

Wildstar Farm intends to install lights in the indoor riding arena. The arena is unconditioned space similar to a garage. The footing is dust free.

The currently temporarily installed FEIT LED fixtures are damp and dust rated (documentation has been supplied).

<https://www.costco.com/Feit-4'-Linkable-LED-Shop-Light-2-pack.product.100410429.html>

The fixtures are designed to be hung or ceiling mounted. The hanging system in use is supplied by the manufacturer. The fixtures are largely made of plastic and have a 4 foot cord which has a two prong connector. All electrical components are entirely contained in plastic. Wildstar wishes to continue using these fixtures.

Wildstar understands that the electrical inspector has stated that these lights must have grounded plugs plugged into outlets near the fixtures to be used. A suggestion was made to replace the cord on the fixtures with a three-wire cord and routing the safety ground wire to something internal to the fixture.

This seems improper to us. Changing the fixture in this way would invalidate the UL rating of the fixture. Online discussion states that changing the fixture in as simple a way as replacing the manufacturers plug would turn it into an unlisted fixture and violate electrical code. Using an unrated fixture might also invalidate our insurance.

Upon taking a fixture apart we find that the power wires are soldered to a PC board making the suggested modification impractical.

If the interpretation that a grounded plug is required for these lights it seems to us that there is no circumstance where they could be used anywhere. Highly unlikely that a national brand would produce and UL list a fixture that is never code compliant.

From reading online materials it appears to us that the electrical code for cord connected luminaries was updated in 2017 to clarify that fixtures of this type are allowed, provided that the fixtures are listed. Condition 410.62(C)(1)(c) states that listed luminaries are specifically allowed and contains no requirement for grounded plugs.

From the MA electric code ammendments:

90.4. Revise the first paragraph to read as follows:

90.4 Enforcement. This Code shall be used by the authority enforcing the Code and exercising legal jurisdiction over electrical installations. The authority having jurisdiction of enforcement of the Code shall accept listed and labeled equipment or materials where used or installed in accordance with instructions included with the listing and labeling. The authority shall have the responsibility for deciding upon the approval of unlisted or unlabeled equipment and materials, and for granting the special permission contemplated in a number of the rules.

This discussion is in the online continuing education materials for electricians:

Code Change Summary: Revisions were made to clarify how specific luminaires can be cord-connected.

Some luminaires are designed to be cord-connected while others are permitted to be cord-connected. There is a difference between cord-connected versus cord-and plug-connected.

“Cord-connected” doesn’t necessarily mean an attachment plug cap is involved. A cord-connected luminaire refers to a hard-wired installation with no attachment plug. A cord-and plug-connected luminaire has an attachment plug that mates with a receptacle.

In the 2017 NEC revisions were made to make the section on cord-connected electric-discharge and led luminaires a bit easier to read. The previous code language was a bit tricky to understand but the new language seems to be a bit cleaner and easier to follow.

Some listed electric-discharge or led luminaires come from the factory with a cord-connection. They may or may not have an attachment plug. How they will be installed will dictate if an attachment plug will be required. Whichever method is used to connect the luminaire, one thing is common; the luminaire must be located directly below the outlet or busway, the cord must not be subject to strain or physical damage, and the cord must be visible for its entire length except at terminations.

2014 Code Language:

410.62(C) Electric-Discharge and LED Luminaires. *A luminaire or a listed assembly shall be permitted to be cord connected if the following conditions apply:*

(1) The luminaire is located directly below the outlet or busway.

(2) The flexible cord meets all the following:

- a. Is visible for its entire length outside the luminaire*
- b. Is not subject to strain or physical damage*

- c. *Is terminated in a grounding-type attachment plug cap or busway plug, or is a part of a listed assembly incorporating a manufactured wiring system connector in accordance with 604.6(C), or has a luminaire assembly with a strain relief and canopy having a maximum 152 mm (6 in.) long section of raceway for attachment to an outlet box above a suspended ceiling*

2017 Code Language:

410.62(C) Electric-Discharge and LED Luminaires. Electric discharge and LED luminaires shall comply with (1), (2), and (3) as applicable.

(1) Cord-Connected Installation. A luminaire or a listed assembly in compliance with any of the conditions in (a) through (c) shall be permitted to be cord connected provided the luminaire is located directly below the outlet or busway, the cord is not subject to strain or physical damage, and the cord is visible over its entire length except at terminations.

(a) A luminaire shall be permitted to be connected with a cord terminating in a grounding-type attachment plug or busway plug.

(b) A luminaire assembly equipped with a strain relief and canopy shall be permitted to use a cord connection between the luminaire assembly and the canopy. The canopy shall be permitted to include a section of raceway not over 150 mm (6 in.) in length and intended to facilitate the connection to an outlet box mounted above a suspended ceiling.

(c) Listed luminaires connected using listed assemblies that incorporate manufactured wiring system connectors in accordance with 604.100(C) shall be permitted to be cord connected.