

Frequently Asked Questions About Fire Rated Cables



Question: Where can system Listings be found?

Answer: UL Listed or Classified products such as Power Limited Fire Alarm Cable (HNIR) or Non- power Limited Fire Alarm Cable (HNHT) with the "CI" marking, Electrical Circuit Protective Systems (FHIT), Fire Resistive Building Assemblies (BXUV) and Fire Resistive Cables (FHJR), as well as all UL product categories, can be located by the four-letter category code in parentheses following the product category title. The Guide Information for each category as well as Listings for these product categories can be accessed on UL's Online Certifications Directory at www.ul.com and entering the four-letter category code at the UL Category Code/Guide Information search.

Question : Can I use a THHN ground with a Fire Rated RHW cable?

Answer : A ground wire shall be the same as the fire rated cable, unless the system notes that another type of ground wire could be used. When burned, a non fire rated ground wire (such as THHN) may be incompatible with a fire rated cable, causing it to fail. Additionally, even for a bare copper ground, if a special alloy of copper is not used, the ground wire could loose strength and break during a fire. There are special ground wires (bare and insulated) that have been tested for a specific system. These ground wires are available from the manufacturer of that system for use in that system. Otherwise, only the fire rated cable listed in the system can be used as a ground.

Question : Can I use a box or conduit body with a Fire Rated RHW cable?

Answer : If a box or conduit body has been tested it will be noted in the system. Otherwise, a box or conduit body shall not be used in the fire zone with a fire rated system. This applies to power cable as well as fire alarm cable

Question : If the fire rated system says that steel EMT is to be supported every 5 feet, can I use rigid steel conduit and support it every 10 feet?

Answer : No. If not specified otherwise in the system, the support distance is for all qualified raceway or tray. Longer distances than tested, can cause the supports to sag excessively, and cause the cable to fail.

Question : What is the distance for supports of a cable tray?

Answer : Cable tray support distance is the same as the raceway unless otherwise specified in the system. This distance is for vertical and horizontal unless stated otherwise.

Question : What is the support distance for MI or MC cables?

Answer : The distance for the supports are specified in the system. This distance is for vertical and horizontal unless stated otherwise.

Question : What is the vertical support distance for cables in conduit?

Answer : The NEC requires cables in a raceway to be supported by Table 300.19. Vertical installation is limited to the support distance of the raceway unless otherwise noted in the system. Unlike MC or MI cable that is self supporting (that is to say the support on the cable supports the conductor), RHW/RHH or FPL/NPLF cables are not supported by the raceway supports. As an example, if the raceway support distance is 5 feet, and there is no special vertical support distance in the system, the maximum vertical run is 5 feet.

Question : What type of support can be used with cable in raceway for vertical installation?

Answer : Supports will be listed with the system if allowed. An example of a vertical support is a cable grip. This is installed in a box supported to the cable per the manufacturers instructions

Question : Can I use aluminum tray or raceway or PVC conduit with a fire rated cable?

Answer : No. Steel raceway or tray must be used unless specified otherwise in the system. Aluminum and PVC will melt in a fire, and may cause the cable to fail.

Question : Can I use a splices if it is not listed in the system with a fire rated cable?

Answer : No. The hourly fire rating applies only to continuous lengths of cable passing completely through a fire zone and terminating a minimum of 12 inches beyond the fire rated wall or floor bounding the fire zone unless otherwise noted in the system.

Question : Can a wrap be used around a box with a splice and fire rated cable?

Answer : Not unless the specific system was tested with this combination. There is currently no systems tested in this manner.

Question : Can a compression type coupling be used if the system only lists a steel setscrew coupling?

Answer : No. A compression type coupling may not hold the conduit together in a fire and should not be used.

Question : Is there a difference between CIC and CI?

Answer : Yes. Some cables are marked "CIC". This is not a NEC Type but rather a manufacturer's designation. This should not be confused with CI cable. When "CIC" cables are fire rated, they are part of a system listing. CI cable may also be shown in a system listing to demonstrate that these cables can also pass UL 2196 requirements when installed in a raceway. CI cable is tested on rings, and may be installed in open air where allowed by the NEC.

Question : Is CI tested in conduit?

Answer : Yes, if the manufacture desires to do so. If "CI" cable is to be installed in raceway it shall be so tested. CI cable that has been tested in a raceway will be specified in the system listing. Jackets for CI cables may be designed to swell and form a hard ash. This may help a cable pass on rings, but may not be suitable for installation in conduit. Testing the CI cable in conduit, would then demonstrates that the cable would continue to operate when installed in this configuration. Requirements for support distances should also be followed to ensure functionality. If the supports fail, the cable can fail. All other system issues as discussed below should be followed to ensure functionality.

Question : How would I know what cable types have been Certified (such as solid or stranded conductors, and shielded or unshielded cable)?

Answer : In order to determine what has been certified, the system contains the construction details of the tested configuration. One-conductor and multi-conductor constructions are tested separately, as well as shielded or unshielded, and stranded conductors or solid. The minimum conductor size, minimum number of conductors, UL type, voltage rating, etc. is also construction details that are provided.

Question : Is there a difference between a Listed and a Classified system?

Answer : The National Electrical Code (NEC) refers to Listed systems. However, UL refers to Classified systems for the fire protection methods. UL Classification complies with the definition of listed as detailed in NEC Article 100. For purposes of compliance with the NEC, the two types of certification are considered equivalent.

Question : Is fire rated cable installed to the NEC?

Answer : Fire rated systems are to be installed in accordance with all provisions of the National Electric Code, as amended by the details of each individual system (such as type of supports and distance between supports), the FHIT Guide Information and manufacturer requirements.

Question : Can any pulling lubricant be used with fire rated cables?

Answer : Pulling lubricant may be incompatible with the cable in fire conditions. If a pulling lubricant is tested, it will be described in the system.

Question : Why do some manufacture's require a box before going into arcing and sparking devices?

Answer : Combustion of all organic materials create vapors that can ignite in the presence of a spark when mixed with oxygen at the correct ratio. This may be an unlikely scenario, but it is conservative to use a box and seal the raceway going to an arcing or sparking device to exclude the vapors.

Question : Is there a difference between RHH and RHW fire rated cable?

Answer : Yes. Per Table 310.13 of the NEC, Type RHW can be used in dry or wet locations. RHH cable is limited to dry and damp locations only.
