor

- Class B compressed stranded copper
- in accordance with ASTM B3 and ASTM B8

Options

- Class B compact stranded -8000 Series Aluminum -ACM
- Class B compact stranded copper

Conductor Shield

- Extruded semi-conducting thermosetting polymeric layer

Insulation

- TR-XLPE - (Tree Retardent Cross Linked Polyethylene)
- Thickness: 0.14 inches (3.56mm) - nominal
- Insulation level: 133%
- 105°C rated

Insulation Shield

- Extruded Semi-conducting thermosetting polymeric layer
- CSA 68.10 - Shield Removal/termination requirements are printed on the surface
- Meets requirement of ICEA but built to CSA standards

Copper Full Bond Wire 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

Inner Jacket

- Black PVC
- Thickness:
 - No.2 AWG to 750 kcmil = 0.08 inches (2.03mm)
 - 1000 kcmil = 0.11 inches (2.79mm)

Armour

- Aluminum Interlocked Armour (AIA)
- Optional Galvanized Steel Interlocked Armour (GSIA)

Overall Jacket

- Black PVC (optional colours available)
- Nominal Thickness:
 - No.2 AWG to 250 kcmil = 0.05 inches (1.27mm)
 - 350 kcmil to 1000 kcmil = 0.06 inches (1.52mm)

Typical Print Legend

- (CSA) SOUTHWIRE (NESC) #P# [#AWG or #kcmil] CU 140 TRXLPE AIA 8KV 133% INS LEVEL CB [No. x SIZE] AWG SUN RES 105° FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

TABLE 1 - WEIGHTS & MEASUREMENTS

HVTECK Product Code	Conductor Size *	Conductor Diameter		Diameter Over Insulation		Diameter Over Insulation Shield		CB Shield ***	Diameter Over Inner Jacket		Diameter Over Armour		Approx. Overall Diameter		Minimum Bend Radius		Approx. Weight of Cable		Max. Reel Weight (reel and cable) **		Max. Reel Diameter / Width **		Max. Length of Cable on Reel **	
	AWG or Kcmil	inches	mm	inches	mm	inches	mm	No. X AWG	inches	mm	inches	mm	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
CU140G81-002	2(7)	0.283	7.2	0.593	15.1	0.673	17.1	11X16	0.884	22.4	1.204	30.6	1.304	33.1	15.6	397	814	1211	5633	2555	78/54	1.98/1.37	6000	1829
CU140G81-001	1(19)	0.322	8.2	0.632	16.1	0.712	18.1	17X16	0.923	23.4	1.243	31.6	1.343	34.1	16.1	409	924	1375	6704	3041	96/54.5	2.44/1.38	6000	1829
CU140G81-010	1/0(19)	0.362	9.2	0.672	17.1	0.752	19.1	17X16	0.963	24.5	1.283	32.6	1.383	35.1	16.6	421	1020	1517	7277	3301	96/54.5	2.44/1.38	6000	1829
CU140G81-020	2/0(19)	0.405	10.3	0.715	18.2	0.795	20.2	17X16	1.006	25.5	1.326	33.7	1.426	36.2	17.1	435	1171	1742	8183	3712	96/54.5	2.44/1.38	6000	1829
CU140G81-030	3/0(19)	0.456	11.6	0.766	19.5	0.846	21.5	21X16	1.057	26.8	1.377	35.0	1.477	37.5	17.7	450	1335	1987	9169	4159	96/54.5	2.44/1.38	6000	1829
CU140G81-040	4/0(19)	0.512	13.0	0.822	20.9	0.902	22.9	21X16	1.113	28.3	1.433	36.4	1.533	38.9	18.4	467	1511	2249	10227	4639	96/54.5	2.44/1.38	6000	1829
CU140G81-250	250(37)	0.558	14.2	0.878	22.3	0.958	24.3	27X16	1.169	29.7	1.489	37.8	1.589	40.4	19.1	484	1645	2448	11211	5085	104/56.5	2.64/1.44	6000	1829
CU140G81-350	350(37)	0.661	16.8	0.981	24.9	1.061	26.9	21X14	1.285	32.6	1.605	40.8	1.725	43.8	20.7	526	2160	3214	14301	6487	104/56.5	2.64/1.44	6000	1829
CU140G81-500	500(37)	0.789	20.0	1.109	28.2	1.189	30.2	27X14	1.413	35.9	1.733	44.0	1.853	47.1	22.2	565	2767	4118	16498	7483	108/70.5	2.74/1.79	5400	1646
CU140G81-750	750(61)	0.968	24.6	1.298	33.0	1.378	35.0	33X14	1.602	40.7	1.932	49.1	2.052	52.1	24.6	625	3810	5670	16414	7445	108/70.5	2.74/1.79	3900	1189
CU140G81-1000	1000(61)	1.117	28.4	1.447	36.8	1.527	38.8	33X14	1.811	46.0	2.141	54.4	2.261	57.4	27.1	689	4825	7181	16514	7491	108/70.5	2.74/1.79	3100	945

NOTE: These are minimum average dimensions as per CSA Standards.

* Other conductor sizes and outer jacket colours are available upon request. (#s in brackets represent # of strands / conductor)

** Longer maximum lengths may be possible. Standard sizes and lengths may be supplied. Reel sizes are not guaranteed. The factory reserves the right to make changes as necessary to optimize manufacturing requirements.

