Southwire® CANADA

HVTECK SPECIFICATIONS

HVTECK CU 1/C 115EPR CB 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. When used in a 3 phase system, the combination of each bond conductor from each single conductor cable provide a 100% bonded system to ground.

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
- No-lead EPR (Ethylene Propylene Rubber)
- Thickness: 0.115 inches (2.92mm) - nominal
- Insulation level: 100%
- 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 Full Bond Wire Shield
- Concentrically applied copper bond / shield wires
- *** Complies with greater than the minimum requirement as per Table 44, CSA Standard C68.10 and Table 16A, Canadian Electrical Code Part 1

Inner Jacket
- Black PVC
- Thickness:
  No.2 AWG = 0.06 inches (1.52mm)
  No.1 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
- Black PVC (optional colours available)
- Nominal Thickness:
  No.2 AWG to 250 kcmil = 0.05 inches (1.27mm)
  350 kcmil to 1000 kcmil = 0.06 inches (1.52mm)

Typical Print Legend
- (CSA) SOUTHWIRE (NESC) #P# [#AWG or #kcmil] CU 115 EPR AIA 8KV 100% INS LEVEL CB [No. x SIZE] AWG 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		CB 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	No. X AWG	inches	mm	inches	mm	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
CU115B94-002	2(7)	0.283	7.2	0.543	13.8	0.623	15.8	11X16	0.794	20.2	1.114	28.3	1.214	30.8	14.6	370	743	1106	5209	2363	78/54	1.98/1.37	6000	1829
CU115B94-001	1(19)	0.322	8.2	0.582	14.8	0.662	16.8	17X16	0.873	22.2	1.193	30.3	1.293	32.8	15.5	394	895	1333	6123	2777	78/54	1.98/1.37	6000	1829
CU115B94-010	1/0(19)	0.362	9.2	0.622	15.8	0.702	17.8	17X16	0.913	23.2	1.233	31.3	1.333	33.9	16.0	406	991	1475	6696	3037	78/54	1.98/1.37	6000	1829
CU115B94-020	2/0(19)	0.405	10.3	0.665	16.9	0.745	18.9	17X16	0.956	24.3	1.276	32.4	1.376	34.9	16.5	419	1106	1646	7797	3537	96/54.5	2.44/1.38	6000	1829
CU115B94-030	3/0(19)	0.456	11.6	0.716	18.2	0.796	20.2	21X16	1.007	25.6	1.327	33.7	1.427	36.2	17.1	435	1305	1942	8988	4077	96/54.5	2.44/1.38	6000	1829
CU115B94-040	4/0(19)	0.512	13.0	0.772	19.6	0.852	21.6	21X16	1.063	27.0	1.383	35.1	1.483	37.7	17.8	452	1481	2204	10046	4557	96/54.5	2.44/1.38	6000	1829
CU115B94-250	250(37)	0.558	14.2	0.828	21.0	0.908	23.1	27X16	1.119	28.4	1.439	36.5	1.539	39.1	18.5	469	1615	2403	10848	4921	96/54.5	2.44/1.38	6000	1829
CU115B94-350	350(37)	0.661	16.8	0.931	23.6	1.011	25.7	21X14	1.235	31.4	1.555	39.5	1.675	42.5	20.1	511	2129	3168	14116	6403	104/56.5	2.64/1.44	6000	1829
CU115B94-500	500(37)	0.789	20.0	1.059	26.9	1.139	28.9	27X14	1.363	34.6	1.683	42.7	1.803	45.8	21.6	550	2737	4072	16469	7470	108/70.5	2.74/1.79	5450	1661
CU115B94-750	750(61)	0.968	24.6	1.248	31.7	1.328	33.7	33X14	1.552	39.4	1.882	47.8	2.002	50.9	24.0	610	3778	5622	16477	7474	108/70.5	2.74/1.79	3950	1204
CU115B94-1000	1000(61)	1.117	28.4	1.397	35.5	1.477	37.5	33X14	1.761	44.7	2.091	53.1	2.211	56.2	26.5	674	4791	7129	16406	7441	108/70.5	2.74/1.79	3100	945

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.

*** Concentric 1/3 Bond size values are available on request

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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

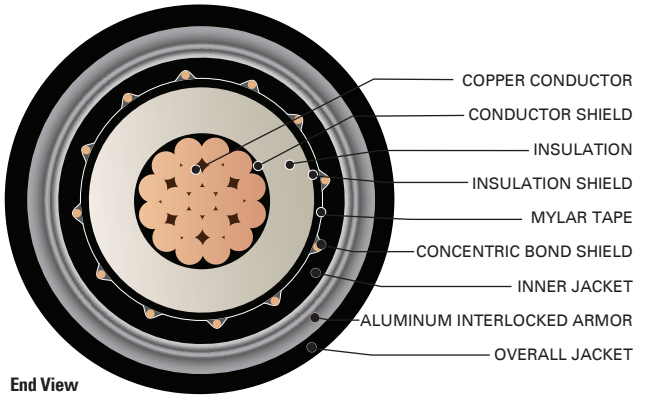
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 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
CU115B94-002	531	2361	0.162	0.532	0.203	0.665	0.0973	0.3192	0.0754	0.2474	0.0367	0.1204	0.0352	0.0107	0.205 + j0.055	0.501 + j0.189	4.5	215	221
CU115B94-001	670	2978	0.129	0.423	0.161	0.529	0.0937	0.3073	0.0830	0.2724	0.0353	0.1158	0.0319	0.0097	0.165 + j0.053	0.385 + j0.107	5.7	245	247
CU115B94-010	845	3758	0.102	0.335	0.128	0.419	0.0906	0.2972	0.0908	0.2979	0.0341	0.1120	0.0292	0.0089	0.131 + j0.051	0.351 + j0.106	7.2	278	275
CU115B94-020	1065	4736	0.081	0.266	0.101	0.333	0.0878	0.2881	0.0991	0.3252	0.0331	0.1086	0.0268	0.0082	0.105 + j0.049	0.325 + j0.105	9.0	317	306
CU115B94-030	1342	5971	0.064	0.211	0.080	0.264	0.0851	0.2791	0.1089	0.3574	0.0321	0.1052	0.0244	0.0074	0.084 + j0.047	0.270 + j0.079	11.4	357	335
CU115B94-040	1693	7530	0.051	0.167	0.064	0.210	0.0826	0.2710	0.1197	0.3927	0.0311	0.1022	0.0222	0.0068	0.068 + j0.046	0.253 + j0.078	14.3	404	369
CU115B94-250	2000	8896	0.043	0.141	0.054	0.178	0.0816	0.2678	0.1245	0.4086	0.0308	0.1010	0.0213	0.0065	0.059 + j0.044	0.207 + j0.056	16.9	456	412
CU115B94-350	2800	12455	0.031	0.101	0.039	0.128	0.0784	0.2574	0.1435	0.4708	0.0296	0.0970	0.0185	0.0056	0.044 + j0.042	0.164 + j0.045	23.7	537	456
CU115B94-500	4000	17793	0.022	0.071	0.028	0.091	0.0755	0.2477	0.1670	0.5479	0.0285	0.0934	0.0159	0.0048	0.034 + j0.039	0.127 + j0.034	33.9	616	497
CU115B94-750	6000	26689	0.014	0.047	0.019	0.063	0.0731	0.2397	0.1934	0.6347	0.0275	0.0904	0.0137	0.0042	0.026 + j0.036	0.101 + j0.028	50.8	706	551
CU115B94-1000	8000	35586	0.011	0.035	0.015	0.049	0.0712	0.2336	0.2197	0.7209	0.0268	0.0881	0.0121	0.0037	0.022 + j0.035	0.097 + j0.027	67.8	813	596

* 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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