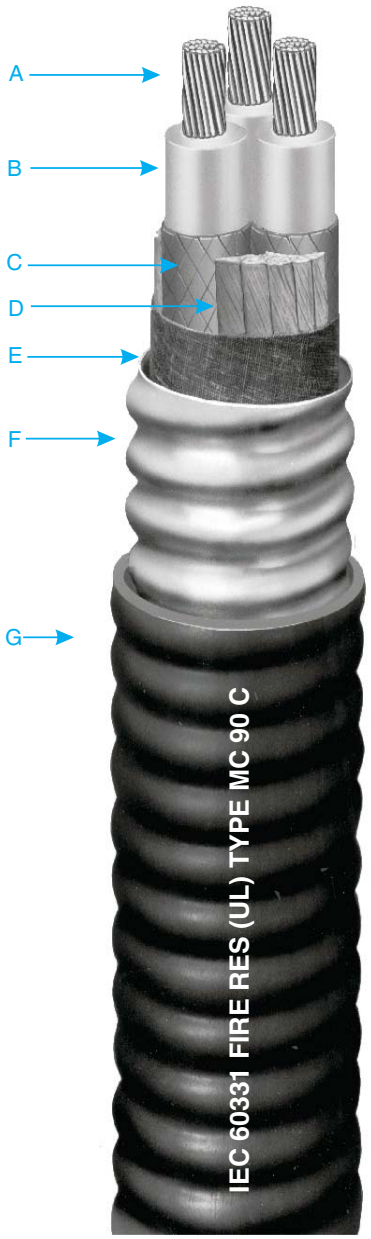
Okotherm® CIC Fire Resistant Cable

600V Control Cable—Type MC C-L-X, Aluminum Sheath
Multiple Nickel Coated Copper Conductors, 90°C Wet or Dry Rating
600/1000V Marine Shipboard
For Cable Tray Use - Sunlight Resistant - For Direct Burial



A Nickel Coated Copper Conductors
B Okotherm (Silicone) Thermoset Insulation
C Fiberglass Braid - Coded per ICEA
D Glass Fillers
E Cable Tape
F Impervious, Continuous, Corrugated, Aluminum C-L-X Sheath
G Black Okoseal Jacket

Cable Description

Nickel coated copper conductors, Okotherm CIC fire resistant thermoset silicone insulation, with FR tape if required, color or number coded fiber glass braid, cabled conductors, optional grounding conductor, cable tape, aluminum CLX sheath, Okoseal (PVC) jacket.
Conductors: Nickel Coated Copper
Insulation: Okotherm Thermoset Silicone, with FR tape if required
Color Code: ICEA S-73-532, Method 3 or 4
Braid: Fiber Glass Braid
Armor-CLX: Continuously Welded and Corrugated Aluminum
Outer Jacket: Black PVC

Applicable Industry Standards:

— UL 1569, 1309 — ICEA S-73-532 (NEMA WC 57) — ICEA S-95-658 (NEMA WC 70) — ASTM B-355

Flame Tests:

IEC 60331, ICEA T-29-520, IEEE 1202

Applications

Okotherm CIC 600 volt control cables are used in systems where, in the event of a fire, circuit integrity is required in order to maintain a process or to safely shut down the process. Fire resistance is determined by compliance to the IEC 60331 circuit integrity fire test. Okotherm CIC cables maintain circuit integrity based on qualification to the IEC standard 60331 for all temperatures and times up to and including 2000°F for three hours. When exposed to a fire, the Okotherm CIC insulation becomes an electrically insulating ceramic-like ash that is capable of maintaining the operating voltage.
Okotherm CIC CLX Type MC cables with the impervious, continuous aluminum corrugated sheath are recommended as an alternative to a wire conduit system. These cables may be installed indoors or outdoors, in wet or dry locations, as open runs of cable secured to supports not more than six feet apart, in cable tray, as an aerial cable on a messenger, in any approved raceway, direct burial, or encased in concrete. They are also approved for use in Class I & II, Division 2, Class III, Division 1 and 2 and Class I, Zone 2 hazardous locations per NEC Articles 501, 502, 503, and 505.
Okotherm CIC CLX Type MC control cables are authorized for use on services, feeders and branch circuits for power, lighting, control and signaling circuits in accordance with NEC articles 330 and 725.

