

Quick Reference Guide for Lifeline® FHIT.50 System

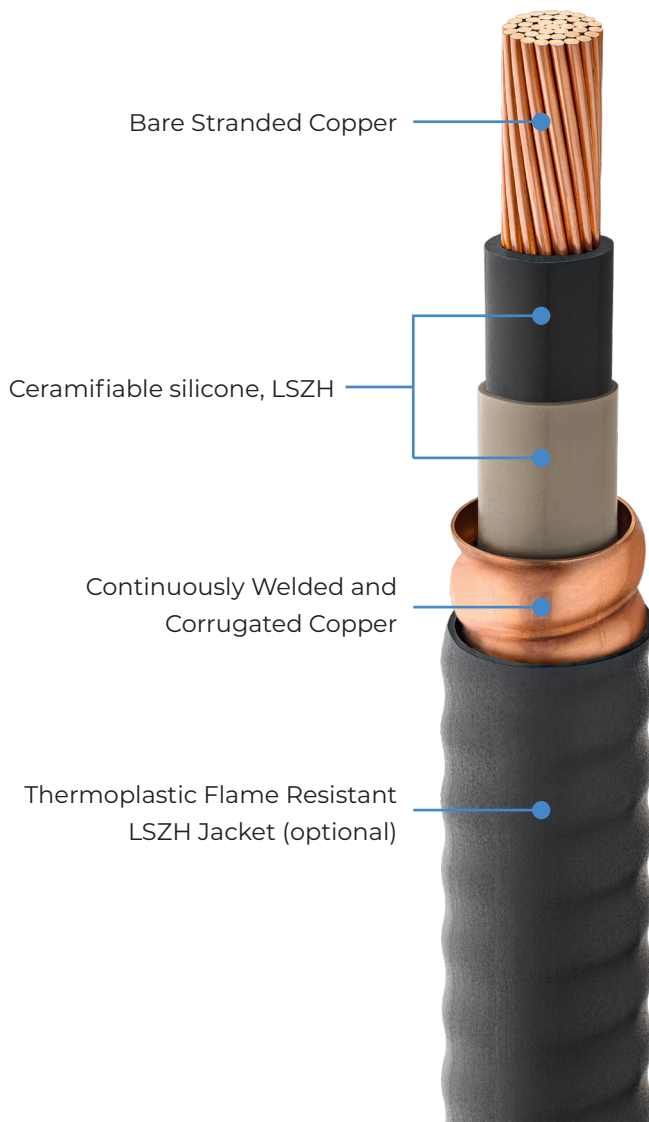


Lifeline® MC and MC LSZH Jacketed Two-Hour Fire-Resistive Cables for Critical & Life Safety Applications

Lifeline® MC and MC LSZH Jacketed Fire Resistive Cable Overview

Lifeline® Metal Clad (MC) Power Cables are UL 2196 certified and listed for two-hour fire resistance. A cost-effective alternative to MI cables, concrete encasement, or fire-rated assemblies for critical and life safety systems.

Consult AHJ for approval before installation.



Compliance

- Classified to **UL 2196**, Standard for Tests for Fire Resistive Cables, for **two-hours**.
- Listed to **UL 1569**, Metal Clad Cables, for Cable Tray Use as the Following Type:
Type MC 600 Volt, Rated 90°C
- Electrical Circuit Integrity System (FHIT) No. 50 of the UL Fire Resistance Directory.
- **IEEE 1202/ FT4** Rated, **ST1** Limited Smoke
- Wet-rated, Sunlight-resistant, and Direct Burial Capable*
- NFPA 70, NFPA 72, NFPA 101, NFPA 130*, NFPA 502*
- Corrugated Copper Armor Meets Ground Requirements of NEC Table 250.122.



Applications

Critical life safety and emergency systems.
Conformant to NEC articles 695, 700, 708, and 728.

Commercial

- High-Rise / Commercial / Public Buildings
- Educational Institutions / Dormitories
- Auditoriums / Stadiums / Museums

Infrastructure

- Emergency Lighting and Ventilation for Roadway and Transit Tunnels*

* Compliant when installed with optional LSZH jacket

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for Critical & Life Safety Applications

Technical Support

Design and Installation Reviews for UL, NFPA 70, and FHIT standards.

Letters of Compliance are available upon request to assist inspectors and AHJs without requiring on-site presence.

