HVTECK CU 3/C 280NLEPR TS PVC AIA PVC 28kV 100% CSA

3 Conductor, 280 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

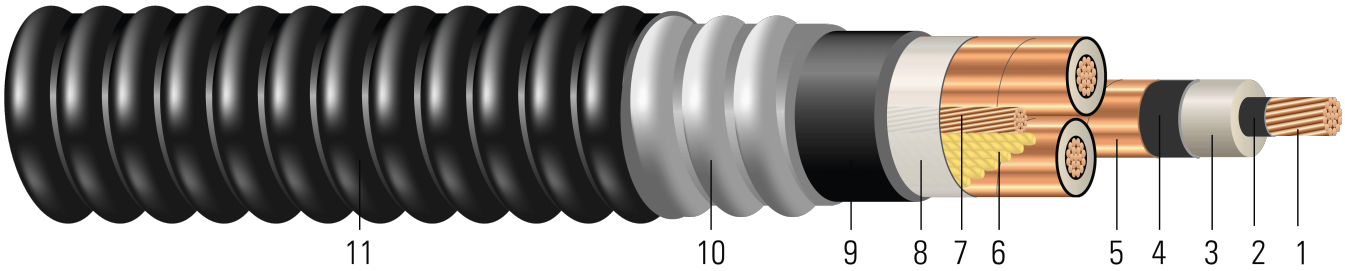


Image not to scale. See Table 1 for dimensions.

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:** 280 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-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 28kV 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 280 NLEPR AIA 28kV 100% INS LEVEL 25% TS SUN RES 105°C FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

Table 1 – Weights and Measurements

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
1	19	0.322	0.92	280	0.98	1x6	110	2.673	75	2.823	1108	3164	3.5
1/0	19	0.362	0.96	280	1.02	1x6	110	2.759	75	2.909	1324	3484	3.5
2/0	19	0.405	1.003	280	1.063	1x6	110	2.852	75	3.002	1592	3863	4
3/0	19	0.456	1.054	280	1.114	1x4	110	2.962	75	3.112	1977	4381	4
4/0	19	0.512	1.11	280	1.17	1x4	125	3.113	85	3.283	2400	5016	4.5
250	37	0.558	1.164	280	1.224	1x4	125	3.23	85	3.4	2774	5546	4.5
350	37	0.661	1.267	280	1.327	1x3	125	3.452	85	3.622	3770	6815	4.5
500	37	0.789	1.395	280	1.455	1x3	125	3.729	85	3.899	5205	8591	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
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	19.8	2008	0.128	0.175	0.049	0.032	0.544+j0.405	0.175+j0.048	3067	202	226
1/0	20.4	2534	0.102	0.139	0.046	0.03	0.507+j0.389	0.139+j0.046	3191	231	256
2/0	21	3194	0.082	0.112	0.043	0.028	0.478+j0.373	0.112+j0.045	3325	265	290
3/0	21.8	4027	0.064	0.087	0.04	0.027	0.450+j0.356	0.087+j0.043	3483	303	327
4/0	23	5078	0.051	0.07	0.037	0.025	0.430+j0.338	0.070+j0.041	3656	348	369
250	23.8	6000	0.043	0.059	0.034	0.024	0.415+j0.322	0.059+j0.040	3823	384	408
350	25.4	8400	0.031	0.043	0.03	0.022	0.391+j0.294	0.043+j0.038	4143	468	485
500	27.3	12000	0.021	0.03	0.027	0.02	0.368+j0.264	0.030+j0.036	4539	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 in air copper and aluminum: D17N
3/C direct buried copper and aluminum: D17E

Table 3 – Weights and Measurements (Metric)

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
1	19	8.18	23.37	7.11	24.89	1x6	2.79	67.89	1.91	71.70	1649	4709	3.5
1/0	19	9.19	24.38	7.11	25.91	1x6	2.79	70.08	1.91	73.89	1970	5185	3.5
2/0	19	10.29	25.48	7.11	27.00	1x6	2.79	72.44	1.91	76.25	2369	5749	4
3/0	19	11.58	26.77	7.11	28.30	1x4	2.79	75.23	1.91	79.04	2942	6520	4
4/0	19	13.00	28.19	7.11	29.72	1x4	3.18	79.07	2.16	83.39	3572	7465	4.5
250	37	14.17	29.57	7.11	31.09	1x4	3.18	82.04	2.16	86.36	4128	8253	4.5
350	37	16.79	32.18	7.11	33.71	1x3	3.18	87.68	2.16	92.00	5610	10142	4.5
500	37	20.04	35.43	7.11	36.96	1x3	3.18	94.72	2.16	99.03	7746	12785	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
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	502.92	8936	0.4199	0.57	0.0149	0.1050	0.544+j0.405	0.175+j0.048	3067	202	226
1/0	518.16	11276	0.3346	0.46	0.0140	0.0984	0.507+j0.389	0.139+j0.046	3191	231	256
2/0	533.40	14213	0.2690	0.37	0.0131	0.0919	0.478+j0.373	0.112+j0.045	3325	265	290
3/0	553.72	17920	0.2100	0.29	0.0122	0.0886	0.450+j0.356	0.087+j0.043	3483	303	327
4/0	584.20	22597	0.1673	0.23	0.0113	0.0820	0.430+j0.338	0.070+j0.041	3656	348	369
250	604.52	26700	0.1411	0.19	0.0104	0.0787	0.415+j0.322	0.059+j0.040	3823	384	408
350	645.16	37380	0.1017	0.14	0.0091	0.0722	0.391+j0.294	0.043+j0.038	4143	468	485
500	693.42	53400	0.0689	0.10	0.0082	0.0656	0.368+j0.264	0.030+j0.036	4539	565	571

* 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

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