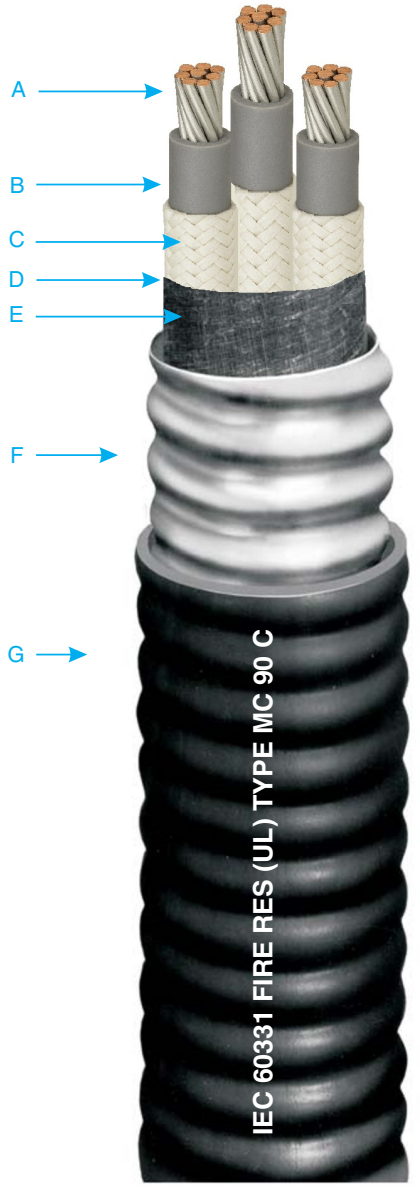
THE OKONITE COMPANY

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 fiberglass 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.

Braid: Fiberglass braid, coated with lacquer.
Color Code: Cables up to and included 7 conductors are Method 3, Table E-2 (print number and color) and cables greater than 7 conductors are Method 4 (print number) per ICEA S-73-532, Appendix E.
Armor: Continuously corrugated and welded aluminum (C-L-X).
Outer Jacket: Black Okoseal PVC.

Industry Standards:

These cables are manufactured and tested in compliance with UL 1569, UL 2225, UL 1309, ICEA S-95-658 (NEMA WC70), ICEA S-73-532 (NEMA WC57), and ASTM B-355, and are qualified to flame test requirements including IEC 60331, ICEA T-29-520, and IEEE 1202.

Applications

Okotherm CIC 600 Volt Power Cables are designed for use in systems where circuit integrity must be maintained during a fire to ensure process continuity of safe shutdown. Fire resistance is qualified to the IEC 60331, with circuit integrity maintained at temperatures up to 2000°F for three hours. During fire exposure, the insulation forms a ceramic-like ash that remains electrically insulating and capable of supporting the operating voltage.

Okotherm CIC CLX Type MC cables, constructed with an impervious corrugated aluminum sheath, provide a robust alternative to conduit systems. They are approved for installation indoors or outdoors, in wet or dry locations, in open runs on supports up to six feet apart, in cable tray, on messenger-supported aerial runs, in raceways, direct burial, or concrete encasement.

These cables are also rated for Class I & II, Division 1 and 2, Class III, Division 1 and 2, and Class I, Zones 1 & 2 hazardous locations per NEC Articles 501, 502, 503, and 505. Okotherm CIC CLX Type MC control cables are further authorized for use on services, feeders and branch circuits for power, lighting, control and signaling in accordance with NEC Articles 330 and 725.

Product Features

- UL Listed as Type MC (E38916) and Marine Shipboard Cable (E137931).
- Approved for cable tray use, direct burial (2/C #14 AWG and larger), and sunlight resistant.
- Flame tested: IEEE 383-1974, IEEE 1202, and ICEA T-29-520 (210,000 BTU).
- Factory-assembled, pre-tested wiring system with color coding.
- ABS Type approved.
- Operating temperature: 90°C continuous, 130°C emergency, 250°C short circuit.
- Impervious corrugated aluminum sheath blocks moisture, gases, and liquids.
- Provides excellent EMI shielding, grounding safety, and mechanical strength (compression/impact).
- Reduced sealing fitting requirements in Class I, Div. 2 and Zone 2 hazardous locations (NEC 501.15)(E)(3), 505.16(C)(2)(c)).
- Lower installed system cost compared to conduit or EMT systems.
- Supplied in continuous long lengths; minimum installation temperature -40°C/F.
- Optional LSZH jacket available.
- Fire resistant - qualified to IEC 60331-11 & -21, including circuit integrity up to 2000°F for 3 hours.
- Fire resistant - qualified to the Hydrocarbon Pool Circuit Integrity Fire Test (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	0.53	312	424	15	15
546-15-3455	14 (7X)	5		0.58	0.75	50	0.86	0.58	330	476	15	15
546-15-3457	14 (7X)	7	45	0.64	0.84	50	0.95	0.71	397	570	15	14
546-15-3459	14 (7X)	9		0.77	0.97	50	1.08	0.92	545	625	15	14
546-15-3462	14 (7X)	12		0.88	1.06	50	1.17	1.08	653	865	12	10
546-15-3469	14 (7X)	19		1.06	1.29	50	1.40	1.53	893	1199	12	10
546-15-3487	14 (7X)	37		1.48	1.74	60	1.87	2.74	1613	1800	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	0.58	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	0.73	544	668	20	17
546-15-3559	12 (7X)	9		0.84	1.02	50	1.13	1.00	676	814	20	17
546-15-3562	12 (7X)	12		0.96	1.11	50	1.21	1.15	823	1032	15	12
546-15-3569	12 (7X)	19		1.16	1.37	50	1.48	1.72	1312	1455	15	12
546-15-3587	12 (7X)	37		1.62	1.87	60	2.00	3.14	2480	2759	12	10
546-15-3652	10 (7X)	2	45	0.51	0.71	50	0.82	0.53	372	460	30	30
546-15-3653	10 (7X)	3		0.55	0.75	50	0.86	0.58	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	0.79	623	665	30	28
546-15-3657	10 (7X)	7	45	0.76	0.97	50	1.08	0.92	732	818	28	24
546-15-3659	10 (7X)	9		0.92	1.15	50	1.26	1.25	885	994	28	24
546-15-3662	10 (7X)	12		1.05	1.29	50	1.40	1.53	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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