

HVTECK CU 3/C 90NLEPR TS PVC AIA PVC 5kV 100% CSA

3 Conductor, 90 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

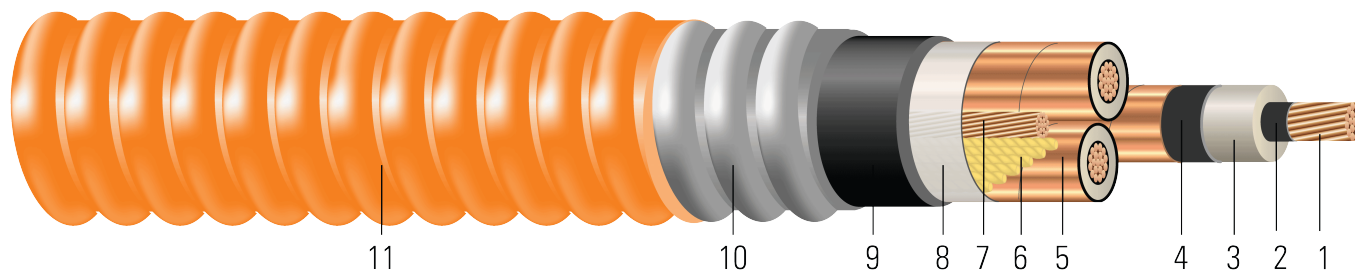


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8
2. **Conductor Shield:** Semi-conducting cross-linked copolymer
3. **Insulation:** 90 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% insulation level
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
6. **Filler:** Interstices filled with non-hydroscopic/non-wicking fillers
7. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
8. **Binder:** Polypropylene tape
9. **Inner Jacket:** PVC inner jacket
10. **Armour:** Aluminum Interlocked Armour (AIA)
11. **Overall Jacket:** Orange Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 5kV HVTECK is a CSA armoured cable for industrial and commercial medium voltage applications. Rated FT4, -40°C, Hazardous Locations (HL). These cables are capable of operating continuously at the conductor temperature not in excess of 105°C for normal operation, 140°C for emergency overload, and 250°C for short circuit conditions. Rated for 1000 lbs /FT maximum sidewall pressure. These cables feature sunlight and moisture resistance, exceptional corona resistance, resistance to most chemical soils and acids and are flame retardant.

SPECIFICATIONS:

- ASTM B3 Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- CSA C22.2 No. 174 Cables in Hazardous Locations
- CSA C22.2 No. 2556 & No. 0.3 Wire and Cable Test Methods
- 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 LTGG [-40°C] - as per C68.10 - for Cold Bend and Impact rating
- CSA HL - for Hazardous Locations rating
- CSA SUN RES - for Sunlight Resistant rating
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable
- ICEA T-29-520 Flame Test (210,000 BTU/Hr)



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Southwire

**CABLETECH
SUPPORT™**

Services

- IEEE 383 Flame Test (70,000 btu)
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test
- FT1 Flame Test (1,706 BTU/Hr nominal - Vertical Wire Flame Test)
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV (Qualification Test Requirements)

SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CU 90 NLEPR AIA 5kv 100% INS LEVEL 25% TS SUN RES 105°C FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
	AWG/ Kcmil	No.	inch	inch	mil	inch	AWG	mil	inch	mil	inch	lb/1000ft
568787	2	7	0.282	0.501	90	0.561	6	80	1.753	60	1.873	1923
TBA	1	19	0.322	0.540	90	0.600	6	80	1.855	60	1.975	2160
570970	1/0	19	0.361	0.572	90	0.632	4	80	1.918	60	2.038	2558
576703	2/0	19	0.405	0.624	90	0.684	4	110	2.091	60	2.211	3050
TBA	3/0	19	0.456	0.674	90	0.734	4	110	2.204	60	2.324	3392
576701	4/0	19	0.512	0.716	90	0.776	3	110	2.289	75	2.439	4121
568918	250	37	0.558	0.768	90	0.828	2	110	2.402	75	2.552	4663
570971	350	37	0.661	0.867	90	0.927	2	110	2.616	75	2.766	5856
568919	500	37	0.789	0.992	90	1.052	1	110	2.886	75	3.036	7653
TBA	750	61	0.968	1.204	90	1.264	2	125	3.379	85	3.549	10565
TBA	1000	61	1.117	1.353	90	1.413	1	125	3.701	85	3.871	13357

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

1 Comply with ICEA S-93-639 Appendix C for jacket thickness determination

^ Yellow outer jacket



Table 2 – Electrical and Engineering Data

Cond. Size	Min Bending Radius	Max Pull Tension	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Zero Sequence Impedance*	Positive Sequence Impedance*	Phase Short Circuit Current @ 60Hz	Allowable Ampacity In Air 90°C	Allowable Ampacity Directly Buried 90°C
AWG/Kcmil	inch	lb	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
2	13.1	1592	0.162	0.204	0.029	0.038	0.567 + j0.548	0.204 + j0.039	1734	172	201
1	13.8	2008	0.128	0.162	0.026	0.037	0.529 + j0.523	0.162 + j0.037	1858	197	228
1/0	14.2	2534	0.102	0.128	0.024	0.035	0.499 + j0.5	0.128 + j0.036	1979	225	257
2/0	15.4	3194	0.081	0.102	0.022	0.034	0.475 + j0.476	0.102 + j0.035	2116	260	292
3/0	16.2	4027	0.064	0.081	0.020	0.033	0.456 + j0.45	0.081 + j0.034	2274	297	330
4/0	17.0	5078	0.051	0.065	0.018	0.032	0.44 + j0.423	0.065 + j0.032	2447	342	372
250	17.8	6000	0.043	0.056	0.017	0.032	0.43 + j0.399	0.056 + j0.032	2614	376	410
350	19.3	8400	0.031	0.041	0.015	0.030	0.41 + j0.358	0.041 + j0.031	2934	460	487
500	21.2	12000	0.022	0.030	0.013	0.029	0.39 + j0.314	0.03 + j0.029	3330	556	573
750	24.8	18000	0.014	0.023	0.011	0.028	0.366 + j0.261	0.023 + j0.028	3916	678	668
1000	27.0	24000	0.011	0.019	0.010	0.027	0.347 + j0.227	0.02 + j0.027	4377	798	772

* Inductive impedance is based on non-ferrous conduit with one diameter spacing.

Table 3 – Weights and Measurements (Metric)

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground Size	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
	AWG/Kcmil	No.	mm	mm	mm	mm	AWG	mm	mm	mm	mm	kg/km
568787	2	7	7.16	12.73	2.29	14.25	6	2.03	44.53	1.52	47.57	2862
TBA	1	19	8.18	13.72	2.29	15.24	6	2.03	47.12	1.52	50.17	3214
570970	1/0	19	9.17	14.53	2.29	16.05	4	2.03	48.72	1.52	51.77	3807
576703	2/0	19	10.29	15.85	2.29	17.37	4	2.79	53.11	1.52	56.16	4539
TBA	3/0	19	11.58	17.12	2.29	18.64	4	2.79	55.98	1.52	59.03	5048
576701	4/0	19	13.00	18.19	2.29	19.71	3	2.79	58.14	1.91	61.95	6133
568918	250	37	14.17	19.51	2.29	21.03	2	2.79	61.01	1.91	64.82	6939
570971	350	37	16.79	22.02	2.29	23.55	2	2.79	66.45	1.91	70.26	8715
568919	500	37	20.04	25.20	2.29	26.72	1	2.79	73.30	1.91	77.11	11389
TBA	750	61	24.59	30.58	2.29	32.11	2	3.18	85.83	2.16	90.14	15722
TBA	1000	61	28.37	34.37	2.29	35.89	1	3.18	94.01	2.16	98.32	19877

All dimensions are nominal and subject to normal manufacturing tolerances

◇ Cable marked with this symbol is a standard stock item

1 Comply with ICEA S-93-639 Appendix C for jacket thickness determination

^ Yellow outer jacket



Table 4 – Electrical and Engineering Data (Metric)

Cond. Size	Min Bending Radius	Max Pull Tension	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Zero Sequence Impedance*	Positive Sequence Impedance*	Phase Short Circuit Current @ 60Hz	Allowable Ampacity In Air 90°C	Allowable Ampacity Directly Buried 90°C
AWG/Kcmil	mm	newton	Ω/km	Ω/km	MΩ*km	Ω/km	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
2	332.74	7084	0.5315	0.67	0.0088	0.1247	0.567 + j0.548	0.204 + j0.039	1734	172	201
1	350.52	8936	0.4199	0.53	0.0079	0.1214	0.529 + j0.523	0.162 + j0.037	1858	197	228
1/0	360.68	11276	0.3346	0.42	0.0073	0.1148	0.499 + j0.5	0.128 + j0.036	1979	225	257
2/0	391.16	14213	0.2657	0.33	0.0067	0.1115	0.475 + j0.476	0.102 + j0.035	2116	260	292
3/0	411.48	17920	0.2100	0.27	0.0061	0.1083	0.456 + j0.45	0.081 + j0.034	2274	297	330
4/0	431.80	22597	0.1673	0.21	0.0055	0.1050	0.44 + j0.423	0.065 + j0.032	2447	342	372
250	452.12	26700	0.1411	0.18	0.0052	0.1050	0.43 + j0.399	0.056 + j0.032	2614	376	410
350	490.22	37380	0.1017	0.13	0.0046	0.0984	0.41 + j0.358	0.041 + j0.031	2934	460	487
500	538.48	53400	0.0722	0.10	0.0040	0.0951	0.39 + j0.314	0.03 + j0.029	3330	556	573
750	629.92	80100	0.0459	0.08	0.0034	0.0919	0.366 + j0.261	0.023 + j0.028	3916	678	668
1000	685.80	106800	0.0361	0.06	0.0030	0.0886	0.347 + j0.227	0.02 + j0.027	4377	798	772

* Inductive impedance is based on non-ferrous conduit with one diameter spacing.

