

# TYPE MC - COPPER CONDUCTOR - ALUMINUM ARMOR PVC JACKET - 600V/1000V XHHW-2 INNERS

## ENGINEERING SPECIFICATIONS

### Standards

Underwriters Laboratories® Standards UL-44, UL-1569, UL-1581, UL-1685, UL-2556 for type MC; Federal Specification AA-59544; NFPA 70 (NEC®) Article 330; NEMA RV-1, NEMA WC70/ICEA S-95-658 ; UL 1685-Method 1 (70,000 Btu/hr) Flame Test; ARRA 2009 Section 1605 "Buy American" Compliant; RoHS Compliant; MasterSpec Division 26 Sections 260519, 260523; WW-1 or IEEE 1202 (FT4) optional. UL Listing #E-301130



### APPLICATIONS

Type MC cable shall be permitted as follows:

- Permitted use for service, feeders and branch circuits in residential, commercial, industrial, and non-patient care areas/spaces of health care facilities;
- Acceptable for power, lighting, control, and signal circuits;
- Utilized for indoor or outdoor applications;
- Allowable in concealed or exposed systems;
- Permitted in wet locations per NEC 330.10(A)(11)(a);
- Permitted for direct burial in the earth or embedded in concrete per NEC 330.12(2)(a);
- Allowable in assembly occupancies (NEC 518.4);
- Permissible in theaters, audience areas of motion pictures, television studios, and similar locations (NEC 520.5);
- Permitted as aerial cable on a messenger (NEC 396.10(A));
- Allowable installations in approved raceways and cable trays (NEC 392);
- Suitable for installation under raised floors for IT equipment (NEC 645.5(E));
- For use with branch circuits to swimming pool, hot tubs, and spa applications per 680.14 and 330.12(2)(a) and (b);
- 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 14 AWG through 750 KCMIL, Encore's Metal-Clad Cable is constructed with soft-drawn copper. Type XHHW-2 conductors rated for wet or dry locations at temperatures not to exceed 90°C. Sizes 14 AWG through 1 AWG contain a green insulated grounding conductor. All conductors are cabled together with separator tape containing the identification print legend to form the cable core. Interlocked aluminum armor is applied over the entire assembly. A flame retardant, sunlight-resistant black PVC jacket applied over the armor.



- 1 Black PVC Jacket
- 2 Interlocked Aluminum Armor
- 3 Separator Tape
- 4 XHHW-2 Stranded Copper Conductor

