HVTECK SPECIFICATIONS

HVTECK CU 1/C 140EPR TS LSZH AIA LSZH SOLONON® 8KV 133% CSA

PRODUCT HIGHLIGHTS
Southwire's 8KV HVTECK Solonon® low smoke zero halogen jacketed cable is a CSA armoured cable for industrial and commercial medium voltage applications. Rated FT4-ST1, -25°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 encasable.

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
- Strand blocking technology
- Tinning on copper conductors

Conductor Shield
- Extruded semi-conducting thermosetting polymeric layer

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 Tape Shield
- Helically wrapped 5 mil copper tape with 25% overlap
- Not designed to carry ground fault current
- A separate bonding/grounding conductor may be required

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 - Low Smoke Zero Halogen XLPE Solonon® jacket
- Nominal Thickness:
  - No.2 AWG to 250 kcmil = 0.06 inches (1.52mm)
  - 350 kcmil to 1000 kcmil = 0.06 inches (1.52mm)

Typical Print Legend
- (CSA) SOUTHWIRE [I N S E C] #400 [AWG or kcmil] CU 140 EPR AIA 8KV 133% INS LEVEL 25% TS SUN RES 105° FT4-ST1 LSZH SOLONON HL (-25°C) LTDD RoHS YEAR [SEQUENTIAL METER MARKS]

TABLE 1 - WEIGHTS & MEASUREMENTS

| HVTECK Product Code | AWG or Kcmil | Conductor Diameter | Diameter Over Insulation | Diameter Over Shield | Diameter Over Inner Jacket | Diameter Armour | Approx. Overall Diameter | Approx. Overall Shield Diameter | Approx. Overall Inner Diameter | Approx. Overall Armour Diameter | Approx. Overall Bend Radius | Approx. Weight of Cable | Max. Real Weight (reel and cable) | Max. Diameter / Width | Max. Diameter / Width | Max. Length of Cable on Reel | Max. Length of Cable on Reel ** |
|---------------------|--------------|--------------------|-------------------------|---------------------|---------------------------|----------------|-------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|---------------------------------|-----------------|-----------------|--------------------------|--------------------------|
| CU140K04-002        | 2/7          | 0.293              | 7.2                     | 0.593               | 15.1                      | 0.673          | 17.1                   | 0.813                          | 20.7                          | 1.158                          | 28.8                         | 1.233                       | 31.3                        | 14.8                          | 37.6                         | 789                        | 1174                       | 5463                        | 2487                      |
| CU140K04-001        | 1/19         | 0.322              | 8.2                     | 0.632               | 16.1                      | 0.712          | 18.1                   | 0.892                          | 22.7                          | 1.212                          | 30.8                         | 1.312                       | 33.3                        | 15.7                          | 400                         | 920                        | 1370                       | 6272                        | 2845                      |
| CU140K04-010        | 1/10(19)     | 0.362              | 9.2                     | 0.672               | 17.1                      | 0.752          | 19.1                   | 0.932                          | 23.7                          | 1.26                           | 31.8                         | 1.352                       | 34.3                        | 16.2                          | 412                         | 1021                       | 1520                       | 7286                        | 3305                      |
| CU140K04-020        | 2/19         | 0.405              | 10.3                    | 0.715               | 18.2                      | 0.795          | 20.2                   | 0.975                          | 24.8                          | 1.295                          | 32.9                         | 1.395                       | 35.4                        | 16.7                          | 425                         | 1142                       | 1700                       | 8013                        | 3635                      |
| CU140K04-030        | 3/19(19)     | 0.456              | 11.6                    | 0.766               | 19.5                      | 0.846          | 21.5                   | 1.026                          | 26.1                          | 1.346                          | 34.2                         | 1.446                       | 36.7                        | 17.4                          | 441                         | 1329                       | 1977                       | 9130                        | 4141                      |
| CU140K04-040        | 4/19(19)     | 0.512              | 13.0                    | 0.822               | 20.9                      | 0.902          | 22.9                   | 1.062                          | 27.5                          | 1.402                          | 35.6                         | 1.502                       | 38.2                        | 18.0                          | 458                         | 1512                       | 2251                       | 10233                       | 4642                      |
| CU140K04-050        | 5/19(19)     | 0.561              | 14.8                    | 0.878               | 22.3                      | 0.958          | 24.3                   | 1.138                          | 28.9                          | 1.458                          | 37.0                         | 1.558                       | 39.6                        | 18.7                          | 475                         | 1624                       | 2417                       | 10904                       | 4946                      |
| CU140K04-060        | 6/19(19)     | 0.611              | 16.8                    | 0.981               | 24.9                      | 1.061          | 28.9                   | 1.241                          | 31.5                          | 1.561                          | 39.8                         | 1.681                       | 42.7                        | 20.2                          | 512                         | 2117                       | 3151                       | 14046                       | 6371                      |
| CU140K04-070        | 7/19(19)     | 0.661              | 18.6                    | 1.081               | 30.2                      | 1.189          | 32.0                   | 1.369                          | 34.8                          | 1.689                          | 42.9                         | 1.809                       | 45.9                        | 21.7                          | 551                         | 2695                       | 4011                       | 16541                       | 7493                      |
| CU140K04-080        | 8/19(19)     | 0.711              | 20.4                    | 1.199               | 33.9                      | 1.288          | 35.0                   | 1.558                          | 39.6                          | 1.888                          | 48.0                         | 2.008                       | 51.0                        | 24.1                          | 612                         | 3715                       | 5529                       | 16417                       | 7446                      |
| CU140K04-090        | 9/19(19)     | 0.761              | 22.2                    | 1.309               | 37.0                      | 1.397          | 38.8                   | 1.767                          | 44.9                          | 2.097                          | 53.3                         | 2.217                       | 56.3                        | 26.6                          | 676                         | 4757                       | 7079                       | 16540                       | 7502                      |

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.

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**DESIGN**

**Quality 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)
- FT1, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- CSA T-29-520 - Vertical Cable Tray Flame Test - (210,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 BTU/Hr.)
- CSA ST1 Smoke Test - marked FT4-ST1
- CSA SUN RES - for Sunlight Resistant rating
- CSA LTDD [−25°C] - as per C68.10 - for Cold Bend and Impact rating

**Operating Temperatures**
- −25°C - CSA Cold Bend and Impact Temperature
- −10°C - Min. Installation Temperature
- 105°C - Max. Continuous Operating Temperature
- 140°C for Emergency Overload Temperature
- 250°C for Short Circuit Temperature

**Product Ratings**
- CSA C22.2 No. 2568 & No. 0.3 - Wire and Cable Test Methods
- CSA LTD2 - (25°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

**TABLE 2 - ENGINEERING SPECIFICATIONS**

<table>
<thead>
<tr>
<th>HVTECK Product Code</th>
<th>Maximum Pulling Tension</th>
<th>DC Resistance @ 25°C</th>
<th>AC Resistance @ 60°C</th>
<th>Inductance L</th>
<th>Capacitance C</th>
<th>Inductive Reactance @ 60Hz (triplexed)</th>
<th>Capacitive Reactance @ 60Hz (triplexed)</th>
<th>Positive-Sequence Impedance*</th>
<th>Zero-Sequence Impedance*</th>
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</table>

* 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

1 Ampacities are based on Table D17M of the 2015 Canadian Electrical Code Part I (40°C Ambient Air Temperature, indoor installation)

2 Ampacities are based on Table D17A of the 2015 Canadian Electrical Code Part I