

HVTECK CU 1/C 320NLEPR TS PVC AIA PVC 25kV 133% CSA

Single Conductor, 320 Mils No Lead Ethylene Propylene Rubber (NL-EPR), 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Inner Jacket, Aluminum Interlocked Armour (AIA), Polyvinyl Chloride (PVC) Jacket

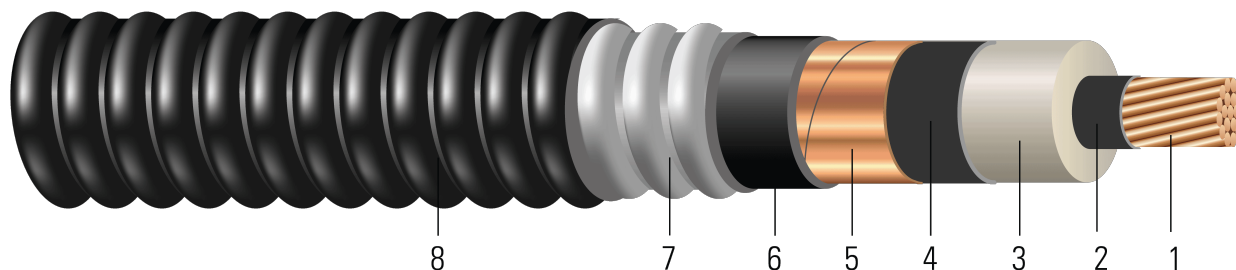


Image not to scale. See Table 1 for dimensions.

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:** 320 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% 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. **Inner Jacket:** PVC inner jacket
7. **Armour:** Aluminum Interlocked Armour (AIA)
8. **Overall Jacket:** Black Polyvinyl Chloride (PVC) Jacket

APPLICATIONS AND FEATURES:

Southwire's 25kV 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)
- IEEE 383 Flame Test (70,000 btu)
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test (1/0 and Larger)
- 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 (Meets Qualification Test Requirements)

SAMPLE PRINT LEGEND:

(CSA) SOUTHWIRE (NESC) #P# 1/C [#AWG or #kcmil] CU 320 NLEPR AIA 25kV 133% 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	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
	AWG/ Kcmil	No.	inch	inch	mil	inch	mil	inch	mil	inch	lb/1000ft
TBA	1	19	0.322	1.000	320	1.060	80	1.572	60	1.692	1339
TBA	1/0	19	0.361	1.039	320	1.099	80	1.611	60	1.731	1450
TBA	2/0	19	0.405	1.083	320	1.143	80	1.679	60	1.799	1618
TBA	3/0	19	0.456	1.134	320	1.194	80	1.730	60	1.850	1785
668365!	4/0	19	0.512	1.176	320	1.236	80	1.760	60	1.880	2013
TBA	4/0	19	0.512	1.190	320	1.250	80	1.786	60	1.906	1983
TBA	250	37	0.558	1.244	320	1.304	80	1.840	60	1.960	2166
TBA	350	37	0.661	1.347	320	1.407	80	1.943	60	2.063	2691
TBA	500	37	0.789	1.475	320	1.535	110	2.131	60	2.251	3431
TBA	750	61	0.968	1.664	320	1.724	110	2.320	75	2.470	4523
TBA	1000	61	1.117	1.813	320	1.873	110	2.469	75	2.619	5489

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

! Unilay stranded



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
1	11.8	669	0.128	0.162	0.059	0.060	0.514 + j0.339	0.163 + j0.06	3284	245	244
1/0	12.1	844	0.102	0.128	0.055	0.058	0.478 + j0.325	0.129 + j0.058	3405	278	272
2/0	12.5	1064	0.081	0.102	0.051	0.056	0.448 + j0.311	0.103 + j0.056	3541	316	303
3/0	12.9	1342	0.064	0.081	0.047	0.054	0.423 + j0.296	0.082 + j0.054	3699	356	333
4/0	13.1	1692	0.051	0.065	0.044	0.052	0.402 + j0.28	0.066 + j0.052	3872	403	367
4/0	13.3	1692	0.051	0.065	0.044	0.052	0.402 + j0.28	0.066 + j0.052	3872	403	367
250	13.7	2000	0.043	0.056	0.041	0.051	0.389 + j0.266	0.057 + j0.051	4040	455	411
350	14.4	2800	0.031	0.041	0.037	0.048	0.364 + j0.242	0.042 + j0.048	4359	537	459
500	15.7	4000	0.022	0.030	0.032	0.046	0.341 + j0.216	0.031 + j0.046	4755	616	499
750	17.2	6000	0.014	0.023	0.028	0.043	0.316 + j0.185	0.024 + j0.043	5341	716	557
1000	18.3	8000	0.011	0.019	0.025	0.041	0.299 + j0.165	0.02 + j0.041	5803	825	608

* 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	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Approx. Weight
	AWG/Kcmil	No.	mm	mm	mm	mm	mm	mm	mm	mm	kg/km
TBA	1	19	8.18	25.40	8.13	26.92	2.03	39.93	1.52	42.98	1993
TBA	1/0	19	9.17	26.39	8.13	27.91	2.03	40.92	1.52	43.97	2158
TBA	2/0	19	10.29	27.51	8.13	29.03	2.03	42.65	1.52	45.69	2408
TBA	3/0	19	11.58	28.80	8.13	30.33	2.03	43.94	1.52	46.99	2656
668365!	4/0	19	13.00	29.87	8.13	31.39	2.03	44.70	1.52	47.75	2996
TBA	4/0	19	13.00	30.23	8.13	31.75	2.03	45.36	1.52	48.41	2951
TBA	250	37	14.17	31.60	8.13	33.12	2.03	46.74	1.52	49.78	3223
TBA	350	37	16.79	34.21	8.13	35.74	2.03	49.35	1.52	52.40	4005
TBA	500	37	20.04	37.47	8.13	38.99	2.79	54.13	1.52	57.18	5106
TBA	750	61	24.59	42.27	8.13	43.79	2.79	58.93	1.91	62.74	6731
TBA	1000	61	28.37	46.05	8.13	47.57	2.79	62.71	1.91	66.52	8169

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

! Unilay stranded



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
1	299.72	2977	0.4199	0.53	0.0180	0.1969	0.514 + j0.339	0.163 + j0.06	3284	245	244
1/0	307.34	3756	0.3346	0.42	0.0168	0.1903	0.478 + j0.325	0.129 + j0.058	3405	278	272
2/0	317.50	4735	0.2657	0.33	0.0155	0.1837	0.448 + j0.311	0.103 + j0.056	3541	316	303
3/0	327.66	5972	0.2100	0.27	0.0143	0.1772	0.423 + j0.296	0.082 + j0.054	3699	356	333
4/0	332.74	7529	0.1673	0.21	0.0134	0.1706	0.402 + j0.28	0.066 + j0.052	3872	403	367
4/0	337.82	7529	0.1673	0.21	0.0134	0.1706	0.402 + j0.28	0.066 + j0.052	3872	403	367
250	347.98	8900	0.1411	0.18	0.0125	0.1673	0.389 + j0.266	0.057 + j0.051	4040	455	411
350	365.76	12460	0.1017	0.13	0.0113	0.1575	0.364 + j0.242	0.042 + j0.048	4359	537	459
500	398.78	17800	0.0722	0.10	0.0098	0.1509	0.341 + j0.216	0.031 + j0.046	4755	616	499
750	436.88	26700	0.0459	0.08	0.0085	0.1411	0.316 + j0.185	0.024 + j0.043	5341	716	557
1000	464.82	35600	0.0361	0.06	0.0076	0.1345	0.299 + j0.165	0.02 + j0.041	5803	825	608

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