| Conductors |          |        | Outside Diameter Over Armor (in) | Outside Diameter Over Jacket (in) | PVC Thickness (in) | Approximate Net Weight (lbs/1000 ft) | Allowable Ampacity (Amps) <sup>1</sup> |      | Standard Packaging |       |
|------------|----------|--------|----------------------------------|-----------------------------------|--------------------|--------------------------------------|--|------|--------------------|-------|
| AWG/No.    | Type     | Ground |                                  |                                   |                    |                                      | 75°C                                   | 90°C | Coils              | Reels |
| 14/2       | Stranded | 14 AWG | 0.464                            | 0.564                             | 0.050              | 150                                  | 20                                     | 25   | 250'               | 1000' |
| 14/3       | Stranded | 14 AWG | 0.498                            | 0.598                             | 0.050              | 175                                  | 20                                     | 25   | 250'               | 1000' |
| 14/4       | Stranded | 14 AWG | 0.536                            | 0.636                             | 0.050              | 201                                  | 20                                     | 25   | 250'               | 1000' |
| 12/2       | Stranded | 12 AWG | 0.503                            | 0.603                             | 0.050              | 184                                  | 25                                     | 30   | 250'               | 1000' |
| 12/3       | Stranded | 12 AWG | 0.542                            | 0.642                             | 0.050              | 217                                  | 25                                     | 30   | 250'               | 1000' |
| 12/4       | Stranded | 12 AWG | 0.584                            | 0.684                             | 0.050              | 252                                  | 25                                     | 30   | 250'               | 1000' |
| 10/2       | Stranded | 10 AWG | 0.553                            | 0.653                             | 0.050              | 234                                  | 35                                     | 40   | 250'               | 1000' |
| 10/3       | Stranded | 10 AWG | 0.597                            | 0.697                             | 0.060              | 282                                  | 35                                     | 40   | 250'               | 1000' |
| 10/4       | Stranded | 10 AWG | 0.646                            | 0.746                             | 0.060              | 331                                  | 35                                     | 40   | 250'               | 1000' |
| 8/2        | Stranded | 10 AWG | 0.677                            | 0.777                             | 0.060              | 315                                  | 50                                     | 55   | 250'               | 1000' |
| 8/3        | Stranded | 10 AWG | 0.757                            | 0.857                             | 0.060              | 395                                  | 50                                     | 55   | 250'               | 1000' |
| 8/4        | Stranded | 10 AWG | 0.834                            | 0.934                             | 0.060              | 474                                  | 50                                     | 55   | 250'               | 1000' |
| 6/2        | Stranded | 8 AWG  | 0.791                            | 0.881                             | 0.060              | 430                                  | 65                                     | 75   | 250'               | 1000' |
| 6/3        | Stranded | 8 AWG  | 0.884                            | 0.951                             | 0.060              | 542                                  | 65                                     | 75   | 250'               | 1000' |
| 6/4        | Stranded | 8 AWG  | 0.974                            | 1.074                             | 0.060              | 657                                  | 65                                     | 75   | 250'               | 1000' |
| 4/3        | Stranded | 8 AWG  | 0.964                            | 1.064                             | 0.060              | 719                                  | 85                                     | 95   | 250'               | 1000' |
| 4/4        | Stranded | 8 AWG  | 1.070                            | 1.170                             | 0.060              | 888                                  | 85                                     | 95   | 250'               | 1000' |
| 3/3        | Stranded | 6 AWG  | 1.049                            | 1.149                             | 0.060              | 874                                  | 100                                    | 115  | 250'               | 1000' |
| 3/4        | Stranded | 6 AWG  | 1.164                            | 1.264                             | 0.060              | 1079                                 | 100                                    | 115  | 250'               | 1000' |
| 2/3        | Stranded | 6 AWG  | 1.103                            | 1.203                             | 0.075              | 1025                                 | 115                                    | 130  | 250'               | 1000' |
| 2/4        | Stranded | 6 AWG  | 1.228                            | 1.328                             | 0.075              | 1277                                 | 115                                    | 130  | 250'               | 1000' |

<sup>1</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.

**PRINT LEGEND:** ENCORE WIRE CORPORATION (SIZE) W/G TYPE MC CABLE W/PVC JACKET 600V/1000V (UL) TYPE XHHW-2 CDRS SUN-RES IEEE1202/FT4 DIR BUR DATE/TIME/OPER/QC MACHINE

### FEATURES

Installation costs reduced up to 50% over raceway and wire. Weight of aluminum armor is as much as 45% less than steel. Insulating anti-short bushings are supplied with each reel or coil, but not required per Section 330.40 of the NEC.

### Standard Conductor Color Coding

| No.    | 120V/208V/240V       | No.    | 277V/480V                |
|--------|----------------------|--------|--------------------------|
| 2      | Black/White          | 2      | Brown/Gray               |
| 3      | Black/Red/White      | 3      | Brown/Orange/Gray        |
| 4      | Red/Black/White/Blue | 4      | Brown/Orange/Yellow/Gray |
| Ground | Green                | Ground | Green                    |

