Southwire® CANADA

HVTECK SPECIFICATIONS

HVTECK AL 3/C 115EPR TS PVC AIA PVC 8KV 100% 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: 0.115 inches (2.92mm) - 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
- 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 to No.1 AWG = 0.08 inches (2.03mm)
  No.1/0 AWG to 500 kcmil = 0.11 inches (2.79mm)
  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.3/0 AWG = 0.06 inches (1.52mm)
  No.4/0 AWG to 500 kcmil = 0.075 inches (1.91mm)
  750 kcmil = 0.085 inches (2.16mm)

Typical Print Legend
- (CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CPT AL 115 EPR AIA 8KV 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		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
AL115K46-002	2(7)	0.268	6.8	0.528	13.4	0.608	15.4	8	1.516	38.5	1.846	46.9	1.966	49.9	13.8	350	1589	2364	9499	4309	108/70.5	2.74/1.79	5000	1524
AL115K46-001	1(19)	0.299	7.6	0.559	14.2	0.639	16.2	6	1.583	40.2	1.913	48.6	2.033	51.6	14.2	362	1735	2581	10228	4639	108/70.5	2.74/1.79	5000	1524
AL115K46-010	1/0(19)	0.336	8.5	0.596	15.1	0.676	17.2	6	1.723	43.8	2.053	52.2	2.173	55.2	15.2	386	1994	2968	10529	4776	108/70.5	2.74/1.79	4500	1372
AL115K46-020	2/0(19)	0.376	9.6	0.636	16.2	0.716	18.2	6	1.810	46.0	2.140	54.3	2.260	57.4	15.8	402	2164	3220	10966	4974	108/70.5	2.74/1.79	4350	1326
AL115K46-030	3/0(19)	0.423	10.7	0.683	17.3	0.763	19.4	6	1.911	48.5	2.241	56.9	2.361	60.0	16.5	420	2368	3525	10318	4680	108/70.5	2.74/1.79	3700	1128
AL115K46-040	4/0(19)	0.475	12.1	0.735	18.7	0.815	20.7	6	2.024	51.4	2.354	59.8	2.504	63.6	17.5	445	2763	4111	9981	4527	108/70.5	2.74/1.79	3050	930
AL115K46-250	250(37)	0.520	13.2	0.790	20.1	0.870	22.1	4	2.142	54.4	2.472	62.8	2.622	66.6	18.4	466	3064	4560	10594	4806	108/70.5	2.74/1.79	2950	899
AL115K46-350	350(37)	0.616	15.6	0.886	22.5	0.966	24.5	4	2.350	59.7	2.680	68.1	2.830	71.9	19.8	503	3581	5329	9791	4441	108/70.5	2.74/1.79	2300	701
AL115K46-500	500(37)	0.736	18.7	1.006	25.6	1.086	27.6	3	2.609	66.3	2.939	74.6	3.089	78.5	21.6	549	4331	6445	10433	4733	108/70.5	2.74/1.79	2050	625
AL115K46-750	750(61)	0.908	23.1	1.188	30.2	1.268	32.2	2	3.062	77.8	3.392	86.2	3.562	90.5	24.9	633	5810	8646	8527	3868	108/70.5	2.74/1.79	1200	366

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

HVTECK AL 3/C 115EPR TS PVC AIA PVC 8KV 100% 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

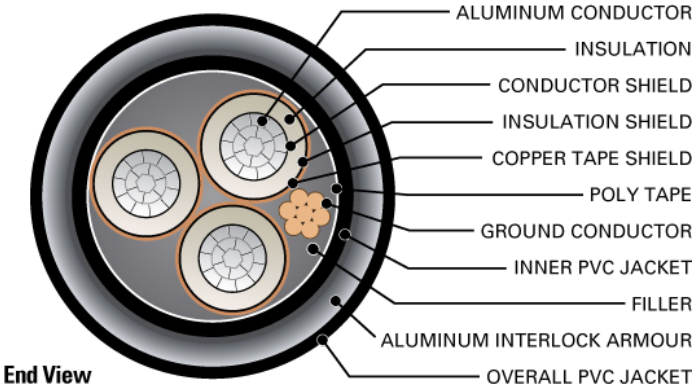
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 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
AL115K46-002	1194	5313	0.265	0.869	0.333	1.093	0.0989	0.3245	0.0725	0.2378	0.0373	0.1223	0.0366	0.0112	0.333 + j0.041	0.703 + j0.516	2.9	135	157
AL115K46-001	1506	6701	0.211	0.692	0.265	0.870	0.0957	0.3140	0.0785	0.2577	0.0361	0.1184	0.0338	0.0103	0.265 + j0.040	0.638 + j0.498	3.7	154	178
AL115K46-010	1901	8455	0.168	0.551	0.211	0.693	0.0925	0.3035	0.0858	0.2813	0.0349	0.1144	0.0309	0.0094	0.211 + j0.038	0.586 + j0.478	4.7	176	202
AL115K46-020	2396	10657	0.133	0.436	0.167	0.549	0.0896	0.2940	0.0935	0.3068	0.0338	0.1108	0.0284	0.0086	0.168 + j0.037	0.543 + j0.456	5.9	204	229
AL115K46-030	3020	13435	0.105	0.345	0.132	0.433	0.0868	0.2847	0.1026	0.3366	0.0327	0.1073	0.0259	0.0079	0.132 + j0.036	0.508 + j0.433	7.4	234	260
AL115K46-040	3809	16942	0.084	0.274	0.105	0.345	0.0842	0.2762	0.1126	0.3694	0.0317	0.1041	0.0236	0.0072	0.106 + j0.035	0.480 + j0.409	9.4	268	294
AL115K46-250	4500	20017	0.071	0.232	0.089	0.292	0.0831	0.2725	0.1175	0.3856	0.0313	0.1027	0.0226	0.0069	0.089 + j0.034	0.462 + j0.386	11.1	296	323
AL115K46-350	6300	28024	0.051	0.166	0.064	0.209	0.0797	0.2616	0.1352	0.4436	0.0301	0.0986	0.0196	0.0060	0.064 + j0.032	0.431 + j0.348	15.5	363	386
AL115K46-500	9000	40034	0.035	0.116	0.045	0.148	0.0766	0.2514	0.1573	0.5160	0.0289	0.0948	0.0169	0.0051	0.045 + j0.031	0.403 + j0.308	22.2	447	465
AL115K46-750	13500	60051	0.024	0.077	0.031	0.100	0.0740	0.2426	0.1828	0.5999	0.0279	0.0915	0.0145	0.0044	0.031 + j0.030	0.372 + j0.258	33.2	566	563

* 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

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