*** Concentric 1/3 Bond size values are available on request



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DESIGN

Qualification Standards

- 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 C22.2 No. 174 - Cables in Hazardous Locations
- ICEA S-93-639 (NEMA WC 74) 5 to 46 KV - Shielded Power Cable
- AEIC CS-8 - Qualification Testing Requirements

Flame Test Ratings

- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 BTU/Hr)

Product Ratings

- CSA C22.2 No. 2556 & No. 0.3 - Wire and Cable Test Methods
- CSA LTGG [-40°C] - as per C68.10 - for Cold Bend and Impact rating
- CSA HL - for Hazardous Locations rating
- CSA FT4 - for Flame Retardancy rating
- CSA SUN RES - for Sunlight Resistant rating

Operating Temperatures

- -40°C - CSA Cold Bend and Impact Temperature
- -25°C - Min. Installation Temperature
- 105°C - Max Continuous Operating Temperature
- 140°C for Emergency Overload Temperature
- 250°C for Short Circuit Temperature

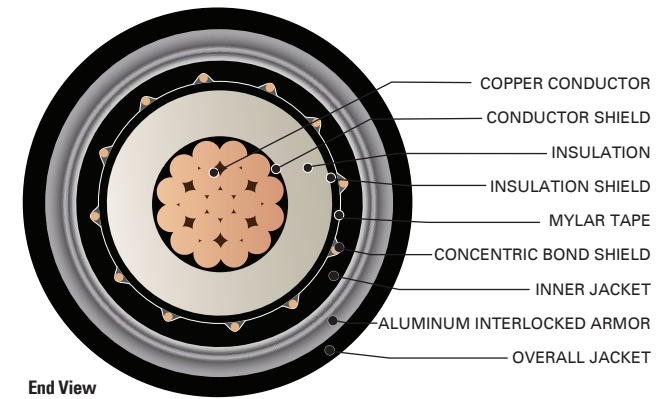


TABLE 2 - ENGINEERING SPECIFICATIONS

HVTECK Product Code	Maximum Pulling Tension		DC Resistance @ 25°C R _{DC}		AC Resistance @ 90°C 60 Hz (triplex formation) R _{AC}		Inductance L		Capacitance C		Inductive Reactance @ 60Hz (triplexed) X _L		Capacitive Reactance @ 60Hz (triplexed) X _C		Positive - Sequence Impedance*	Zero - Sequence Impedance*	Short Circuit Current (each phase conductor) @ 60Hz	Allowable Ampacities in Ventilated Cable Tray †	Allowable Ampacities Directly Buried in Earth ‡
	lb	Newtons	Ω / 1000 ft.	Ω / km	Ω / 1000 ft.	Ω / km	mH / 1000 ft	mH / km	μF / 1000 ft	μF / km	Ω / 1000 ft.	Ω / km	MΩ • 1000ft	MΩ • km					
CU140G81-002	531	2361	0.162	0.532	0.203	0.665	0.1027	0.3369	0.0527	0.1729	0.0387	0.1270	0.0503	0.0153	0.205 + j0.057	0.500 + j0.191	4.8	215	221
CU140G81-001	670	2978	0.129	0.423	0.161	0.529	0.0987	0.3238	0.0578	0.1896	0.0372	0.1221	0.0459	0.0140	0.165 + j0.054	0.385 + j0.109	6.0	245	247
CU140G81-010	845	3758	0.102	0.335	0.128	0.419	0.0953	0.3126	0.0630	0.2067	0.0359	0.1179	0.0421	0.0128	0.131 + j0.052	0.351 + j0.108	7.6	278	275
CU140G81-020	1065	4736	0.081	0.266	0.101	0.333	0.0922	0.3026	0.0686	0.2250	0.0348	0.1141	0.0387	0.0118	0.105 + j0.050	0.325 + j0.106	9.6	317	306
CU140G81-030	1342	5971	0.064	0.211	0.080	0.264	0.0892	0.2926	0.0751	0.2466	0.0336	0.1103	0.0353	0.0108	0.084 + j0.048	0.269 + j0.080	12.1	357	335
CU140G81-040	1693	7530	0.051	0.167	0.064	0.210	0.0864	0.2836	0.0823	0.2701	0.0326	0.1069	0.0322	0.0098	0.068 + j0.046	0.253 + j0.079	15.2	404	369
CU140G81-250	2000	8896	0.043	0.141	0.054	0.178	0.0852	0.2796	0.0860	0.2821	0.0321	0.1054	0.0308	0.0094	0.059 + j0.045	0.206 + j0.058	18.0	456	412
CU140G81-350	2800	12455	0.031	0.101	0.039	0.128	0.0816	0.2679	0.0987	0.3239	0.0308	0.1010	0.0269	0.0082	0.044 + j0.042	0.164 + j0.046	25.2	537	456
CU140G81-500	4000	17793	0.022	0.071	0.028	0.091	0.0783	0.2570	0.1145	0.3756	0.0295	0.0969	0.0232	0.0071	0.034 + j0.040	0.127 + j0.035	36.0	616	497
CU140G81-750	6000	26689	0.014	0.047	0.019	0.063	0.0755	0.2476	0.1329	0.4360	0.0284	0.0933	0.0200	0.0061	0.026 + j0.037	0.101 + j0.028	53.9	706	551
CU140G81-1000	8000	35586	0.011	0.035	0.015	0.049	0.0733	0.2407	0.1506	0.4941	0.0277	0.0907	0.0176	0.0054	0.021 + j0.036	0.097 + j0.028	71.9	813	596

* Calculations are based on three cables triplexed / 5 mil 25% over lapping copper tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter

† Ampacities are based on Table D17M of the 2015 Canadian Electrical Code Part I (40°C Ambient Air Temperature, indoor installation)

‡ Ampacities are based on Table D17A of the 2015 Canadian Electrical Code Part I