



LUTZE Technical Overview

NFPA 79 Cable Requirements

NFPA 79 is the Electrical Standard for Industrial Machinery in the USA. The 2015 edition has once again implemented a number of significant updates which affect cable. The NFPA 79 is a standard published by the National Fire Protection Agency, the same agency that publishes the National Electric Code (a.k.a. NEC or NFPA 70).

The NFPA 79 has special provisions addressing safe wiring practices for industrial machinery such as machine tools. Article 12.9 was added to the 2012 edition, allowing the use of appliance wiring material (type AWM) to be used with industrial machinery again but is limited with special provisions. The use of such cable had been prohibited under the previous edition 2007, and this restriction had caused a lot hardship for many machine manufacturers, which is now resolved.

NFPA 79 still makes mainly references to listed cable. These cables carry an NRTL listed logo such as the “UL listed” logo. It should be noted that cables can have dual or multi ratings and carry both marks, UL recognized and UL listed along with other marks.

Permitted for all applications:   

Appliance Wiring Material is regulated by UL 758 and carries the recognized logo:

Since 2012 permitted for special applications:  

In order to use AWM type cable on industrial machinery and be compliant with NFPA 79, the cable must accommodate the provisions stated in article 12.9 “Special Cables and Conductors” of the NFPA 2015 edition.

It is sufficient to comply with one of the sections in sections 12.9.2.1 through 12.9.2.3 instead of meeting their requirements in combination. For example:

1. It is permissible to use AWM cable or conductors if part of a listed assembly.
2. Or it is permissible to use AWM cable or conductors if specified for use with approved equipment and in accordance with the equipment manufacturer’s instructions. One example would be a Servo Drive system with a cable assembly made per the Servo-Drive System Manufacturer’s specification and installed per the manufacturer’s instructions.
3. Or it is permissible to use AWM cable or conductors if compliant with 12.9.2.3 and the modifications as described. These modifications will allow those types of AWM cables which are suitable for industrial use by their nature. However, it will control the misuse of AWM cables which do not meet industrial application requirements, e.g. voltage rating, insulation thickness, oil resistance, etc.

All LUTZE AWM cables are designed for use in industrial environments and the AWM style and voltage rating is clearly marked on each cable jacket. However, for field installation it will still be safest to rely on cable that is UL listed and verified for the intended use. UL listed cable will make it easier to evaluate a machine in the field and will therefore remain a very important choice for most machine builders in the USA. UL listed cable will also eliminate the need for documentation that the use of AWM cable may require.

Please contact your LUTZE representative on questions regarding our offering on UL listed and UL recognized cable to help you be compliant with the latest standards for industrial machinery.

LUTZE offers many listed types, including MTW, TC-ER, PLTC and CM marks. Cables with these markings are considered listed types and are always permitted to be used in NFPA 79 compliant applications.