

## 3/C CU 35kV 345 NLEPR 100% ARMOR-X PVC MV-105

Type MV-105 Three Conductor Copper, 345 Mills No Lead Ethylene Propylene Rubber (NL-EPR) 100% Insulation Level, Tape Shield, Continuous Corrugated Welded Armor (Armor-X), Polyvinyl Chloride (PVC) Jacket

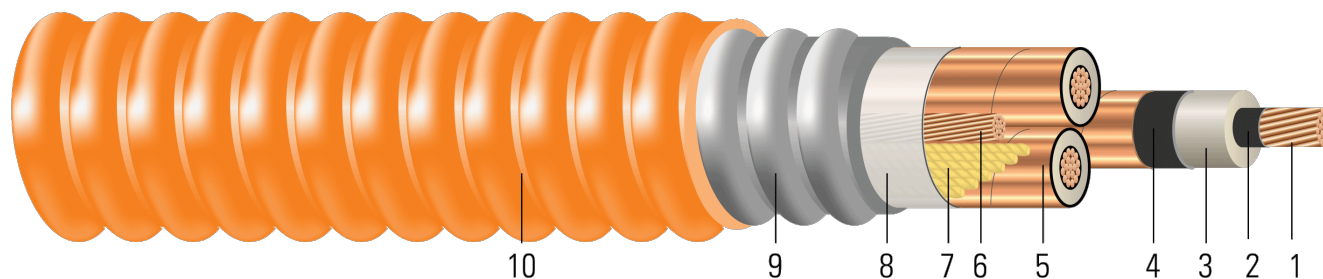


Image not to scale. See Table 1 for dimensions.

### 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:** 345 Mills 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. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
7. **Filler:** Wax paper filler
8. **Binder:** Polypropylene tape
9. **Armor:** Continuous Corrugated Welded Armor (Armor-X)
10. **Overall Jacket:** Polyvinyl Chloride (PVC)

### APPLICATIONS AND FEATURES:

Southwire's 35KV ARMOR-X are armored cables for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial, and where superior electrical properties are desired. 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, 250°C for short circuit conditions, and -50°C for cold bend. For uses in Class I, II, and III, Division 1 and 2 hazardous locations per NEC Article 501, 502, and 503.

### SPECIFICATIONS:

- ASTM B3 Standard Specification for Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- UL 1072 Medium-Voltage Power Cables
- UL 1685 FT4 Vertical-Tray Fire Propagation and Smoke Release Test
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV

### SAMPLE PRINT LEGEND:

{SQFTG\_DUAL} SOUTHWIRE{R} MASTER-DESIGN ARMOR-X {UL} MV-105 OR MC-HL 3/C SHIELDED XXX AWG CU 345 MILS NL-EPR 25%TS GW 1 X X AWG CU 90{D}C JKT DIR. BUR. FOR CT USE FT4 -40{D}C SUN. RES. 35KV 100% -- ABS CWCMC USA {NESC}



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**Table 1 – Weights and Measurements**

| Stock Number | Cond. Size    | Diameter Over Conductor | Diameter Over Insulation | Diameter Over Insulation Shield | Ground       | Jacket Thickness <sup>1</sup> | Approx. OD | Approx. Weight | Max Pull Tension | Min Bending Radius |
|--------------|---------------|-------------------------|--------------------------|---------------------------------|--------------|-------------------------------|------------|----------------|------------------|--------------------|
|              | AWG/<br>Kcmil | inch                    | inch                     | inch                            | No. x<br>AWG | mil                           | inch       | lb/1000ft      | lb               | inch               |
| 582011       | 1/0           | 0.362                   | 1.089                    | 1.149                           | 1 x 4        | 75                            | 3.150      | 4422           | 2534             | 22.1               |
| TBA          | 2/0           | 0.405                   | 1.132                    | 1.192                           | 1 x 4        | 85                            | 3.390      | 4994           | 3194             | 23.7               |
| TBA          | 3/0           | 0.456                   | 1.183                    | 1.243                           | 1 x 3        | 85                            | 3.390      | 5502           | 4027             | 23.7               |
| TBA          | 4/0           | 0.512                   | 1.239                    | 1.299                           | 1 x 3        | 85                            | 3.710      | 6213           | 5078             | 26.0               |
| TBA          | 250           | 0.558                   | 1.294                    | 1.354                           | 1 x 3        | 85                            | 3.710      | 6733           | 6000             | 26.0               |
| TBA          | 350           | 0.661                   | 1.397                    | 1.457                           | 1 x 2        | 85                            | 4.020      | 8156           | 8400             | 28.1               |

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

**Table 2 – Electrical and Engineering Data**

| Cond. Size    | DC Resistance @ 25°C | AC Resistance @ 90°C | Capacitive Reactance @ 60Hz | Inductive Reactance @ 60Hz | Zero Sequence Impedance* | Positive Sequence Impedance* | Shield Short Circuit Current 6 Cycles | Allowable Ampacity Directly Buried 90/105°C <sup>†</sup> | Allowable Ampacity In Air 90/105°C <sup>‡</sup> |
|---------------|----------------------|----------------------|-----------------------------|----------------------------|--------------------------|------------------------------|---------------------------------------|--|---|
| AWG/<br>Kcmil | Ω/1000ft             | Ω/1000ft             | MΩ*1000ft                   | Ω/1000ft                   | Ω/1000ft                 | Ω/1000ft                     | Amp                                   | Amp  | Amp   |
| 1/0           | 0.102                | 0.128                | 0.059                       | 0.049                      | 0.480 + j0.307           | 0.128 + j0.049               | 3771                                  | 240/255  | 215/240   |
| 2/0           | 0.081                | 0.101                | 0.055                       | 0.047                      | 0.450 + j0.294           | 0.102 + j0.047               | 3910                                  | 270/290  | 245/275   |
| 3/0           | 0.064                | 0.080                | 0.051                       | 0.045                      | 0.424 + j0.279           | 0.081 + j0.045               | 4076                                  | 305/330  | 285/315   |
| 4/0           | 0.051                | 0.064                | 0.048                       | 0.043                      | 0.402 + j0.265           | 0.065 + j0.043               | 4259                                  | 350/375  | 325/360   |
| 250           | 0.043                | 0.054                | 0.045                       | 0.042                      | 0.387 + j0.251           | 0.055 + j0.042               | 4438                                  | 380/410  | 360/400   |
| 350           | 0.031                | 0.039                | 0.040                       | 0.040                      | 0.361 + j0.229           | 0.040 + j0.040               | 4773                                  | 460/495  | 435/490   |

\* Calculations are based on 5 mil 25 % over lapping copper tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter

† Ampacities are based on TABLE 310.60(C)(83) of the 2014 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)

‡ Ampacities are based on TABLE 310.60(C)(71) of the 2014 National Electrical Code (40°C Ambient Air Temperature)

