

## **Description of ECRIC Determination Request Inquiry:**

NYC Electrical Code Section 760.130(B)(1) states that PLFA cable can be installed exposed/in free air (not in a raceway), above 8ft from the floor. Within 8ft of the floor, PLFA cable must be installed in a raceway as per Article 342 (IMC), 344 (RMC), 358 (EMT) or 386 (Surface Metal Raceways).

NYC Electrical Code Section 760.131(A) states that PLFA cable in Mechanical Rooms, Elevator Rooms, Garages and Loading Docks shall be installed in a raceway as per Article 344 (RMC), within 8ft of the floor. Since there is no mention for above 8ft, you must refer to the previous section 760.130(B)(1) that allows free air above 8ft.

For mechanical rooms and elevator rooms having a floor area of less than 900 square feet, PLFA cable shall be installed as per Article 332 (MI Cable), 342 (IMC), 344 (RMC) or 358 (EMT).

In summary:

Mechanical rooms and Elevator Rooms 900 square feet and greater  
8ft and below - Must be in RMC  
Above 8ft - can be free air

Mechanical Rooms and Elevator Rooms less than 900 square feet  
8ft and below - Must be MI, or in IMC, RMC or EMT  
Above 8ft - Must be MI, or in IMC, RMC or EMT

However, on August 5<sup>th</sup>, 2015 there was an ECRIC determination that is in direct conflict with the above referenced NYC Electrical Code language. See below:

### Section 760.131 - (8/5/2015)

We are requesting interpretation on the following regarding fire alarm wiring in mechanical rooms:

1. Does NYC approved 150 degree fire alarm low voltage wiring for initiating and annunciation devices need to be installed in conduit above 8 foot in mechanical rooms under 900 square feet?
  2. Same question with mechanical room over 900 square feet?
1. Yes.
  2. Yes.

**We respectfully request a reconsideration on this and pose the following questions:**

1. Is it permissible for PLFA cable to be run in free air above 8ft in Mechanical Rooms and Elevator Rooms 900 sq. ft. and greater?
2. Is it permissible for PLFA cable to be run in free air above 8ft in Mechanical Rooms and Elevator Rooms less than 900 sq. ft. in area?

## Referenced Code Sections

### 2008 National Electrical Code

#### 760.130 Wiring Methods and Materials on Load Side of the PLFA Power Source.

**(B) PLFA Wiring Methods and Materials.** Power-limited fire alarm conductors and cables described in 760.179 shall be installed as detailed in 760.130(B)(1), (B)(2), or (B)(3) of this section and 300.7. Devices shall be installed in accordance with 110.3(B), 300.11(A), and 300.15.

Section 760.130(B) requires mechanical protection at splices and termination points. Because failure of a circuit often occurs at splices or termination points, this requirement offers more protection and strain relief for these cable connections.

**(1) Exposed or Fished in Concealed Spaces.** In raceway or exposed on the surface of ceiling and sidewalls or fished in concealed spaces. Cable splices or terminations shall be made in listed fittings, boxes, enclosures, fire alarm devices, or utilization equipment. Where installed exposed, cables shall be adequately supported and installed in such a way that maximum protection against physical damage is afforded by building construction such as baseboards, door frames, ledges, and so forth. Where located within 2.1 m (7 ft) of the floor, cables shall be securely fastened in an approved manner at intervals of not more than 450 mm (18 in.).

**(2) Passing Through a Floor or Wall.** In metal raceways or rigid nonmetallic conduit where passing through a floor or wall to a height of 2.1 m (7 ft) above the floor, unless adequate protection can be afforded by building construction such as detailed in 760.130(B)(1) or unless an equivalent solid guard is provided.

**(3) In Hoistways.** In rigid metal conduit, rigid nonmetallic conduit, intermediate metal conduit, or electrical metallic tubing where installed in hoistways.

*Exception: As provided for in 620.21 for elevators and similar equipment.*

### 2011 NYC Amendments to National Electrical Code

#### SECTION 760.130

Subsection 760.130(B) – Revise the last sentence to read as follows:

Devices shall be installed in accordance with Sections 110.3(B), 300.11(A) and 300.15 with all wiring supported independently from the building structure.

Subsection 760.130(B)(1) – Revise to read as follows:

**(1) Exposed or Fished in Concealed Spaces.** In raceway or exposed above 2.4m (8 ft.) on the surface of ceiling and sidewalls or fished in concealed spaces, cable splices or terminations shall be made in listed fittings, boxes, enclosures, fire alarm devices or utilization equipment. Where installed exposed, cables shall be supported at a maximum of 1.5m (5 ft.) spacing and installed in such a way that maximum protection against physical damage is afforded by building construction. Where located within 2.4m (8 ft.) of the floor, cables shall be installed in raceway as per Article 342, 344, 358 or 386.

Subsection 760.130(B)(2) – Revise to read as follows:

**(2) Passing Through a Floor or Wall.** In metal raceways where passing through a floor or wall to a height of 2.4m ( 8 ft.) above the floor, unless adequate protection can be afforded by building construction as per 760.130(B)(1) or unless an equivalent solid guard is provided.

FPN: Protection by building construction includes, but is not limited to, raised floors, shafts, telephone and communications equipment rooms and closets, and rooms used exclusively for fire alarm equipment.

Subsection 760.130(B)(3) – Delete the words “rigid nonmetallic conduit.”

Subsection 760.130(B)(4) – Add a new subsection 760.130(B)(4) to read as follows:

**(4) Terminations and Splices.** Terminations and splices shall be made with terminal blocks and in listed fittings, boxes, enclosures, fire alarm devices or utilization equipment. Splices shall be limited to locations where the conditions of installation require the use of splices. Splices and terminations in riser cables are prohibited except where made in fire alarm equipment terminal cabinets. Conductors shall be mechanical connections listed in accordance with UL 486 (2003) A & C or if soldered, conductors shall first be joined so as to be mechanically and electrically secure prior to soldering. Temperature rating of completed splices shall be equal to or exceed the temperature rating of the highest rated conductor.

## **SECTION 760.131**

Add a new section 760.131, to read as follows:

**760.131 Mechanical Execution of Work.** Installation shall conform to the following requirements:

**(A) Mechanical Rooms, Elevator Rooms, Garages and Loading Docks.** All wiring installed up to 2.4m (8 ft.) above the finished floor in garages, loading docks, mechanical rooms, and elevator rooms shall meet the installation requirements of Article 344.

*Exception: For mechanical rooms and elevator rooms having a floor area of less than 900 square feet, installation pursuant to Articles 332, 342, 344 or 358 is permitted without height limitation.*

**(B) Extinguishing Systems.** Extinguishing and suppression systems activated by automatic fire detection and using fire alarm cables shall be installed pursuant to Articles 332, 342, 344 or 358. Such systems shall include, but not be limited to, pre-action sprinkler, deluge sprinkler, water mist, clean air agent, Halon, range hood, CO<sub>2</sub>, and dry chemicals.

**(C) Installation.** Installation of raceways, boxes, enclosures, cabinets and wiring shall conform to the following requirements:

- (1) Covers of boxes, enclosures and cabinets shall be painted red and permanently identified as to use.
- (2) Penetrations through rated walls, ceilings and floors shall be fire stopped.
- (3) Raceways or wiring shall not penetrate the top of any control equipment cabinet or enclosure.
- (4) Raceways installed up to 2.4m (8 ft.) in stairways shall not reduce or obstruct required stairway radius or egress path.
- (5) Cables shall be secured by cable ties, straps or similar fittings designed and installed so as to not damage cables. Such fittings shall be secured in place at intervals