

# CSI Model Specification: Fire-Rated Wiring Systems (Canada) CI

## 1 General

Furnish and install a complete UL/ULC 2-hour fire rated, UL/ULC Listed wiring system consisting of specified wiring cable, components, and accessories listed specifically for use with the system.

### 1.1 REFERENCES

- 1.1.1 C22.1 Canadian Electrical Code, Part I
- 1.1.2 ULC S139
- 1.1.3 ULC Online Certification Directory
- 1.1.4 CSA C22.2 No. 208
- 1.1.5 UL 2196
- 1.1.6 UL Fire Resistance Directory

### 1.2 SUBMITTALS

- 1.2.1 Provide product data for each cable type.
- 1.2.2 Provide manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements.

### 1.3 QUALIFICATIONS

- 1.3.1 Supplier: Company specializing in manufacturing products specified in this Section.

### 1.4 REGULATORY REQUIREMENTS

- 1.4.1 Conform to requirements of Canadian Electrical Code, Part I.
- 1.4.2 Conform to requirements of Fire Resistant Cables in the ULC Online Certification Directory and the Electrical Circuit Protective System Listing in the UL Fire Resistance Directory.
- 1.4.3 Furnish products Certified by CSA as suitable for the purpose specified.

## 2 Products

### 2.1 TYPE FAS90 FIRE ALARM CABLE

#### 2.1.1 2-hour fire-rated polymer insulated cables

Acceptable products are Raychem CI cable, or pre-approved alternative meeting this specification.

#### 2.1.2 Polymer insulated Type FAS90 cable shall have:

- Description: CEC, Type FAS90
- Cable Temperature Rating: 90°C
- Conductor: solid or stranded high conductivity copper designed to ensure tensile strength under fire conditions
- Insulation Material: silicone rubber
- Insulation Voltage Rating: 600 volts
- Outer Jacket: low smoke zero halogen polyolefin (FT4 Flame Rating)
- Shielded Construction: copper/polyester foil tape
- Unshielded Construction: polyester separator tape
- "CI" cables shall have a minimum voltage rating of 72 volts to ground

### 2.2 FIRE RESISTIVE RATING

#### 2.2.1 The FAS90 cables shall be listed as Fire Resistant Cables in the ULC Online Certification Directory and an Electrical Circuit Protective System in the UL Fire Resistance Directory and the System shall include the following:

- System shall be approved with minimum 1/2" steel conduit: EMT, IMC or RMC

- System shall be approved with 6-foot spacing between supports
- System shall be approved with steel pull box and steel conduit bodies
- System shall be approved for vertical installation including cable support mechanism (UL)
- System shall be approved with a pulling lubricant

### 2.3 COMPONENTS

2.3.1 Conduits, boxes and connectors for polymer insulated cables shall be cUL Listed/CSA Certified.

## 3 Execution

### 3.1 EXAMINATION

3.1.1 Verify that cable end factory temporary seals have remained intact.

3.1.2 Verify that no moisture has entered cable.

### 3.2 STORAGE

3.2.1 Cables shall be shipped from the manufacturer with ends sealed against moisture.

3.2.2 Protect the exposed cable ends with shrinkable, molded polyolefin end caps or other suitable means such as standard conduit sealing compound and PVC tape.

3.2.3 Cable shall be stored in a clean, dry location.

### 3.3 HANDLING

3.3.1 Cable shall be uncoiled by rolling or rotating supply reel.

3.3.2 Take precautions necessary to prevent damage to cable from contact with sharp objects, such as steel pull boxes or equipment enclosures.

### 3.4 INSTALLATION

3.4.1 The wiring system shall be installed according to the manufacturer's recommendations, and the requirements of Fire Resistant Cables in the ULC Online Certification Directory and UL "Electrical Circuit Protective System" Listing.

### 3.5 FIELD QUALITY CONTROL

3.5.1 Inspect cable for physical damage and proper connection.

3.5.2 Measure tightness of any bolted connections and compare torque measurements with manufacturer's recommended values.

3.5.3 Verify continuity of each conductor.

3.5.4 Prior to energizing cables, measure insulation resistance of each cable. Tabulate and submit for approval.

3.5.5 Provide certification from cable manufacturer that the installation is in accordance with their requirements and the requirements of the ULC Online Certification Directory and UL "Electrical Circuit Protective System" Listing.

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| <p>Worldwide Headquarters<br/>Tyco Thermal Controls<br/>300 Constitution Drive<br/>Menlo Park, CA 94025-1164<br/>USA<br/>Tel (800) 545-6258<br/>Fax (800) 596-5004<br/>info@tycothermal.com<br/><a href="http://www.tycothermal.com">www.tycothermal.com</a></p> | <p>Canada<br/>Tyco Thermal Controls<br/>250 West Street<br/>Trenton, Ontario<br/>Canada K8V 5S2<br/>Tel (800) 545-6258<br/>Fax (800) 596-5004</p> | <p>Important: All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their particular application. Tyco Thermal Controls makes no warranties as to the accuracy or completeness of the information, and disclaims any liability regarding its use. Tyco Thermal Controls' only obligations are those in the Tyco Thermal Controls Standard Terms and Conditions of Sale for this product, and in no case will Tyco Thermal Controls or its distributors be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of the product. Specifications are subject to change without notice. In addition, Tyco Thermal Controls reserves the right to make changes—without notification to Buyer—to processing or materials that do not affect compliance with any applicable specification.</p> |
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