Southwire® CANADA

HVTECK SPECIFICATIONS

HVTECK AL 1/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 - compact stranded -8000 Series Aluminum -ACM

Options
- Class B compact stranded copper
- Class B compressed stranded copper
- Strand blocking technology
- Tinning on copper conductors

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
- Meets requirement of ICEA but built to CSA standards

Copper Tape Shield
- Helically wrapped 5 mil copper tape with 25% overlap
- Not designed to carry ground fault current
- A separate bonding/grounding conductor may be required

Inner Jacket
- Black PVC
- Thickness:
  No.2 AWG = 0.06 inches (1.52mm)
  No.1 AWG to 750 kcmil = 0.08 inches (2.03mm)

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 750 kcmil = 0.06 inches (1.52mm)

Typical Print Legend
- (CSA) SOUTHWIRE (NESC) #P# [#AWG or #kcmil] CPT AL 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		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	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
AL140Y36-002	2(7)	0.268	6.8	0.578	14.7	0.658	16.7	0.798	20.3	1.118	28.4	1.218	30.9	14.6	371	619	921	4463	2024	78/54	1.98/1.37	6000	1829
AL140Y36-001	1(19)	0.299	7.6	0.609	15.5	0.689	17.5	0.869	22.1	1.189	30.2	1.289	32.7	15.5	393	702	1045	4964	2252	78/54	1.98/1.37	6000	1829
AL140Y36-010	1/0(19)	0.336	8.5	0.646	16.4	0.726	18.4	0.906	23.0	1.226	31.1	1.326	33.7	15.9	404	753	1121	5269	2390	78/54	1.98/1.37	6000	1829
AL140Y36-020	2/0(19)	0.376	9.6	0.686	17.4	0.766	19.5	0.946	24.0	1.266	32.2	1.366	34.7	16.4	416	812	1208	6029	2735	96/54.5	2.44/1.38	6000	1829
AL140Y36-030	3/0(19)	0.423	10.7	0.733	18.6	0.813	20.7	0.993	25.2	1.313	33.4	1.413	35.9	17.0	431	882	1313	6454	2927	96/54.5	2.44/1.38	6000	1829
AL140Y36-040	4/0(19)	0.475	12.1	0.785	19.9	0.865	22.0	1.045	26.5	1.365	34.7	1.465	37.2	17.6	447	1003	1493	7178	3256	96/54.5	2.44/1.38	6000	1829
AL140Y36-250	250(37)	0.520	13.2	0.840	21.3	0.920	23.4	1.100	27.9	1.420	36.1	1.520	38.6	18.2	463	1090	1622	7698	3492	96/54.5	2.44/1.38	6000	1829
AL140Y36-350	350(37)	0.616	15.6	0.936	23.8	1.016	25.8	1.196	30.4	1.516	38.5	1.636	41.6	19.6	499	1296	1929	9119	4136	104/56.5	2.64/1.44	6000	1829
AL140Y36-500	500(37)	0.736	18.7	1.056	26.8	1.136	28.9	1.316	33.4	1.636	41.6	1.756	44.6	21.1	535	1542	2295	10593	4805	104/56.5	2.64/1.44	6000	1829
AL140Y36-750	750(61)	0.908	23.1	1.238	31.4	1.318	33.5	1.498	38.0	1.818	46.2	1.938	49.2	23.3	591	1944	2892	12827	5818	108/70.5	2.74/1.79	5800	1768

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.

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HVTECK SPECIFICATIONS

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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

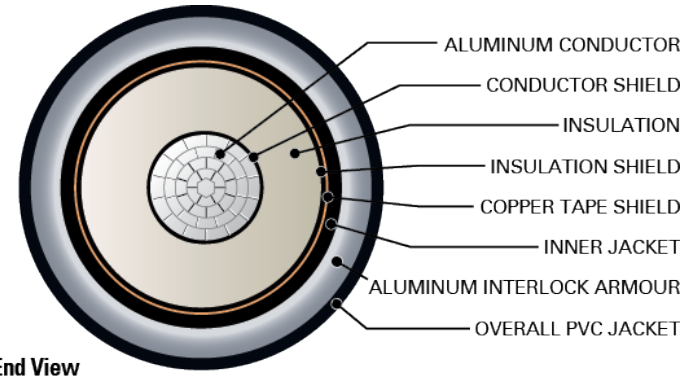
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000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



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
AL140Y36-002	398	1771	0.265	0.869	0.333	1.093	0.1044	0.3426	0.0639	0.2098	0.0394	0.1292	0.0415	0.0126	0.334 + j0.056	0.691 + j0.485	2.9	169	176
AL140Y36-001	502	2234	0.211	0.692	0.265	0.870	0.1009	0.3312	0.0691	0.2267	0.0381	0.1249	0.0384	0.0117	0.266 + j0.055	0.625 + j0.469	3.7	194	198
AL140Y36-010	634	2818	0.168	0.551	0.211	0.693	0.0974	0.3196	0.0752	0.2467	0.0367	0.1205	0.0353	0.0108	0.212 + j0.053	0.572 + j0.450	4.7	222	223
AL140Y36-020	799	3552	0.133	0.436	0.167	0.549	0.0942	0.3092	0.0817	0.2682	0.0355	0.1166	0.0325	0.0099	0.168 + j0.051	0.529 + j0.431	5.9	255	250
AL140Y36-030	1007	4478	0.105	0.345	0.132	0.433	0.0911	0.2989	0.0894	0.2933	0.0343	0.1127	0.0297	0.0090	0.133 + j0.049	0.494 + j0.410	7.4	290	278
AL140Y36-040	1270	5647	0.084	0.274	0.105	0.345	0.0882	0.2894	0.0978	0.3210	0.0332	0.1091	0.0271	0.0083	0.106 + j0.048	0.467 + j0.388	9.4	329	309
AL140Y36-250	1500	6672	0.071	0.232	0.089	0.292	0.0868	0.2848	0.1025	0.3362	0.0327	0.1074	0.0259	0.0079	0.090 + j0.046	0.449 + j0.366	11.1	370	347
AL140Y36-350	2100	9341	0.051	0.166	0.064	0.209	0.0831	0.2726	0.1175	0.3854	0.0313	0.1028	0.0226	0.0069	0.065 + j0.044	0.419 + j0.332	15.5	446	402
AL140Y36-500	3000	13345	0.035	0.116	0.045	0.147	0.0796	0.2611	0.1361	0.4467	0.0300	0.0984	0.0195	0.0059	0.046 + j0.042	0.391 + j0.295	22.2	533	451
AL140Y36-750	4500	20017	0.024	0.077	0.030	0.099	0.0765	0.2509	0.1585	0.5201	0.0288	0.0946	0.0167	0.0051	0.031 + j0.039	0.361 + j0.249	33.2	631	500

* 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

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SPS_Y36_INDUSTRIAL-E(06/23/2016) Rev: 3.05R