

# TYPE MC - COPPER CONDUCTOR - ISOLATED GROUND - ALUMINUM ARMOR - 600V

THHN/THWN-2 INNERS

## ENGINEERING SPECIFICATIONS

### Standards

Underwriters Laboratories Standards UL-83, UL-1569, UL-1581, UL-2556 for type MC; Federal Specification A-A59544; NEMA RV 1-2014, NEMA WC70/CEA S-95-658; IEEE 1202 (70,000 Btu/hr) Vertical Cable Tray Flame Test; NFPA 70 (NEC®) Article 330; ARRA 2009 Section 1605 "Buy American" Compliant; RoHS Compliant; MasterSpec Division 26 Sections 260519, 260523; UL Listing #E-301130



**SMARTCOLORID**

## APPLICATIONS

Type MC cable shall be permitted as follows:

- Permitted use for branch circuits in industrial, commercial, and multi-residential buildings;
- Acceptable for power, lighting, control, and signal circuits;
- Allowable in concealed or exposed systems;
- Permitted use in dry locations and embedded in plaster finish on brick or other masonry except in damp or wet locations;
- Utilized for environmental air-handling spaces (NEC 300.22(C)(1));
- Allowable in assembly occupancies (NEC 518.4);
- Permissible in theaters, audience areas of motion pictures, television studios, and similar locations (NEC 520.5);
- Allowable installations in approved raceways and cable trays (NEC 392);
- Suitable for installation under raised floors for IT equipment (NEC 645.5(E));
- Permitted in Class I Div. 2, Class II Div. 2, and Class III Div. 1 Hazardous Locations;
- Listed for use with UL 1479 - 1, 2, and 3 Hour Through-Penetration Firestop Systems.

## CONSTRUCTION

Available in sizes 12 AWG and 10 AWG with two (2) insulated ground conductors. Encore's Metal-Clad Cable is constructed with soft-drawn copper, Type THHN/THWN-2 conductors rated 90°C dry locations. The two grounding conductors are distinguished by color code: one (1) solid green, and one (1) solid green with yellow stripe. All conductors are cabled together with a separator tape containing the identification print legend to form the cable core. Interlocked aluminum armor is applied over the entire assembly.



- 1 Removable SmartColorID<sup>1</sup> Label
- 2 Interlocked Aluminum Armor
- 3 Separator Tape
- 4 Isolated Ground featuring SmartStripe<sup>®</sup>
- 5 Ground Conductor
- 6 THHN/THWN-2 Solid or Stranded Copper Conductor

| Circuit Conductors |          | Ground Conductors (AWG/No.) | Overall Diameter (in) | Approximate Net Weight (lbs/1000 ft) | Allowable Ampacity (Amps) <sup>2</sup> |      | Standard Packaging (ft) |       |
|--------------------|----------|-----------------------------|-----------------------|--------------------------------------|--|------|-------------------------|-------|
| AWG/No.            | Type     |                             |                       |                                      | 75°C                                   | 90°C | Coils                   | Reels |
| 12/2               | Solid    | 12/2                        | 0.505                 | 132                                  | 25                                     | 30   | 250'                    | 1000' |
| 12/3               | Solid    | 12/2                        | 0.539                 | 158                                  | 25                                     | 30   | 250'                    | 1000' |
| 12/4               | Solid    | 12/2                        | 0.574                 | 186                                  | 25                                     | 30   | 250'                    | 1000' |
| 10/2               | Solid    | 10/2                        | 0.580                 | 193                                  | 35                                     | 40   | 250'                    | 1000' |
| 10/3               | Solid    | 10/2                        | 0.623                 | 236                                  | 35                                     | 40   | 250'                    | 1000' |
| 10/4               | Solid    | 10/2                        | 0.668                 | 276                                  | 35                                     | 40   | 250'                    | 1000' |
| 12/2               | Stranded | 12/2                        | 0.527                 | 137                                  | 25                                     | 30   | 250'                    | 1000' |
| 12/3               | Stranded | 12/2                        | 0.564                 | 165                                  | 25                                     | 30   | 250'                    | 1000' |
| 12/4               | Stranded | 12/2                        | 0.602                 | 194                                  | 25                                     | 30   | 250'                    | 1000' |
| 10/2               | Stranded | 10/2                        | 0.607                 | 201                                  | 35                                     | 40   | 250'                    | 1000' |
| 10/3               | Stranded | 10/2                        | 0.653                 | 243                                  | 35                                     | 40   | 250'                    | 1000' |
| 10/4               | Stranded | 10/2                        | 0.701                 | 288                                  | 35                                     | 40   | 250'                    | 1000' |

<sup>1</sup> SmartColorID manufactured under Patent No. 7,954,530, 8,454,785, 8,826,960 & 8,905,108

<sup>2</sup> Ampacity of conductors are based on NFPA 70 (NEC) Table 310.15(B)(16). See 110.14(C), 240.4(D) and 310.15(B) for other limitations where applicable.

For equipment marked for use at higher temperatures, the conductor ampacity shall be limited to the following per NEC 110.14(C):

60°C when terminated to equipment for circuits rated 100 amperes or less or marked for size 14 AWG through 1 AWG conductor.

75°C when terminated to equipment for circuits rated over 100 amperes or marked for conductors larger than 1 AWG.

90°C for ampacity derating purposes.

When the neutral is considered current-carrying conductor, the ampacity of 4/C cables shall be reduced by a factor of 0.80 per NEC 310.15(B)(3)(a).

The above data is approximate and subject to normal manufacturing tolerances.

## FEATURES

Installation costs reduced up to 50% over raceway and wire. Weight of aluminum armor is as much as 45% less than steel. SmartColorID labels are spaced at regular intervals on the exterior of the metal sheathing and are removable. For ease of installation and pulling, cable is reverse wound on reels. Coils are designed to be pulled from the inside.

## NOTE

Insulating anti-short bushings are not required by Section 330.40 of the NEC.

## Standard Conductor Color Coding

| Ground          | 277V/480V                   |
|-----------------|-----------------------------|
| 2               | Black/White                 |
| 3               | Black/Red/White             |
| 4               | Black/Red/Blue/White        |
| Ground          | Green                       |
| Isolated Ground | Green w/ Yellow SmartStripe |

### SmartColorID Legend:

