

**Subject:** Common Lifeline RHW-2 Installation questions in FHIT 25C

**Overview:**

Lifeline® Power Cables have been qualified and listed to the demanding requirements of UL 2196, Tests for Fire Resistive Cables, and are UL Listed Type RHW-2 and RW90.

Lifeline® Power Cables meet various industry code requirements (NFPA 70, NFPA 101, NFPA 130 NFPA 502) for fire resistance according to UL Standard 2196 when selected and installed per applicable codes including federal, state, local and municipal rules, laws and regulations as well as Electrical Circuit Integrity System 25C (FHIT 25C) and TIS #301H - Manufacturer's Instructions. NFPA 502 can also be met when approved by an AHJ. Note that Authorities Having Jurisdiction (AHJ) should be consulted for approval prior to cable purchase and installation.

The current FHIT certification in the UL Fire Directory describes only the conditions which a fire rated assembly was tested and certified by UL, in accordance with the UL 2196 test standard. However, the creation of fire rated assemblies can draw upon multiple FHIT certifications for use in real-life installation conditions to create a more robust fire rated assembly. Common questions and answers are below:

*Q) How often do we need to tie into a junction box for cable support on horizontal runs?*

A) There is no requirement to tie into a junction box for cable support on horizontal runs beyond NEC recommendations.

*Q) How often do we need to tie into a junction box for cable support on vertical runs?*

A) NEC table 300.19 provides recommendations based on cable AWG size. However, based on the FHIT 25C requirements, the limit is every 36 feet before a fire rated support is used. The support may be any recognized method suitable for the purpose outside of the fire zone, an approved fire rated support or a support used in a fire rated enclosure within the fire zone.

*Q) Is there a specific junction box rating that needs to be used?*

A) While junction boxes are not included in the current FHIT Certification, we have UL Verification data, in accordance with UL 2196 testing, demonstrating 2 hour survivability in Hoffman NEMA 4X Stainless Steel boxes.

*Q) Do the junction boxes need to be wrapped in a fire protective material? If so, any recommendations that UL will approve for the install?*

A) If an Authority Having Jurisdiction approves UL VSR data supplied by the manufacturer for the Hoffman NEMA 4 X Stainless Steel boxes, then it would not require fire protective matting. If an AHJ approves other Stainless Steel NEMA 4X boxes as equivalent to the Hoffman enclosure, then it would not require fire protective matting. However, without AHJ approval of the above conditions, fire rated matting, as described in FHIT 9 as manufactured by 3M, can be used to make a Stainless Steel junction box, a fire rated enclosure for splices or terminations.

*Q) When piercing a wall, or ceiling, are there any specific issues that need to be addressed? If so, any recommendations on the materials required?*

A) A fire rated Fire Stop such as 3M FIP 1-STEP could be suitable for use. Through-penetration Fire Stop Systems, as described in System No. W-J-1231, are similar an FHIT where installation requirements are defined by the UL system. There are several UL systems describing how to use 3M FIP 1-Step to achieve an approved fire stop and more information can be found on the 3M website or the UL fire resistive directory for the system.