TYPE MC-SG (SMARTGROUND™) - COPPER CONDUCTOR - 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/ICEA 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

MADE IN USA

SMART COLOR ID® MC-SG™

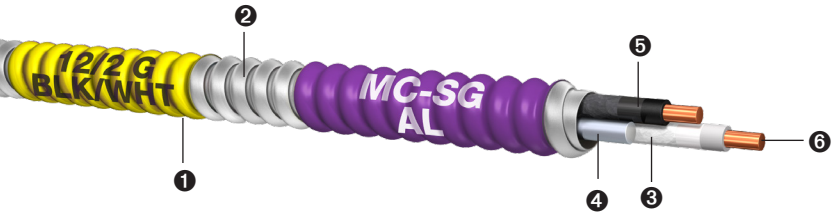
APPLICATIONS

Type MC cable shall be permitted as follows:

- Permitted use for branch circuits in residential, commercial, industrial, and non-patient care areas/spaces of health care facilities;
- 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 14 AWG through 10 AWG. Encore's Metal-Clad Cable is constructed with soft-drawn copper, Type THHN/THWN-2 conductors rated 90°C dry. All conductors are individually wrapped with flame retardant colored protective paper with print legend and cabled together to form the cable core. The bare aluminum grounding/bonding conductor is located outside the paper wrap and is cabled with the insulated conductors and in constant contact with sheathing per NEC 250.118(10)(b). Interlocked aluminum armor is applied over the entire assembly.



1. Removable SmartColorID[1] Label
2. Interlocked Aluminum Armor
3. Colored Flame-Redardant Protective Paper Covering
4. Aluminum Bonding Wire
5. PVC Insulation with Nylon Jacket
6. THHN/THWN-2 Copper Conductor

Conductors			Outside Diameter Over Armor (in)	Total Weight of Type MC-Copper Conductor (lbs/1000 ft)	Allowable Ampacity (Amps)[2]			Standard Packaging (ft)	
AWG/No.	Type	Grounding/ Bonding Wire			60°C	75°C	90°C	Coils	Reels
14/2	Solid	12 Solid AL	0.453	69.47	15	20	25	250'	1000'
14/3	Solid	12 Solid AL	0.483	88.03	15	20	25	250'	1000'
14/4	Solid	12 Solid AL	0.515	106.77	15	20	25	250'	1000'
12/2	Solid	10 Solid AL	0.482	91.49	20	25	30	250'	1000'
12/3	Solid	10 Solid AL	0.516	118.42	20	25	30	250'	1000'
12/4	Solid	10 Solid AL	0.555	145.78	20	25	30	250'	1000'
10/2	Solid	8 Solid AL	0.550	129.42	30	35	40	250'	1000'
10/3	Solid	8 Solid AL	0.592	170.32	30	35	40	250'	1000'
10/4	Solid	8 Solid AL	0.639	211.65	30	35	40	250'	1000'
14/2	Stranded	12 Solid AL	0.464	70.93	15	20	25	250'	1000'
14/3	Stranded	12 Solid AL	0.477	88.37	15	20	25	250'	1000'
14/4	Stranded	12 Solid AL	0.531	109.22	15	20	25	250'	1000'
12/2	Stranded	10 Solid AL	0.501	93.87	20	25	30	250'	1000'
12/3	Stranded	10 Solid AL	0.536	121.29	20	25	30	250'	1000'
12/4	Stranded	10 Solid AL	0.576	149.13	20	25	30	250'	1000'
10/2	Stranded	8 Solid AL	0.572	133.12	30	35	40	250'	1000'
10/3	Stranded	8 Solid AL	0.617	175.21	30	35	40	250'	1000'
10/4	Stranded	8 Solid AL	0.666	217.64	30	35	40	250'	1000'

[1] SmartColorID manufactured under Patent No. 7,954,530, 8,454,785, 8,826,960 & 8,905,108

[2] Ampacity of conductors are based 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

The NEC 250.118(10)(b) recognizes the combination of interlocking armor and bond wire as an equipment grounding conductor. Installation costs reduced by up to 50% over raceway and wire. Suitable for type MCI-A fittings. 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

No.	120V/208V/240V
2	Black/White
3	Black/Red/White
4	Black/Red/Blue/White

No.	277V/480V
2	Brown/Gray
3	Brown/Orange/Gray
4	Brown/Orange/Yellow/Gray

SmartColorID Legend:

TYPE MC-SG (SMARTGROUND™) - COPPER CONDUCTOR - STEEL 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/ICEA 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

