

# Duplex 600 Volt USE-2 HI-SCORE Underground Service Entrance

Aluminum Conductor. HI-SCORE Cross-linked Polyethylene (XLP) Insulation.

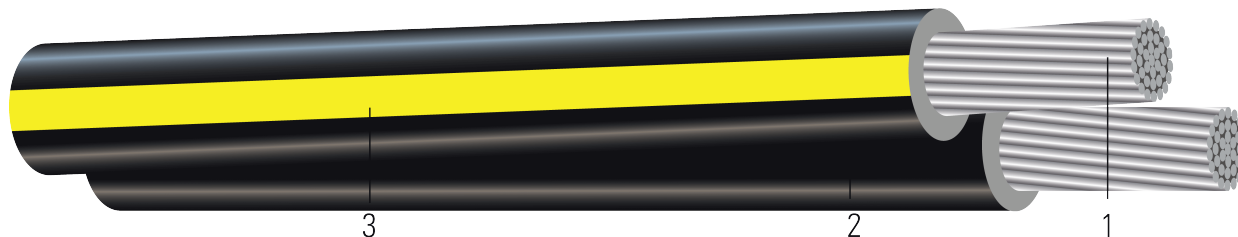


Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

1. **Conductor:** Conductors are stranded, compressed 1350-H16/H26 (3/4 Hard) aluminum
2. **Insulation:** Rugged Cross Linked Polyethylene (XLPE) meeting the requirements of ANSI/ICEA S-81-570. LLDPE and HDPE or MDPE
3. **Neutral:** Cross Linked Polyethylene (XLPE) with three Yellow Extruded Stripes (YES)

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## APPLICATIONS AND FEATURES:

Conductors are stranded, compressed 1350-H16/H26 (3/4 Hard) aluminum, insulated with cross-linked polyethylene. Especially suited for applications requiring superior resistance to mechanical damage. Neutrals are identified by three yellow extruded stripes. Cables with "YES" neutrals have sequential footage markers. Conductors are durably surface printed for identification. One-phase conductor and one neutral conductor are cabled together to produce the duplex cable configuration. These cables are capable of operating continuously at the conductor temperature not in excess of 90°C for normal operation in wet and dry locations, 130°C for emergency overload, and 250°C for short circuit conditions. UL listed as USE-2 per UL 854 Service-Entrance Cables.

## SPECIFICATIONS:

- ASTM B231 Standard Specification for Concentric-Lay-Stranded Aluminum 1350 Conductors
- ASTM B609 Standard Specification for Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes
- ASTM B901 Standard Specification for Compressed Round Stranded Aluminum Conductors Using Single Input Wire Construction. (The number of strands for both phase and neutral may differ)
- UL 854 Service Entrance Cable
- ICEA S-81-570 Standard for 600 Volt Rated Cables of Ruggedized Design for Direct Burial Installations as Single Conductors or Assemblies of Single Conductors
- ICEA S-105-692 Standard For 600 Volt Single Layer Thermoset Insulated Utility Underground Distribution Cables



**Table 1 – Weights and Measurements**

| Stock Number | Code Word | Phase Cond. Size | Phase Strand | Dia. Over Phase Conductor | Phase Insul. Thickness | Dia. Over Phase Insulation | Neutral Cond. Size | Neutral Strand | Neutral Insul. Thickness | Dia. Over Neutral Insulation | Approx. OD | Approx. Weight |
|--------------|-----------|------------------|--------------|---------------------------|------------------------|----------------------------|--------------------|----------------|--------------------------|------------------------------|------------|----------------|
|              |           | AWG/Kcmil        | No.          | inch                      | mil                    | inch                       | AWG/Kcmil          | No.            | mil                      | inch                         | inch       | lb/1000ft      |
| TBA          | Bard      | 8                | 7            | 0.141                     | 60                     | 0.262                      | 8                  | 7              | 60                       | 0.262                        | 0.524      | 64             |
| 309187       | Claflin   | 6                | 7            | 0.177                     | 60                     | 0.298                      | 6                  | 7              | 60                       | 0.298                        | 0.596      | 89             |
| TBA          | Delgado   | 4                | 7            | 0.225                     | 60                     | 0.345                      | 4                  | 7              | 60                       | 0.345                        | 0.690      | 127            |

All dimensions are nominal and subject to normal manufacturing tolerances

1. The actual number of strands may differ for single input wire per ASTM B901

**Table 2 – Electrical and Engineering Data**

| Code Word | Phase Cond. Size | Min Bending Radius | Max Pull Tension | DC Resistance @ 25°C | AC Resistance @ 75°C | Inductive Reactance @ 60Hz | GMR   | Allowable Ampacity in Duct 90°C | Allowable Ampacity Directly Buried 90°C |
|-----------|------------------|--------------------|------------------|----------------------|----------------------|----------------------------|-------|---------------------------------|-----------------------------------------|
|           | AWG/Kcmil        | inch               | lb               | Ω/1000ft             | Ω/1000ft             | Ω/1000ft                   | ft    | Amp                             | Amp                                     |
| Bard      | 8                | 2.1                | 198              | 1.071                | 1.290                | 0.052                      | 0.007 | 55                              | 70                                      |
| Claflin   | 6                | 2.4                | 314              | 0.674                | 0.812                | 0.051                      | 0.005 | 70                              | 95                                      |
| Delgado   | 4                | 2.8                | 500              | 0.424                | 0.511                | 0.048                      | 0.004 | 90                              | 125                                     |

Notes:

1. Inductive reactance assumes cables are cradled in conduit, and the neutral is carrying no current.
2. Triple parallel inductive reactance calculation assumes the phase conductors are adjacent to one another.
3. Conductors assumed to be reverse lay stranded, compressed construction.
4. Phase spacing assumes cables are touching.
5. Resistances shown are for the Phase conductors only.
6. Ampacity based on 90°C conductor temperature, 20°C ambient, RHO 90, 100% load factor.

