Southwire® CANADA

HVTECK SPECIFICATIONS

HVTECK AL 1/C 220TRXLPE TS PVC AIA PVC 15KV 133% CSA

PRODUCT HIGHLIGHTS

Southwire's 15KV 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: 0.22 inches (5.59mm) - 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 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
- Red PVC (optional colours available)
- Nominal Thickness:
  No.2 AWG to No.3/0 AWG = 0.05 inches (1.27mm)
  No.4/0 AWG to 1000 kcmil = 0.06 inches (1.52mm)

Typical Print Legend
- (CSA) SOUTHWIRE (NESC) #P# [#AWG or #kcmil] CPT AL 220 TRXLPE AIA 15KV 133% INS LEVEL 25% TS SUN RES 105° FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

TABLE 1 - WEIGHTS & MEASUREMENTS

	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 **	
HVTECK Product Code	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
AL220L58-002	2(7)	0.268	6.8	0.738	18.7	0.818	20.8	0.998	25.3	1.318	33.5	1.418	36.0	17.0	432	802	1193	5970	2708	96/54.5	2.44/1.38	6000	1829
AL220L58-001	1(19)	0.299	7.6	0.769	19.5	0.849	21.6	1.029	26.1	1.349	34.3	1.449	36.8	17.4	442	882	1312	6449	2925	96/54.5	2.44/1.38	6000	1829
AL220L58-010	1/0(19)	0.336	8.5	0.806	20.5	0.886	22.5	1.066	27.1	1.386	35.2	1.486	37.7	17.8	453	936	1393	6774	3073	96/54.5	2.44/1.38	6000	1829
AL220L58-020	2/0(19)	0.376	9.6	0.846	21.5	0.926	23.5	1.106	28.1	1.426	36.2	1.526	38.8	18.3	465	998	1485	7148	3242	96/54.5	2.44/1.38	6000	1829
AL220L58-030	3/0(19)	0.423	10.7	0.893	22.7	0.973	24.7	1.153	29.3	1.473	37.4	1.573	40.0	18.9	479	1073	1597	7782	3530	104/56.5	2.64/1.44	6000	1829
AL220L58-040	4/0(19)	0.475	12.1	0.945	24.0	1.025	26.0	1.205	30.6	1.525	38.7	1.645	41.8	19.7	501	1192	1775	8497	3854	104/56.5	2.64/1.44	6000	1829
AL220L58-250	250(37)	0.520	13.2	1.000	25.4	1.080	27.4	1.260	32.0	1.580	40.1	1.700	43.2	20.4	518	1284	1910	9043	4102	104/56.5	2.64/1.44	6000	1829
AL220L58-350	350(37)	0.616	15.6	1.096	27.8	1.176	29.9	1.356	34.4	1.676	42.6	1.796	45.6	21.6	547	1467	2183	10358	4698	108/70.5	2.74/1.79	6000	1829
AL220L58-500	500(37)	0.736	18.7	1.216	30.9	1.296	32.9	1.476	37.5	1.796	45.6	1.916	48.7	23.0	584	1720	2560	11875	5386	108/70.5	2.74/1.79	6000	1829
AL220L58-750	750(61)	0.908	23.1	1.398	35.5	1.478	37.5	1.658	42.1	1.988	50.5	2.108	53.5	25.3	643	2207	3285	11820	5361	108/70.5	2.74/1.79	4650	1417
AL220L58-1000	1000(61)	1.060	26.9	1.550	39.4	1.630	41.4	1.870	47.5	2.200	55.9	2.320	58.9	27.8	707	2717	4043	12016	5450	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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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

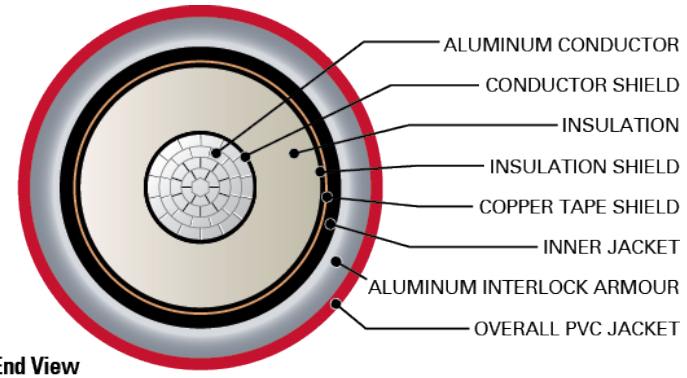
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 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
AL220L58-002	398	1771	0.265	0.869	0.333	1.093	0.1193	0.3915	0.0385	0.1263	0.0450	0.1476	0.0689	0.0210	0.334 + j0.060	0.695 + j0.418	3.1	169	176
AL220L58-001	502	2234	0.211	0.692	0.265	0.870	0.1152	0.3779	0.0413	0.1354	0.0434	0.1424	0.0643	0.0196	0.266 + j0.058	0.627 + j0.404	3.9	194	198
AL220L58-010	634	2818	0.168	0.551	0.211	0.693	0.1109	0.3639	0.0445	0.1462	0.0418	0.1372	0.0595	0.0181	0.212 + j0.056	0.572 + j0.388	5.0	222	223
AL220L58-020	799	3552	0.133	0.436	0.167	0.549	0.1070	0.3511	0.0481	0.1577	0.0403	0.1324	0.0552	0.0168	0.168 + j0.054	0.527 + j0.372	6.3	255	250
AL220L58-030	1007	4478	0.105	0.345	0.132	0.433	0.1031	0.3384	0.0522	0.1712	0.0389	0.1276	0.0509	0.0155	0.133 + j0.052	0.490 + j0.354	7.9	290	278
AL220L58-040	1270	5647	0.084	0.274	0.105	0.345	0.0995	0.3265	0.0567	0.1859	0.0375	0.1231	0.0468	0.0143	0.106 + j0.050	0.460 + j0.335	9.9	329	309
AL220L58-250	1500	6672	0.071	0.232	0.089	0.292	0.0974	0.3197	0.0596	0.1956	0.0367	0.1205	0.0445	0.0136	0.090 + j0.049	0.440 + j0.318	11.8	370	347
AL220L58-350	2100	9341	0.051	0.166	0.064	0.209	0.0927	0.3041	0.0676	0.2220	0.0349	0.1147	0.0392	0.0120	0.065 + j0.046	0.407 + j0.289	16.5	446	402
AL220L58-500	3000	13345	0.035	0.116	0.045	0.147	0.0882	0.2893	0.0776	0.2547	0.0332	0.1091	0.0342	0.0104	0.046 + j0.044	0.378 + j0.258	23.5	533	451
AL220L58-750	4500	20017	0.024	0.077	0.030	0.099	0.0839	0.2752	0.0903	0.2963	0.0316	0.1038	0.0294	0.0090	0.031 + j0.041	0.346 + j0.219	35.3	631	500
AL220L58-1000	6000	26689	0.018	0.058	0.023	0.075	0.0807	0.2649	0.1026	0.3366	0.0304	0.0999	0.0259	0.0079	0.024 + j0.040	0.324 + j0.193	47.0	707	539

* 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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