



GENERAL FAQ'S

1. What is a Circuit Integrity Cable System?
2. Where do we use Circuit Integrity Cable Systems?
3. What are UL standards for CI Cable?
4. What are the NFPA codes?

1- What is a Circuit Integrity Cable System?

Circuit Integrity (CI) refers to the continuous operability of an electrical circuit during a fire when the system, including cable, is exposed to high temperature conditions. The system must pass a stringent UL testing process.

2 - Where do we use Circuit Integrity Cable Systems?

Circuit Integrity Cable Systems are used in emergency alarm control equipment. These cables are installed inside conduit in high occupancy buildings and critical infrastructure to protect the emergency fire alarm system and their circuit controls. These alarm systems must maintain operable during a fire in order to ensure adequate evacuation time and to ensure safety of first responders during fire conditions.

Examples of structures that would typically require Circuit Integrity Cable Systems include: High-rise buildings, stadiums, casinos, airports, hospitals, health care facilities, hotels, universities, government buildings, and mass transit tunnels, bridges and subways.

3 - What is a 2-hour Fire Rating?

- **UL 2196: UL Fire Test Standard for Circuit Integrity of Fire-Resistive Power, Instrumentation, Control and Data Cables**

When a system has a 2-hour fire rating, it has met the requirements to withstand high heat and fire conditions as well as firefighting procedures during a 2-hour period. The process requirements under the UL 2196 standard is designed to evaluate the performance of the electrical circuit protective system in severe fire events and evaluate the functionality when exposed to fire for 2 hours followed by the mechanical shock of a fire hose stream. Other UL listings for this product:

- **UL 1424: UL Standard for Power-Limited Fire-Alarm Circuits**

Southwire Circuit Integrity cables are UL certified as FPLR (Fire Power Limited Riser) and are rated for use between floors and in non-plenum areas. All of our FPLR cable constructions are UL listed and are compliant with the National Electrical Code (NEC).

- **UL 444: UL Standard for Safety Communications Cables**

Southwire Circuit Integrity cables are also UL certified as CMR (Communications Riser) and are constructed to prevent fires from spreading floor to floor in vertical installations. This cable type can be used when communication cables run between floors through risers or vertical shafts.

- **For Fire Resistive Cables and Circuit Integrity Systems Please refer to UL Link:**

<https://www.ul.com/news/qa-fire-resistive-cables-and-circuit-integrity-systems>



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4- What are the NFPA code applications?

National Fire Codes are published by the National Fire Protection Association (NFPA), a private trade association. NFPA publishes more than 300 consensus codes and standards intended to minimize the possibility and effects of fire and other risks. NFPA codes and standards are adopted and used throughout the world.

- **NFPA 70:** The National Electrical Code (NEC) is a regionally adoptable standard for the safe installation of electrical wiring and equipment in the United States.
- **NFPA 72:** National Fire Protection Association standard that covers the application, installation, location, performance, inspection, testing, and maintenance of fire alarm systems, supervising station alarm systems, public emergency alarm reporting systems, fire warning equipment and emergency communications systems (ECS), and their components.
- **NFPA 130:** National Fire Protection Association standard that covers Fixed Guideway for Transit and Passenger Railway Systems. The standard offers the latest provisions for underground, surface, and elevated fixed guideway transit and passenger rail systems, including stations, trainways, emergency ventilation systems, vehicles, emergency procedures, and communication and control systems.
- **NFPA 502:** National Fire Protection Association standard that provides fire protection and fire life safety requirements for limited access highways, road tunnels, bridges, elevated highways, depressed highways, and roadways that are located beneath air-right structures.