SMART COLOR ID® MC-SG™

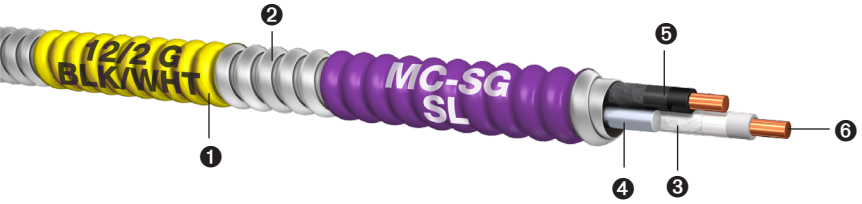
APPLICATIONS

Type MC cable shall be permitted as follows:

- Permitted use for branch circuits in residential, commercial, industrial, and non-patient care areas/spaces of health care facilities;
- 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;
- Complies with Buy American Provisions in Section 1605 of the ARRA 2009.

CONSTRUCTION

Available in sizes 14 AWG through 10 AWG. Encore's Metal-Clad Cable is constructed with soft-drawn copper, Type THHN/THWN-2 conductors rated 90°C dry. All conductors are individually wrapped with flame retardant colored protective paper with print legend and cabled together to form the cable core. The bare aluminum grounding/bonding conductor is located outside the paper wrap and is cabled with the insulated conductors and in constant contact with sheathing per NEC 250.118(10)(b). Interlocked galvanized lightweight steel armor is applied over the entire assembly.



1. Removable SmartColorID[1] Label
2. Interlocked Galvanized Lightweight Steel Armor
3. Colored Flame-Redardant Protective Paper Covering
4. Aluminum Bonding Wire
5. PVC Insulation with Nylon Jacket
6. THHN/THWN-2 Copper Conductor

Conductors			Outside Diameter Over Armor (in)	Total Weight of Type MC-Copper Conductor (lbs/1000 ft)	Allowable Ampacity (Amps)[2]			Standard Packaging (ft)	
AWG/No.	Type	Grounding/ Bonding Wire			60°C	75°C	90°C	Coils	Reels
14/2	Solid	12 Solid AL	0.453	128.77	15	20	25	250'	1000'
14/3	Solid	12 Solid AL	0.483	152.04	15	20	25	250'	1000'
14/4	Solid	12 Solid AL	0.515	175.82	15	20	25	250'	1000'
12/2	Solid	10 Solid AL	0.482	155.35	20	25	30	250'	1000'
12/3	Solid	10 Solid AL	0.516	187.63	20	25	30	250'	1000'
12/4	Solid	10 Solid AL	0.555	221.17	20	25	30	250'	1000'
10/2	Solid	8 Solid AL	0.550	204.02	30	35	40	250'	1000'
10/3	Solid	8 Solid AL	0.592	251.60	30	35	40	250'	1000'
10/4	Solid	8 Solid AL	0.639	300.43	30	35	40	250'	1000'
14/2	Stranded	12 Solid AL	0.464	131.96	15	20	25	250'	1000'
14/3	Stranded	12 Solid AL	0.477	151.43	15	20	25	250'	1000'
14/4	Stranded	12 Solid AL	0.531	180.81	15	20	25	250'	1000'
12/2	Stranded	10 Solid AL	0.501	160.72	20	25	30	250'	1000'
12/3	Stranded	10 Solid AL	0.536	193.67	20	25	30	250'	1000'
12/4	Stranded	10 Solid AL	0.576	227.87	20	25	30	250'	1000'
10/2	Stranded	8 Solid AL	0.572	211.22	30	35	40	250'	1000'
10/3	Stranded	8 Solid AL	0.617	260.47	30	35	40	250'	1000'
10/4	Stranded	8 Solid AL	0.666	310.74	30	35	40	250'	1000'

[1] SmartColorID manufactured under Patent No. 7,954,530, 8,454,785, 8,826,960 & 8,905,108

[2] 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

The NEC 250.118(10)(b) recognizes the combination of interlocking armor and bond wire as an equipment grounding conductor. Installation costs reduced by up to 50% over raceway and wire. Suitable for type MCI-A fittings. 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

No.	120V/208V/240V
2	Black/White
3	Black/Red/White
4	Black/Red/Blue/White

No.	277V/480V
2	Brown/Gray
3	Brown/Orange/Gray
4	Brown/Orange/Yellow/Gray

SmartColorID Legend: