

## 1 Scope

This specification establishes the materials, design, marking, installation, inspection, and performance requirements of ILSCO's pre-insulated connections. Products included within this connector system are NIMBUS®, NIMBUS®4FLEX, NIMBUS®4FLEX SHAPES, NIMBUS®4FLEX MOTORS, and NIMBUS®4FLEX 2X.

## 2 Materials

- 2.1 All pre-insulated mechanical connections shall use ILSCO's NIMBUS®, NIMBUS®4FLEX, NIMBUS®4FLEX SHAPES, NIMBUS®4FLEX MOTORS, or NIMBUS®4FLEX 2X connectors.
- 2.2 Connector bars shall be manufactured from high strength aluminum in compliance with ASTM B221.
- 2.3 Connector bars shall be plated with electro-tin plating in compliance with ASTM B545 and B571.
- 2.4 Connector insulation shall be manufactured from high dielectric strength black plastisol to proprietary requirements.
- 2.5 Connector safety caps shall be manufactured from PVC.
- 2.6 All connector ports shall be filled with De-Ox® oxide inhibiting compound.
- 2.7 Connectors shall be RoHS compliant.

## 3 Design

- 3.1 Connectors shall be capable of terminating conductors sized from 14 AWG to 750 kcmil.
- 3.2 Connectors shall be dual rated for both copper and aluminum conductors at 90-deg C.
- 3.3 Connectors shall be range taking; accepting various conductor sizes.
- 3.4 Connectors shall have an insulation rating of 600V.
- 3.5 All connector wire-way openings shall be provided with removable and pre-installed safety caps.

- 3.6 All connector screw-way openings shall be provided with removable and pre-installed safety caps.
- 3.7 Wire-way and screw-way caps shall be color coded for visual indication of conductor types acceptable for use.
- 3.8 All insulation wire-way openings shall be precision machine trimmed evenly for safety and professional appearance.
- 3.9 All mechanical wire binding screws shall be designed to withstand 160% of the recommended installation torque.

## 4 Marking

- 4.1 All connectors shall be clearly marked with the following information:
  - 4.1.1 ILSCO or ILSCO's inspection symbol, ①
  - 4.1.2 Catalog number
  - 4.1.3 Conductor sizes accommodated
  - 4.1.4 Assigned tightening torque values on connectors approved with flexible conductors
  - 4.1.5 Conductor types approved for use
  - 4.1.6 Voltage rating
  - 4.1.7 Maximum operating temperature
  - 4.1.8 Certification marking:
    - *UL Listing mark, and*
    - *CSA Certification mark*

## 5 Installation

- 5.1 Installation of connectors shall be made in accordance with information sheets provided with the connectors and available at [www.ilsco.com](http://www.ilsco.com).
- 5.2 Information sheets shall contain the required UL and CSA approved torque values.
- 5.3 Connectors shall be capable of installation during all types of weather events, humidity levels, and field conditions using standard industry tools and without special safety precautions or procedures.

## 6 Inspection

- 6.1 Connector marking information shall be legible for post- installation inspection
- 6.2 NIMBUS® connectors shall have black safety caps to visually indicate approved use with solid and stranded class B/C conductors.
- 6.3 NIMBUS®4FLEX, NIMBUS®4FLEX SHAPES, NIMBUS®4FLEX MOTORS, and NIMBUS®4FLEX 2X connectors shall have blue safety caps to visually indicate approved use with solid, stranded class B/C, and flex class H, I, K, M, and DLO conductors.
- 6.4 Connections on dual-entry connectors can be inspected by temporarily removing the safety cap on the opposite side of a conductor entry.

## 7 Performance

- 7.1 Connectors shall be Listed by Underwriters Laboratories (UL) per UL 486A-486B Standard for Wire Connectors.
- 7.2 Connectors shall be Certified by either Canadian Standards Association (CSA) or UL per CSA C22.2 No. 65.
- 7.3 NIMBUS® shall be UL Listed, per 7.1, and CSA Certified, per 7.2, with solid copper and aluminum conductors and stranded class B/C copper and aluminum conductors.
- 7.4 NIMBUS®4FLEX, NIMBUS®4FLEX SHAPES, NIMBUS®4FLEX MOTORS, and NIMBUS®4FLEX 2X shall be UL Listed, per 7.1, and CSA Certified, per 7.2, with solid copper and aluminum conductors , stranded class B/C copper and aluminum conductors, and flex class H, I, K, M, and DLO copper conductors.
- 7.5 Connector insulation clarity, texture, and color shall not be affected by prolonged exposure to 150-deg F and 100% humidity.

- 7.6 Connector insulation shall not fracture after being exposed to -18-deg C and edge dropped from heights of five feet and stressed per ASTM Flex Test.
- 7.7 Connector insulation shall withstand 10,000 volts per ASTM D149
- 7.8 Connector insulation shall meet flammability rating per UL 746C with a glow-wire temperature of 750-deg C.
- 7.9 Connectors shall be UV resistant and have an insulation rating of 600V.