Product Features

- UL Listed as Type MC cable E38916 and Marine Shipboard Cable E137931.
- UL Listed for cable tray use, direct burial (2/C 14 AWG and larger) and sunlight resistant.
- Passes the IEEE 383-1974 and IEEE 1202-1991 vertical tray flame tests.
- Passes the 210,000 BTU ICEA T-29-520 Vertical Tray Flame Test.
- Complete pre-packaged, factory-tested wiring system — color coded.
- C-L-X cables are quality control inspected to meet or exceed applicable UL standards.
- 90°C continuous operating temperature in all types of installations.
- 130°C emergency rating.
- 250°C short circuit rating.
- Good EMI shielding characteristics.
- Impervious, continuous metallic sheath excludes moisture, gases and liquids.
- Lower installed system cost than conduit or EMT systems.
- Provides excellent grounding safety.
- In addition, the aluminum CLX sheath exceeds the equipment grounding requirements of NEC Section 250.118 and 250.122, and can be used as the equipment grounding conductor.
- Excellent compression and impact resistance.
- Continuous long lengths.
- Minimum installation temperature of -40°C or °F.
- American Bureau of Shipping (ABS) listed as CWCMC Type MC.
- Optional LSZH jacket available.
- Fire Resistant - Qualified to meet IEC 60331, -11 & -21, including temperature and time up to 2000°F for 3 hours, respectively.
- Fire Resistant - Qualified to meet the Hydrocarbon Pool Circuit Integrity Fire Test, utilizing the UL 1709 time-temperature curve, with minimum requirements of 65,000 BTU/h-ft^2 heat flux, 2000°F flame temperature, 30 minute test duration, and 15A load.

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Catalog Number	Conductor Size AWG	Number of Conductors	Insulation Thickness - mils	Core O.D. -Inches	C-L-X O.D. - Inches	Jacket Thickness - mils	Approx. O.D. - Inches	Cross-Sectional Area (sq. in.) †	Approx. Net Weight lbs./1000'	Approx. Ship Weight lbs./1000'	90°C Wet or Dry (1) NEC Ampacity*	75°C Wet NEC Ampacity*
NICKEL COPPER, IEC Rating: 2000°F for 3 hours												
546-15-3452	14 (7X)	2	45	0.43	0.62	50	0.73	0.42	222	319	15	15
546-15-3453	14 (7X)	3		0.46	0.67	50	0.78	0.48	267	362	15	15
546-15-3454	14 (7X)	4		0.52	0.71	50	0.82	0.58	312	424	15	15
546-15-3455	14 (7X)	5		0.58	0.75	50	0.86	0.65	330	476	15	15
546-15-3457	14 (7X)	7	45	0.64	0.84	50	0.95	0.79	397	570	15	14
546-15-3459	14 (7X)	9		0.77	0.97	50	1.08	1.00	488	648	15	14
546-15-3462	14 (7X)	12		0.88	1.06	50	1.17	1.25	653	865	12	10
546-15-3469	14 (7X)	19		1.06	1.29	50	1.40	1.65	893	1199	12	10
546-15-3487	14 (7X)	37		1.48	1.74	60	1.62	3.02	1880	2173	10	8
546-15-3552	12 (7X)	2	45	0.47	0.67	50	0.78	0.48	292	358	20	20
546-15-3553	12 (7X)	3		0.50	0.71	50	0.82	0.53	338	411	20	20
546-15-3554	12 (7X)	4		0.56	0.75	50	0.86	0.65	400	487	20	20
546-15-3555	12 (7X)	5		0.63	0.84	50	0.95	0.71	446	550	20	20
546-15-3557	12 (7X)	7	45	0.70	0.88	50	0.97	0.85	544	668	20	17
546-15-3559	12 (7X)	9		0.84	1.02	50	1.13	1.17	676	814	20	17
546-15-3562	12 (7X)	12		0.96	1.11	50	1.21	1.43	823	1032	15	12
546-15-3569	12 (7X)	19		1.16	1.37	50	1.48	1.96	1312	1455	15	12
546-15-3587	12 (7X)	37		1.62	1.87	60	2.00	3.43	2480	2759	12	10
546-15-3652	10 (7X)	2	45	0.51	0.71	50	0.82	0.58	330	418	30	30
546-15-3653	10 (7X)	3		0.55	0.75	50	0.86	0.65	424	488	30	30
546-15-3654	10 (7X)	4		0.62	0.84	50	0.95	0.71	516	574	30	28
546-15-3655	10 (7X)	5		0.69	0.89	50	1.00	0.85	623	665	30	28
546-15-3657	10 (7X)	7	45	0.76	0.97	50	1.08	1.00	732	818	28	24
546-15-3659	10 (7X)	9		0.92	1.15	50	1.26	1.33	885	994	28	24
546-15-3662	10 (7X)	12		1.05	1.29	50	1.40	1.65	1193	1312	28	17

Okonite's web site, www.okonite.com contains the most up to date information.

† **Cross-sectional** area for calculation of cable tray fill in accordance with NEC Section 392.22.

(1)**Ampacities**

Ampacities are based on Table 310.16 of the National Electrical Code for conductors rated 90°C, in a multi-conductor cable, at an ambient temperature of 30°C (86°F). The 75°C column is provided for additional information.

The ampacities shown apply to open runs of cable, installation in any approved raceway, direct burial in the earth, or as aerial cable on a messenger. Derating for more than three current carrying conductors within the cable is in accordance with NEC Section 310.15(C)(1).

The ampacities shown also apply to cables installed in cable tray in accordance with NEC Section 392.80.

*Current limited to 15, 20 and 30 amps per Section 240.4(D) of the NEC for #14, #12 and #10 AWG, respectively.

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