PROCESS INDUSTRY PRACTICES

TECHNICAL REVISION
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Electrical

PIP ELSWC03
Low Voltage Multiconductor Power and Control Cable Specification

PURPOSE AND USE OF PROCESS INDUSTRY PRACTICES

In an effort to minimize the cost of process industry facilities, this Practice has been prepared from the technical requirements in the existing standards of major industrial users, contractors, or standards organizations. By harmonizing these technical requirements into a single set of Practices, administrative, application, and engineering costs to both the purchaser and the manufacturer should be reduced. While this Practice is expected to incorporate the majority of requirements of most users, individual applications may involve requirements that will be appended to and take precedence over this Practice. Determinations concerning fitness for purpose and particular matters or application of the Practice to particular project or engineering situations should not be made solely on information contained in these materials. The use of trade names from time to time should not be viewed as an expression of preference but rather recognized as normal usage in the trade. Other brands having the same specifications are equally correct and may be substituted for those named. All Practices or guidelines are intended to be consistent with applicable laws and regulations including OSHA requirements. To the extent these Practices or guidelines should conflict with OSHA or other applicable laws or regulations, such laws or regulations must be followed. Consult an appropriate professional before applying or acting on any material contained in or suggested by the Practice.

This Practice is subject to revision at any time.

PUBLISHING HISTORY

March 1996	*Issued*	*March 2016*	*Complete Revision*
April 2005	*Complete Revision*	*September 2021*	*Technical Revision*
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1. Scope

This Practice provides requirements for low voltage power and control tray cable (Type TC) and metal-clad (Type MC) cable. This Practice describes the minimum technical requirements for fabrication, inspection, testing, and shipping of insulated copper cable. This Practice covers low voltage multiple conductor power and control tray cable and metal-clad cable.

2. References

Applicable parts of the following Practices and industry codes and standards shall be considered an integral part of this Practice. The edition in effect on the date of contract award shall be used except as otherwise noted. Short titles are used herein where appropriate.

2.1 Process Industry Practices (PIP)

– PIP ELSMC20 – *Low-Voltage AC Adjustable Speed Drive Specification*

2.2 Industry Codes and Standards

- American Society for Testing Materials (ASTM)
  - ASTM B3 – *Soft or Annealed Copper Wire*
  - ASTM B8 - *Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft*
  - ASTM B496 - *Compact Round Concentric-Lay-Stranded Copper Conductors*
- Canadian Standards Association (CSA)
  - C22.2 No. 131 – *Type TECK 90 Cable*
  - C22.2 No. 174 – *Cables and Cable Glands for use in Hazardous Locations*
- Institute of Electrical and Electronics Engineers (IEEE)
  - IEEE 1202 - *IEEE Standard for Flame-Propagation Testing of Wire and Cable*
- Insulated Cable Engineers Association (ICEA)
  - ICEA S-73-532 (NEMA WC 57) - *Standard for Control, Thermocouple Extension, and Instrumentation Cables*
  - ICEA S-95-658 (NEMA WC 70) – *Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy*
- National Electrical Manufacturers Association (NEMA)
  - NEMA WC 26 - *Binational Wire and Cable Packaging Standard*
- National Fire Protection Association (NFPA)
  - NFPA 70 - *National Electrical Code (NEC)*
- Underwriters Laboratories (UL)
  - UL 1277 - *Standard for Electrical Power and Control Tray Cables with Optional Optical-Fiber Members*
  - UL 1569 - *Standard for Metal-Clad Cables*
  - UL 2225 - *Standard for Cables and Cable-Fittings for Use in Hazardous (Classified) Locations*