Southwire® CANADA

HVTECK SPECIFICATIONS

HVTECK AL 1/C 280TRXLPE TS PVC AIA PVC 28KV 100% CSA

PRODUCT HIGHLIGHTS

Southwire's 28KV 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
- TR-XLPE - (Tree Retardent Cross Linked Polyethylene)
- Thickness: 0.28 inches (7.11mm) - nominal
- Insulation level: 100% - grounded system
- 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.1 AWG to 500 kcmil = 0.08 inches (2.03mm)
  750 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.1 AWG = 0.05 inches (1.27mm)
  No.1/0 AWG to 750 kcmil = 0.06 inches (1.52mm)

Typical Print Legend
- (CSA) SOUTHWIRE (NESC) #P# [#AWG or #kcmil] CPT AL 280 TRXLPE AIA 28KV 100% 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
AL280Y66-001	1(19)	0.299	7.6	0.889	22.6	0.969	24.6	1.149	29.2	1.469	37.3	1.569	39.9	18.8	478	1017	1514	7263	3295	96/54.5	2.44/1.38	6000	1829
AL280Y66-010	1/0(19)	0.336	8.5	0.926	23.5	1.006	25.6	1.186	30.1	1.506	38.3	1.626	41.3	19.5	496	1105	1644	7969	3615	104/56.5	2.64/1.44	6000	1829
AL280Y66-020	2/0(19)	0.376	9.6	0.966	24.5	1.046	26.6	1.226	31.1	1.546	39.3	1.666	42.3	20.0	508	1171	1742	8366	3795	104/56.5	2.64/1.44	6000	1829
AL280Y66-030	3/0(19)	0.423	10.7	1.013	25.7	1.093	27.8	1.273	32.3	1.593	40.5	1.713	43.5	20.6	522	1250	1861	8843	4011	104/56.5	2.64/1.44	6000	1829
AL280Y66-040	4/0(19)	0.475	12.1	1.065	27.1	1.145	29.1	1.325	33.7	1.645	41.8	1.765	44.8	21.2	538	1344	2000	9617	4362	108/70.5	2.74/1.79	6000	1829
AL280Y66-250	250(37)	0.520	13.2	1.120	28.4	1.200	30.5	1.380	35.1	1.700	43.2	1.820	46.2	21.8	555	1439	2141	10189	4622	108/70.5	2.74/1.79	6000	1829
AL280Y66-350	350(37)	0.616	15.6	1.216	30.9	1.296	32.9	1.476	37.5	1.796	45.6	1.916	48.7	23.0	584	1630	2425	11334	5141	108/70.5	2.74/1.79	6000	1829
AL280Y66-500	500(37)	0.736	18.7	1.336	33.9	1.416	36.0	1.596	40.5	1.926	48.9	2.046	52.0	24.6	624	1964	2923	12062	5471	108/70.5	2.74/1.79	5350	1631
AL280Y66-750	750(61)	0.908	23.1	1.518	38.6	1.598	40.6	1.838	46.7	2.168	55.1	2.288	58.1	27.5	697	2522	3753	11265	5110	108/70.5	2.74/1.79	3850	1173

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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SPS_Y66_INDUSTRIAL-E(07/20/2016) Rev: 3.06R

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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

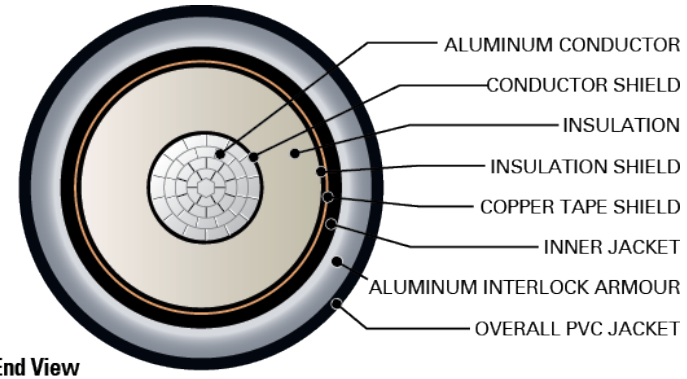
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 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
AL280Y66-001	502	2234	0.211	0.692	0.265	0.870	0.1240	0.4069	0.0358	0.1174	0.0467	0.1534	0.0742	0.0226	0.266 + j0.060	0.623 + j0.363	3.9	193	194
AL280Y66-010	634	2818	0.168	0.551	0.211	0.693	0.1194	0.3917	0.0384	0.1262	0.0450	0.1477	0.0690	0.0210	0.212 + j0.058	0.567 + j0.349	5.0	221	219
AL280Y66-020	799	3552	0.133	0.436	0.167	0.549	0.1151	0.3776	0.0413	0.1355	0.0434	0.1424	0.0642	0.0196	0.168 + j0.056	0.520 + j0.335	6.3	253	246
AL280Y66-030	1007	4478	0.105	0.345	0.132	0.433	0.1108	0.3636	0.0446	0.1464	0.0418	0.1371	0.0594	0.0181	0.133 + j0.054	0.482 + j0.319	7.9	288	275
AL280Y66-040	1270	5647	0.084	0.274	0.105	0.345	0.1068	0.3504	0.0483	0.1584	0.0403	0.1321	0.0549	0.0167	0.106 + j0.052	0.451 + j0.303	9.9	327	305
AL280Y66-250	1500	6672	0.071	0.232	0.089	0.292	0.1043	0.3424	0.0508	0.1667	0.0393	0.1291	0.0522	0.0159	0.090 + j0.050	0.430 + j0.287	11.8	367	343
AL280Y66-350	2100	9341	0.051	0.166	0.064	0.209	0.0990	0.3249	0.0573	0.1880	0.0373	0.1225	0.0463	0.0141	0.065 + j0.048	0.396 + j0.262	16.5	443	399
AL280Y66-500	3000	13345	0.035	0.116	0.045	0.147	0.0939	0.3081	0.0654	0.2145	0.0354	0.1162	0.0406	0.0124	0.046 + j0.045	0.366 + j0.235	23.5	529	451
AL280Y66-750	4500	20017	0.024	0.077	0.030	0.099	0.0889	0.2917	0.0758	0.2489	0.0335	0.1100	0.0350	0.0107	0.032 + j0.043	0.334 + j0.201	35.3	633	505

* 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_Y66_INDUSTRIAL-E(07/20/2016) Rev: 3.06R