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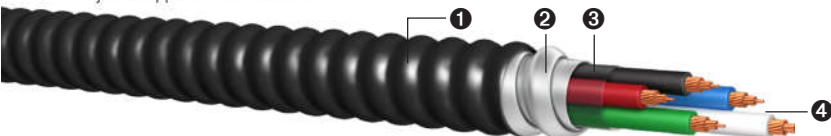
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| Conductors |          |                       | Outside Diameter Over Armor (in) | Outside Diameter Over Jacket (in) | PVC Thickness (in) | Approximate Net Weight (lbs/1000 ft) | Allowable Ampacity (Amps) <sup>1</sup> |      | Standard Packaging (ft) |
|------------|----------|-----------------------|----------------------------------|-----------------------------------|--------------------|--------------------------------------|--|------|-------------------------|
| AWG/No.    | Type     | Ground                |                                  |                                   |                    |                                      | 75°C                                   | 90°C |                         |
| 1/3        | Stranded | 6 AWG Green Insulated | 1.195                            | 1.295                             | 0.050              | 1162                                 | 130                                    | 145  | 1000' Reels             |
| 1/4        | Stranded | 6 AWG Green Insulated | 1.336                            | 1.436                             | 0.050              | 1477                                 | 130                                    | 145  | 1000' Reels             |
| 1/0-3      | Stranded | 6 AWG Bare            | 1.213                            | 1.313                             | 0.050              | 1359                                 | 150                                    | 170  | 1000' Reels             |
| 1/0-4      | Stranded | 6 AWG Bare            | 1.335                            | 1.435                             | 0.050              | 1742                                 | 150                                    | 170  | 1000' Reels             |
| 2/0-3      | Stranded | 6 AWG Bare            | 1.308                            | 1.408                             | 0.050              | 1624                                 | 175                                    | 195  | 1000' Reels             |
| 2/0-4      | Stranded | 6 AWG Bare            | 1.441                            | 1.541                             | 0.050              | 2092                                 | 175                                    | 195  | 1000' Reels             |
| 3/0-3      | Stranded | 4 AWG Bare            | 1.415                            | 1.515                             | 0.050              | 2048                                 | 200                                    | 225  | 1000' Reels             |
| 3/0-4      | Stranded | 4 AWG Bare            | 1.562                            | 1.682                             | 0.060              | 2637                                 | 200                                    | 225  | 1000' Reels             |
| 4/0-3      | Stranded | 4 AWG Bare            | 1.536                            | 1.656                             | 0.060              | 2498                                 | 230                                    | 260  | 1000' Reels             |
| 4/0-4      | Stranded | 4 AWG Bare            | 1.697                            | 1.817                             | 0.060              | 3233                                 | 230                                    | 260  | 1000' Reels             |
| 250-3      | Stranded | 4 AWG Bare            | 1.648                            | 1.768                             | 0.060              | 2904                                 | 255                                    | 290  | 1000' Reels             |
| 250-4      | Stranded | 4 AWG Bare            | 1.822                            | 1.942                             | 0.060              | 3770                                 | 255                                    | 290  | 1000' Reels             |
| 300-3      | Stranded | 3 AWG Bare            | 1.760                            | 1.880                             | 0.060              | 3192                                 | 285                                    | 320  | 1000' Reels             |
| 300-4      | Stranded | 3 AWG Bare            | 1.948                            | 2.068                             | 0.060              | 4211                                 | 285                                    | 320  | 1000' Reels             |
| 350-3      | Stranded | 3 AWG Bare            | 1.862                            | 1.982                             | 0.060              | 3931                                 | 310                                    | 350  | 1000' Reels             |
| 350-4      | Stranded | 3 AWG Bare            | 2.061                            | 2.181                             | 0.060              | 5120                                 | 310                                    | 350  | 1000' Reels             |
| 400-3      | Stranded | 3 AWG Bare            | 1.956                            | 2.076                             | 0.060              | 4173                                 | 335                                    | 380  | 1000' Reels             |
| 400-4      | Stranded | 3 AWG Bare            | 2.167                            | 2.287                             | 0.060              | 5514                                 | 335                                    | 380  | 1000' Reels             |
| 500-3      | Stranded | 2 AWG Bare            | 2.131                            | 2.251                             | 0.060              | 5451                                 | 380                                    | 430  | 1000' Reels             |
| 500-4      | Stranded | 2 AWG Bare            | 2.363                            | 2.513                             | 0.075              | 7124                                 | 380                                    | 430  | 1000' Reels             |
| 600-3      | Stranded | 2 AWG Bare            | 2.411                            | 2.561                             | 0.075              | 6454                                 | 420                                    | 475  | 1000' Reels             |
| 600-4      | Stranded | 2 AWG Bare            | 2.677                            | 2.827                             | 0.075              | 8450                                 | 420                                    | 475  | 1000' Reels             |
| 750-3      | Stranded | 1 AWG Bare            | 2.631                            | 2.781                             | 0.075              | 8015                                 | 475                                    | 535  | 1000' Reels             |
| 750-4      | Stranded | 1 AWG Bare            | 2.923                            | 3.073                             | 0.075              | 10506                                | 475                                    | 535  | 1000' Reels             |

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| 3      | Black/Red/White      | 3      | Brown/Orange/Gray        |
| 4      | Red/Black/White/Blue | 4      | Brown/Orange/Yellow/Gray |
| Ground | Green/Bare           | Ground | Green/Bare               |