HVTECK CU 3/C 320NLEPR TS PVC AIA PVC 25kV 133% CSA

3 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

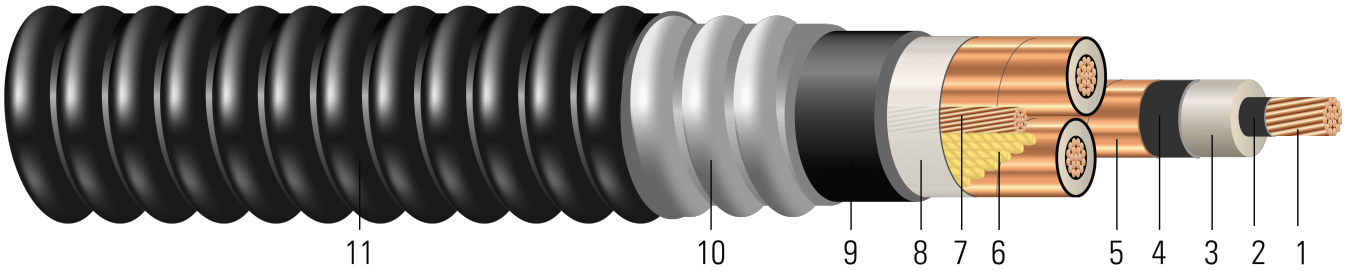

Image not to scale. See Table 1 for dimensions.

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. **Filler:** Interstices filled with non-hydroscoping/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:** 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)

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- 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 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	Ground	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
	AWG/ Kcmil	No.	inch	inch	mil	inch	No. x AWG	mil	inch	mil	inch	lb/ 1000ft	lb/ 1000ft	inch
581881^	1	19	0.322	1	320	1.06	1x4	110	2.903	75	3.053	1189	4140	4
675390	1/0	19	0.362	1.04	320	1.1	1x6	110	2.928	75	3.078	1355	4364	4
TBA	2/0	19	0.405	1.083	320	1.143	1x6	110	3.025	85	3.195	1612	4253	4
TBA	3/0	19	0.456	1.134	320	1.194	1x4	125	3.165	85	3.335	1997	4793	4.5
678708^^	4/0	19	0.512	1.19	320	1.25	1x4	125	3.364	85	3.534	2430	6025	4.5
TBA	250	37	0.558	1.244	320	1.304	1x4	125	3.403	85	3.573	2794	5920	4.5
TBA	350	37	0.661	1.347	320	1.407	1x3	125	3.625	85	3.795	3790	7213	5
TBA	500	37	0.789	1.475	320	1.535	1x3	125	3.902	85	4.072	5225	9019	5.5

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
^ Red outer jacket
^^ Yellow outer jacket
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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 @ 6 Cycles	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	21.4	2008	0.128	0.175	0.053	0.033	0.541+j0.380	0.175+j0.050	3315	202	226
1/0	21.5	2534	0.102	0.139	0.05	0.032	0.503+j0.365	0.139+j0.048	3439	231	256
2/0	22.4	3194	0.082	0.112	0.047	0.03	0.473+j0.351	0.112+j0.046	3572	265	290
3/0	23.3	4027	0.064	0.087	0.043	0.028	0.445+j0.335	0.087+j0.044	3730	303	327
4/0	24.7	5078	0.051	0.07	0.04	0.026	0.424+j0.318	0.070+j0.043	3904	348	369
250	25	6000	0.043	0.059	0.038	0.025	0.409+j0.303	0.059+j0.042	4071	384	408
350	26.6	8400	0.031	0.043	0.034	0.023	0.385+j0.278	0.043+j0.039	4390	468	485
500	28.5	12000	0.021	0.03	0.03	0.021	0.361+j0.250	0.030+j0.037	4787	565	571

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* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
***** CEC ampacities are based on:
3/C in air copper and aluminum: D17N
3/C direct buried copper and aluminum: D17E

Table 3 – Weights and Measurements (Metric)

Stock Number	Cond. Size	Strand	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Ground	Inner Jacket Thickness	Dia. Over Armour	Overall Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Conduit Size*
	AWG/ Kcmil	No.	mm	mm	mm	mm	No. x AWG	mm	mm	mm	mm	kg/km	kg/km	inch
581881^	1	19	8.18	25.40	8.13	26.92	1x4	2.79	73.74	1.91	77.55	1769	6161	4
675390	1/0	19	9.19	26.42	8.13	27.94	1x6	2.79	74.37	1.91	78.18	2016	6494	4
TBA	2/0	19	10.29	27.51	8.13	29.03	1x6	2.79	76.84	2.16	81.15	2399	6329	4
TBA	3/0	19	11.58	28.80	8.13	30.33	1x4	3.18	80.39	2.16	84.71	2972	7133	4.5
678708^^	4/0	19	13.00	30.23	8.13	31.75	1x4	3.18	85.45	2.16	89.76	3616	8966	4.5
TBA	250	37	14.17	31.60	8.13	33.12	1x4	3.18	86.44	2.16	90.75	4158	8810	4.5
TBA	350	37	16.79	34.21	8.13	35.74	1x3	3.18	92.07	2.16	96.39	5640	10734	5
TBA	500	37	20.04	37.47	8.13	38.99	1x3	3.18	99.11	2.16	103.43	7776	13422	5.5

All dimensions are nominal and subject to normal manufacturing tolerances
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^ Red outer jacket
^^ Yellow outer jacket
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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 @ 6 Cycles	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	543.56	8936	0.4199	0.57	0.0162	0.1083	0.541+j0.380	0.175+j0.050	3315	202	226
1/0	546.10	11276	0.3346	0.46	0.0152	0.1050	0.503+j0.365	0.139+j0.048	3439	231	256
2/0	568.96	14213	0.2690	0.37	0.0143	0.0984	0.473+j0.351	0.112+j0.046	3572	265	290
3/0	591.82	17920	0.2100	0.29	0.0131	0.0919	0.445+j0.335	0.087+j0.044	3730	303	327
4/0	627.38	22597	0.1673	0.23	0.0122	0.0853	0.424+j0.318	0.070+j0.043	3904	348	369
250	635.00	26700	0.1411	0.19	0.0116	0.0820	0.409+j0.303	0.059+j0.042	4071	384	408
350	675.64	37380	0.1017	0.14	0.0104	0.0755	0.385+j0.278	0.043+j0.039	4390	468	485
500	723.90	53400	0.0689	0.10	0.0091	0.0689	0.361+j0.250	0.030+j0.037	4787	565	571

* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
***** CEC ampacities are based on:
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3/C direct buried copper and aluminum: D17E

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