

# Quadruplex 600 Volt USE-2 Underground Service Entrance

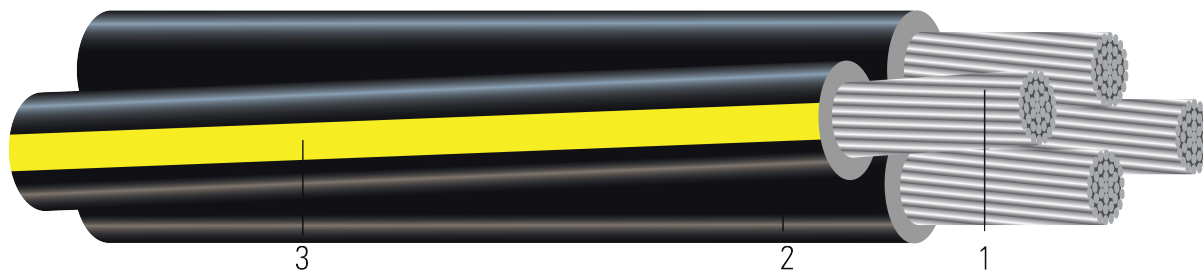


Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

1. **Conductor:** Conductors are stranded, compressed 1350-H16/H26 (3/4 Hard) aluminum
2. **Insulation:** Cross Linked Polyethylene (XLPE)
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. Neutrals are identified by three yellow extruded stripes. Cables with "YES" neutrals have sequential footage markers. Conductors are durably surface printed for identification. Three-phase conductors and one neutral conductor are cabled together to produce the quadruplex 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-105-692 Standard For 600 Volt Single Layer Thermoset Insulated Utility Underground Distribution Cables

## SAMPLE PRINT LEGEND:

SOUTHWIRE E32071 {UL} AWG XX AL TYPE USE-2 XX MILS XLP INSULATION 600 VOLTS {MMM/DD/YYYY} {SEQUENTIAL FOOTAGE MARKS} SEQ FEET.



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      |
| 274332       | Tulsa         | 4                | 7            | 0.225                     | 60                     | 0.345                      | 4                  | 7              | 60                       | 0.345                        | 0.833      | 255            |
| 274340       | Dyke          | 2                | 7            | 0.282                     | 60                     | 0.403                      | 4                  | 7              | 60                       | 0.345                        | 0.973      | 342            |
| 274357       | Wittenberg    | 2                | 7            | 0.282                     | 60                     | 0.403                      | 2                  | 7              | 60                       | 0.403                        | 0.973      | 378            |
| 274365       | Notre Dame    | 1/0              | 9            | 0.361                     | 80                     | 0.512                      | 2                  | 7              | 60                       | 0.403                        | 1.236      | 534            |
| 274373       | Purdue        | 1/0              | 9            | 0.361                     | 80                     | 0.512                      | 1/0                | 9              | 80                       | 0.512                        | 1.236      | 589            |
| 274381       | Syracuse      | 2/0              | 11           | 0.405                     | 80                     | 0.555                      | 1                  | 9              | 80                       | 0.473                        | 1.340      | 657            |
| 274399       | Lafayette     | 2/0              | 11           | 0.405                     | 80                     | 0.555                      | 2/0                | 11             | 80                       | 0.555                        | 1.340      | 713            |
| 274407       | Swarthmore    | 3/0              | 17           | 0.456                     | 80                     | 0.603                      | 1/0                | 9              | 80                       | 0.512                        | 1.456      | 798            |
| 274415       | Davidson      | 3/0              | 17           | 0.456                     | 80                     | 0.603                      | 3/0                | 17             | 80                       | 0.603                        | 1.456      | 868            |
| 274423       | Wake Forest   | 4/0              | 18           | 0.512                     | 80                     | 0.555                      | 2/0                | 11             | 80                       | 0.555                        | 1.588      | 972            |
| 274431       | Earlham       | 4/0              | 18           | 0.512                     | 80                     | 0.658                      | 4/0                | 18             | 80                       | 0.658                        | 1.588      | 1062           |
| 340844       | Niagara       | 350              | 30           | 0.661                     | 95                     | 0.831                      | 350                | 30             | 80                       | 0.831                        | 2.006      | 1705           |
| 274902       | Slippery Rock | 350              | 30           | 0.661                     | 95                     | 0.658                      | 4/0                | 18             | 80                       | 0.658                        | 2.006      | 1531           |
| 303727       | Wofford       | 500              | 34           | 0.789                     | 95                     | 0.956                      | 350                | 37             | 95                       | 0.831                        | 2.308      | 2177           |
| TBA          | Westminster   | 750              | 61           | 0.968                     | 110                    | 1.159                      | 350                | 30             | 95                       | 0.831                        | 2.802      | 3691           |

All dimensions are nominal and subject to normal manufacturing tolerances

Notes:

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/<br>Kcmil    | inch               | lb               | Ω/1000ft             | Ω/1000ft             | Ω/1000ft                   | ft    | Amp                             | Amp                                     |
| Tulsa         | 4                | 3.3                | 801              | 0.424                | 0.511                | 0.048                      | 0.007 | 85                              | 120                                     |
| Dyke          | 2                | 3.9                | 1274             | 0.266                | 0.320                | 0.045                      | 0.009 | 115                             | 155                                     |
| Wittenberg    | 2                | 3.9                | 1274             | 0.266                | 0.320                | 0.045                      | 0.009 | 115                             | 155                                     |
| Notre Dame    | 1/0              | 6.2                | 2027             | 0.167                | 0.201                | 0.044                      | 0.011 | 150                             | 200                                     |
| Purdue        | 1/0              | 6.2                | 2027             | 0.167                | 0.201                | 0.044                      | 0.011 | 150                             | 200                                     |
| Syracuse      | 2/0              | 6.7                | 2555             | 0.133                | 0.159                | 0.043                      | 0.012 | 170                             | 225                                     |
| Lafayette     | 2/0              | 6.7                | 2555             | 0.133                | 0.159                | 0.043                      | 0.012 | 170                             | 225                                     |
| Swarthmore    | 3/0              | 7.3                | 3221             | 0.105                | 0.126                | 0.042                      | 0.014 | 195                             | 250                                     |
| Davidson      | 3/0              | 7.3                | 3221             | 0.105                | 0.126                | 0.042                      | 0.014 | 195                             | 250                                     |
| Wake Forest   | 4/0              | 7.9                | 4062             | 0.084                | 0.100                | 0.041                      | 0.016 | 225                             | 290                                     |
| Earlham       | 4/0              | 7.9                | 4062             | 0.084                | 0.100                | 0.041                      | 0.016 | 225                             | 290                                     |
| Niagara       | 350              | 12.0               | 6720             | 0.050                | 0.062                | 0.040                      | 0.020 | 305                             | 385                                     |
| Slippery Rock | 350              | 12.0               | 6720             | 0.050                | 0.062                | 0.040                      | 0.020 | 305                             | 385                                     |
| Wofford       | 500              | 13.8               | 9600             | 0.035                | 0.044                | 0.039                      | 0.025 | 370                             | 465                                     |
| Westminster   | 750              | 16.8               | 14400            | 0.024                | 0.031                | 0.038                      | 0.031 | 470                             | 580                                     |

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.

