



HVTECK SPECIFICATIONS

HVTECK CU 3/C 140EPR TS 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.

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

- No-lead EPR (Ethylene Propylene Rubber)
- 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

- Phase identification as per ICEA Method 3, using printed circuit numbers
- Meets requirement of ICEA but built to CSA standards

Copper Tape Shield

- Helically wrapped 5 mil copper tape with 25% overlap

Bonding Conductor

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

Fillers

- Non-wicking, non-hygroscopic

Inner Jacket

- Black PVC
- Thickness:
 - No.2 AWG = 0.08 inches (2.03mm)
 - No.1 AWG to 350 kcmil = 0.11 inches (2.79mm)
 - 500 kcmil to 750 kcmil = 0.14 inches (3.56mm)

Armour

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

Overall Jacket

- Black PVC (optional colours available)
- Nominal Thickness:
 - No.2 AWG to No.1/0 AWG = 0.06 inches (1.52mm)
 - No.2/0 AWG to 350 kcmil = 0.075 inches (1.91mm)
 - 500 kcmil to 750 kcmil = 0.085 inches (2.16mm)

Typical Print Legend

- (CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CU 140 EPR AIA 8KV 133% INS LEVEL 25% TS 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		Bonding Cond. Size	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	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
CU140H23-002	2(7)	0.283	7.2	0.593	15.1	0.673	17.1	6	1.657	42.1	1.987	50.5	2.107	53.5	14.7	375	2223	3309	11894	5395	108/70.5	2.74/1.79	4650	1417	
CU140H23-001	1(19)	0.322	8.2	0.632	16.1	0.712	18.1	6	1.801	45.7	2.131	54.1	2.251	57.2	15.8	400	2595	3862	13234	6003	108/70.5	2.74/1.79	4500	1372	
CU140H23-010	1/0(19)	0.362	9.2	0.672	17.1	0.752	19.1	6	1.888	47.9	2.218	56.3	2.338	59.4	16.4	416	2894	4306	12696	5759	108/70.5	2.74/1.79	3850	1173	
CU140H23-020	2/0(19)	0.405	10.3	0.715	18.2	0.795	20.2	6	1.980	50.3	2.310	58.7	2.460	62.5	17.2	437	3321	4942	13345	6053	108/70.5	2.74/1.79	3550	1082	
CU140H23-030	3/0(19)	0.456	11.6	0.766	19.5	0.846	21.5	4	2.091	53.1	2.421	61.5	2.571	65.3	18.0	457	3900	5805	13061	5925	108/70.5	2.74/1.79	2950	899	
CU140H23-040	4/0(19)	0.512	13.0	0.822	20.9	0.902	22.9	4	2.212	56.2	2.542	64.6	2.692	68.4	18.8	479	4449	6621	14012	6356	108/70.5	2.74/1.79	2800	853	
CU140H23-250	250(37)	0.558	14.2	0.878	22.3	0.958	24.3	4	2.332	59.2	2.662	67.6	2.812	71.4	19.7	500	4781	7114	12551	5693	108/70.5	2.74/1.79	2300	701	
CU140H23-350	350(37)	0.661	16.8	0.981	24.9	1.061	26.9	3	2.555	64.9	2.885	73.3	3.035	77.1	21.2	540	6187	9207	14857	6739	108/70.5	2.74/1.79	2150	655	
CU140H23-500	500(37)	0.789	20.0	1.109	28.2	1.189	30.2	3	2.891	73.4	3.221	81.8	3.391	86.1	23.7	603	8156	12137	13789	6254	108/70.5	2.74/1.79	1500	457	
CU140H23-750	750(61)	0.968	24.6	1.298	33.0	1.378	35.0	2	3.300	83.8	3.630	92.2	3.800	96.5	26.6	676	11054	16450	13714	6221	108/70.5	2.74/1.79	1100	335	

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)

** Reel 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.



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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

