HVTECK SPECIFICATIONS

HVTECK CU 3/C 140TRXLPE 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
- 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
- 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 TRXLPE 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	AWG	inches	mm	inches	mm	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
CU140J53-002	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	2169	3228	11641	5280	108/70.5	2.74/1.79	4650	1417
CU140J53-001	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	2536	3774	12967	5882	108/70.5	2.74/1.79	4500	1372
CU140J53-010	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	2830	4211	12449	5647	108/70.5	2.74/1.79	3850	1173
CU140J53-020	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	3252	4839	13099	5942	108/70.5	2.74/1.79	3550	1082
CU140J53-030	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	3825	5693	12839	5824	108/70.5	2.74/1.79	2950	899
CU140J53-040	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	4367	6499	13782	6252	108/70.5	2.74/1.79	2800	853
CU140J53-250	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	4692	6982	12347	5600	108/70.5	2.74/1.79	2300	701
CU140J53-350	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	6086	9056	14639	6640	108/70.5	2.74/1.79	2150	655
CU140J53-500	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	8039	11964	13614	6175	108/70.5	2.74/1.79	1500	457
CU140J53-750	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	10915	16243	13561	6151	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)

** 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.

SPS_J53_INDUSTRIAL-E(07/20/2016) Rev: 3.06R

HVTECK SPECIFICATIONS

HVTECK CU 3/C 140TRXLPE TS PVC AIA PVC 8KV 133% CSA

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

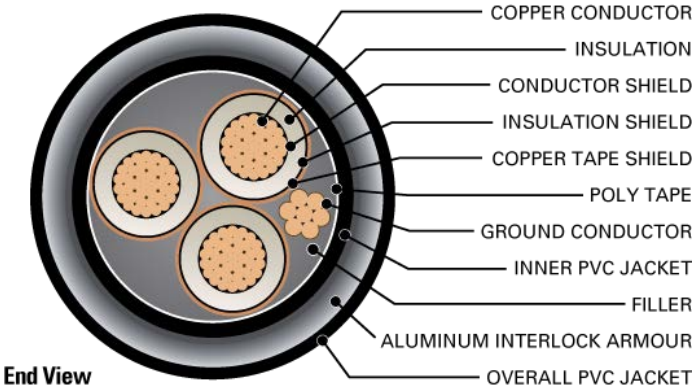
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000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



End View

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 Buries 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	Ω / 1000ft	Ω / 1000ft	kAmps	Amps	Amps
CU140J53-002	1593	7084	0.162	0.532	0.203	0.665	0.1027	0.3369	0.0527	0.1729	0.0387	0.1270	0.0503	0.0153	0.203 + j0.042	0.577 + j0.483	4.8	172	201
CU140J53-001	2009	8935	0.129	0.423	0.161	0.530	0.0987	0.3238	0.0578	0.1896	0.0372	0.1221	0.0459	0.0140	0.162 + j0.041	0.537 + j0.462	6.0	197	228
CU140J53-010	2534	11274	0.102	0.335	0.128	0.419	0.0953	0.3126	0.0630	0.2067	0.0359	0.1179	0.0421	0.0128	0.128 + j0.039	0.504 + j0.441	7.6	225	257
CU140J53-020	3194	14209	0.081	0.266	0.101	0.333	0.0922	0.3026	0.0686	0.2250	0.0348	0.1141	0.0387	0.0118	0.102 + j0.038	0.477 + j0.421	9.6	260	292
CU140J53-030	4027	17914	0.064	0.211	0.081	0.264	0.0892	0.2926	0.0751	0.2466	0.0336	0.1103	0.0353	0.0108	0.081 + j0.036	0.455 + j0.398	12.1	297	330
CU140J53-040	5078	22590	0.051	0.167	0.064	0.211	0.0864	0.2836	0.0823	0.2701	0.0326	0.1069	0.0322	0.0098	0.065 + j0.035	0.436 + j0.374	15.2	342	372
CU140J53-250	6000	26689	0.043	0.141	0.054	0.178	0.0852	0.2796	0.0860	0.2821	0.0321	0.1054	0.0308	0.0094	0.055 + j0.035	0.423 + j0.353	18.0	376	410
CU140J53-350	8400	37365	0.031	0.101	0.039	0.129	0.0816	0.2679	0.0987	0.3239	0.0308	0.1010	0.0269	0.0082	0.040 + j0.033	0.400 + j0.317	25.2	460	487
CU140J53-500	12000	53379	0.022	0.071	0.028	0.092	0.0783	0.2570	0.1145	0.3756	0.0295	0.0969	0.0232	0.0071	0.029 + j0.031	0.377 + j0.279	36.0	556	573
CU140J53-750	18000	80068	0.014	0.047	0.020	0.065	0.0755	0.2476	0.1329	0.4360	0.0284	0.0933	0.0200	0.0061	0.020 + j0.030	0.350 + j0.234	53.9	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

SPS_J53_INDUSTRIAL-E(07/20/2016) Rev: 3.06R