Email: na.lifeline@prysmian.com

Website: na.prysmian.com

Recommended Tools

No specialized tools are required for installation of these splices. Recommended tools are listed below:

- Tubing cutter
- Wire stripping tool
- Large flat head screwdriver
- Channel-lock pliers
- Stainless-steel-capable hole saw
- Heat gun or torch
- Small steel scale
- Utility knife
- Hammer
- Cable cutter
- Scissors
- Marker
- Crimping tool
- Tape measure

Installation Documentation

The UL 2196 fire-resistive system (FHIT.50) includes approved, brand-specific fire-resistive cables, conductors, and components that form a complete system. **Substitutions are not allowed.**

- [1] Product Overviews, Ampacities, and Dimensions (TIS #400):



- [2] Manufacturer's Installation Instructions (TIS #401):



- [3] Manufacturer's 2-h Splice Instructions with Ceramifiable Tape (TIS #403):



Pre-Submission Design Checklist for Fire-Rated Cable System (FHIT.50)



Lifeline® MC and MC LSZH Jacketed Two-Hour Fire Resistive Cables
Based on Technical Information Sheets #400, #401, and #403

1) Fire Resistive Cable

- ☐ Lifeline® MC or MC LSZH Single or Multiconductor cables.
- ☐ Cables installed in dedicated raceways.

2) Cable Supports

A) General Supports

- ☐ Secured to 2-h fire-rated structure.
- ☐ Support spacing: 4 ft (H/V).
- ☐ Slotted steel channels (12-gauge, 1½ – 1⅝ in. wide):
 - ☐ ≤5 ft: 2 anchors (ends).
 - ☐ 5 ft: 3 anchors (ends + center).
- ☐ Supports at each end of cable bends.

B) Clamps

- ☐ Steel 2-piece single-bolt clamps (1 ¼ in. wide, 14-gauge min).
- ☐ Clamp trade size matches cable diameter.
- ☐ Clamps applied within 12 in. of boxes, cabinets, fittings, or terminations and every 4 ft thereafter.

C) Trapeze supports (Optional)

- ☐ Support spacing: 4 ft (OC).
- ☐ Secured to 2-h fire-rated structure.

D) Cable Trays (Optional)

- ☐ Cable trays are steel or stainless-steel and secured to 2-h fire-rated structure.
- ☐ Cables are secured to trays with steel clamps or straps at intervals not exceeding 4 ft.
- ☐ Cable trays are not loaded beyond their maximum capacity as permitted by the NEC.
- ☐ Cable Trays are exposed and accessible as permitted by the NEC.
- ☐ Cable trays are suitably grounded
- ☐ (Single conductor cables only) All single phase and equipment ground conductors are **bundled** within metal enclosures or raceways to prevent inductive heating.

3) Pulling

- ☐ Min pulling radius: 10x cable diameter.
- ☐ Min training radius (final): 7x cable diameter.
- ☐ Cable run is designed to be pulled in one continuous length (*as possible*).

4) Cable Splices (Optional)

- ☐ Optional taped splice applied only to cables sized 2 AWG and larger.
- ☐ Splices and terminations are exposed and accessible as permitted by the NEC.

A) Materials

- ☐ Lifeline® Ceramifiable Tape.
- ☐ REMKE PowR-Teck™ RTKSS stainless steel MC cable connectors.
- ☐ Stainless steel connector locking nuts.
- ☐ Selco model NEMA 4X or Resolve One NEMA 4X stainless steel enclosures.
- ☐ Eaton Crouse-Hinds DP-E Brass Breather Drain.
- ☐ Thomas & Betts Blackburn® Two-Way splice copper compression connectors.
- ☐ 3M™ Heavy Wall Heat Shrink Tubing ITCN.
- ☐ 3M™ Glass Cloth Electrical Tape 69.

B) Enclosures

- ☐ Enclosure size matches cable trade size based on **Tables 1 and 2** in TIS #403.
- ☐ Enclosure holes are appropriately sized and located for clearance.
- ☐ Enclosure mounted to fire-rated structure with ≥¾ in. steel bolts.

C) Connectors and Splicing Techniques

- ☐ Installation of connectors and splices performed according to techniques in TIS #401 Mar. 2024.

5) Penetrations & Firestop

- ☐ Openings are closely sized to the raceway.
- ☐ Firestopped with UL-listed XHEZ system.

6) Terminations Beyond Fire Zone

- ☐ Cables extend ≥12 in. beyond fire-rated wall/floor.

Note: The above-mentioned points are applicable and required in the fire zone. Otherwise, when protected by other means of 2-h fire protection, standard NEC codes for MC cable installations apply.