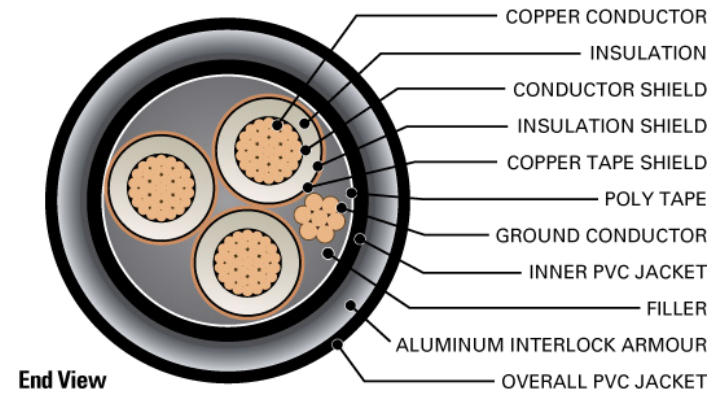


TABLE 2 - ENGINEERING SPECIFICATIONS

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 kAmps	Allowable Ampacities in Ventilated Cable Tray † Amps	Allowable Ampacities Directly Buried in Earth ‡ Amps
	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					
CU140H23-002	1593	7084	0.162	0.532	0.203	0.665	0.1027	0.3369	0.0664	0.2180	0.0387	0.1270	0.0399	0.0122	0.203 + j0.042	0.577 + j0.483	4.5	172	201
CU140H23-001	2009	8935	0.129	0.423	0.161	0.530	0.0987	0.3238	0.0729	0.2391	0.0372	0.1221	0.0364	0.0111	0.162 + j0.041	0.537 + j0.462	5.7	197	228
CU140H23-010	2534	11274	0.102	0.335	0.128	0.419	0.0953	0.3126	0.0794	0.2607	0.0359	0.1179	0.0334	0.0102	0.128 + j0.039	0.504 + j0.441	7.2	225	257
CU140H23-020	3194	14209	0.081	0.266	0.101	0.333	0.0922	0.3026	0.0865	0.2837	0.0348	0.1141	0.0307	0.0094	0.102 + j0.038	0.477 + j0.421	9.0	260	292
CU140H23-030	4027	17914	0.064	0.211	0.081	0.264	0.0892	0.2926	0.0948	0.3109	0.0336	0.1103	0.0280	0.0085	0.081 + j0.036	0.455 + j0.398	11.4	297	330
CU140H23-040	5078	22590	0.051	0.167	0.064	0.211	0.0864	0.2836	0.1038	0.3406	0.0326	0.1069	0.0256	0.0078	0.065 + j0.035	0.436 + j0.374	14.3	342	372
CU140H23-250	6000	26689	0.043	0.141	0.054	0.178	0.0852	0.2796	0.1084	0.3557	0.0321	0.1054	0.0245	0.0075	0.055 + j0.035	0.423 + j0.353	16.9	376	410
CU140H23-350	8400	37365	0.031	0.101	0.039	0.129	0.0816	0.2679	0.1245	0.4084	0.0308	0.1010	0.0213	0.0065	0.040 + j0.033	0.400 + j0.317	23.7	460	487
CU140H23-500	12000	53379	0.022	0.071	0.028	0.092	0.0783	0.2570	0.1444	0.4736	0.0295	0.0969	0.0184	0.0056	0.029 + j0.031	0.377 + j0.279	33.9	556	573
CU140H23-750	18000	80068	0.014	0.047	0.020	0.065	0.0755	0.2476	0.1675	0.5497	0.0284	0.0933	0.0158	0.0048	0.020 + j0.030	0.350 + j0.234	50.8	678	668

* Calculations are based on 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 D17N of the 2015 Canadian Electrical Code Part I (40°C Ambient Air Temperature, indoor installation)

‡ Ampacities are based on Table D17E of the 2015 Canadian Electrical Code Part I