Manufacturer's Instructions for Lifeline® RC90 and RC90 LSZH Jacketed: One Hour and Two-Hour Fire-Resistive Cables – ULC-S139

Technical Information Sheet #400CA

This Technical Information Sheet (TIS) covers Lifeline® RC90 and RC90 LSZH Jacketed Single and Multi-Conductor: ULC Approved One-Hour and Two-Hour Fire-Resistive Power Cables.

Applications

Lifeline® RC90 Cables have been qualified and listed to the demanding requirements of ULC-S139, *Standard for Fire Test for Circuit Integrity of Fire-Resistive Cables*, and are CSA Listed Type RC90.

Lifeline® RC90 Cables meet industry code requirements of the National Building Code of Canada Articles 3.2.6 and 3.2.7.10, NFPA 70, NFPA 72, NFPA 101, NFPA 130, and NFPA 502 for fire resistance according to ULC-S139 standard when installed per applicable codes, including federal, state, local and municipal rules, laws and regulations, as well as Electrical Circuit Integrity Systems Certified for Canada - 51 and 51A (FHIT7.51 and FHIT7.51A). Note that Authorities Having Jurisdiction (AHJ) should be consulted for approval prior to cable purchase and installation.

Requirements

1) Codes / Laws / Regulations

Selection and installation compliance is dependent on the applicable issue of any code or addendum that covers the use of Lifeline® RC90, Fire-Resistive Cables.

2) ULC Electrical Circuit Integrity System #51 and #51A (FHIT7.51 and FHIT7.51A)

The most current listing details and supporting information applicable to Lifeline® RC90 Cables' circuit integrity rating (CIR) classification can be obtained from UL's UL Product IQ website by searching for keywords: FHIT7.51 or FHIT7.51A.

Where:

FHIT7.51 covers single-conductor and multi-conductor cables with 2-hour CIR at 600 volts utilization and includes optional taped splice for conductor sizes 2AWG and larger. Refer to TIS 403CA for splice installation instructions. FHIT7.51A covers single-conductor and multi-conductor cables with 1-hour CIR at 600 volts utilization and optional ceramic stand-off splice for use with conductor sizes 14AWG to 350MCM. Refer to TIS 402CA for splice installation instructions.

3) Manufacturer's Instructions – TIS #400CA

All Lifeline® RC90 Cable products are covered by specific datasheets and supporting Technical Information Sheets that provide the user with information to properly select and install Lifeline® RC90 Cables in a reliable and trouble-free manner. Do not hesitate to contact your Lifeline® RC90 Cable representative should you have any questions.

Additional Features Available

1) Optional Outer Jacket

A corrosion resistant outer jacket is available over copper armor for applications with destructive corrosive conditions.

2) Splices

A two-hour and one-hour ULC approved fire resistive splices are available for Lifeline RC90 and Lifeline RC90 LSZH Cables. See FHIT7.51 and FHIT7.51A and contact your Lifeline® RC90 Cable representative for additional instructions.

Installation Parameters

1) Cable: Lifeline® RC90

Code compliant cable classified as one-hour or two-hour fire-resistive according to ULC-S139 when installed in accordance with FHIT7.51 or FHIT7.51A, the Canadian Electric Code (CEC), and all applicable federal, state, and municipal regulations.

2) Securing and Supporting Spacing

Code compliant fire-resistive installation in both horizontal and vertical orientations requires the cable be secured and supported at intervals not exceeding four feet (48 inches), at each side cable bends, and within one foot (12 inches) of cable connector terminations. Noted exception: support spacing described above is in lieu of support spacing allowed in the NEC and CEC, and is required for compliant two-hour fire-resistive installation.

3) Supports and Fasteners

Cables shall be secured to supports using steel two-piece single-bolt pipe clamps. Supports shall be steel components or other fire rated components (described in FHIT7.51 and FHIT7.51A) proven to meet the required fire resistance ratings. No substitute components are allowed.

4) Cable Trays

Cable shall be installed in steel cable trays in accordance with CEC and tray manufacturer's instructions. Trays shall be supported at intervals not exceeding four feet (48 inches) and cables shall be secured to trays with steel clamps or straps at intervals not exceeding four feet (48 inches)

5) Cable Bending

The minimum bending radius for Lifeline® RC90 cable is defined in two conditions.

1. The minimum pulling radius is 10 times the cable diameter when the cable is under tension and is being pulled around bends during installation (Example: if cable diameter is 1 inch, the minimum bend radius is 10 inches, and minimum diameter of sheaves or rollers used during installation is 20 inches).
2. The minimum training radius is 7 times the cable diameter when the cable is not under tension and when the cable is in final installation position. During installation and handling, the bend radius should be kept as large as possible using a sheave with the full minimum bending radius of the cable.

6) Cable Pulling and Handling

Proper cable pulling and handling techniques are essential to ensure a damage free installation. The Lifeline® RC90 Installation Manual (TIS #401CA) describes the recommended best practices.

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