

SECTION 26 05 14 – MEDIUM VOLTAGE CABLE TERMINATIONS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Interior Cable Terminations.
- B. Exterior Cable Terminations.
- C. Splices.
- D. Load break elbow.

1.2 REFERENCES

- A. American National Standards Institute (ANSI):
 - 1. 386 – Separable Insulated Connector Systems.
- B. Institute of Electrical and Electronics Engineers (IEEE):
 - 1. 48 – Standard Test Procedures and Requirements of High Voltage Alternating Current Cable Terminations.
 - 2. 386 – Separable Insulated Connector Systems for Power Distribution Systems Above 600 Volts.
 - 3. 400 – Guide for Making High Direct Voltage Tests on Power Cable Systems in the Field.
 - 4. 592 – Standard for Exposed Semiconducting Shield on Premolded High Voltage Cable Joints and Separable Insulated Connectors.
- C. International Electrical Testing Association (INETA):
 - 1. ATS – Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- D. Underwriters Laboratories, Inc. (UL):
 - 1. UL 486A Wire Connectors and Wiring Lugs for Use with Copper Conductors.

1.3 SUBMITTALS

- A. Product data: Submit manufacturer's technical product data including, but not limited to, specifications, rated BIL, insulation class, maximum and minimum cable conductor diameter, maximum and minimum cable insulation diameter, maximum design voltage to ground, and termination class.
- B. Shop drawings: Submit manufacturer's dimensional drawings of all terminations indicating location of cable connections, required clearances, and method of field assembly.
- C. Maintenance Data: Submit maintenance data and parts list for each splice and termination type. Include that data, product data, and shop drawings in maintenance manual in accordance with requirements of Division 1.

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- D. Factory Test Data: Provide factory test data certified by Professional Engineer that test results fulfill specified requirements. All routine and quality assurance tests performed by the manufacturer, including dielectric testing, shall be submitted. Results of the above tests shall be submitted with final drawings in the form of certified test reports.

1.4 PROJECT RECORD DOCUMENTS

- A. Accurately record all splice locations.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this Section with minimum ten years documented experience.
- B. Installer: Company specializing in installing Products specified in this Section with minimum three (3) years documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Accept splices, terminations and accessories on site in manufacturer's packaging. Inspect for damage.
- B. Store and protect in accordance with manufacturer's instructions.
- C. Protect from weather. Provide adequate ventilation to prevent condensation.

1.7 PROJECT CONDITIONS

- A. Verify splice and termination locations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Elastimold.
- B. Cooper Power Systems.
- C. Raychem.

2.2 SPLICES

- A. Types: Compatible with the cable materials.
- B. Connectors: Compression type as recommended by cable or splicing kit manufacturer for the application.
- C. Splicing and Terminating Kits: As recommended by the manufacturer in writing for the specific sizes, ratings, and configurations of cable conductor, splices, and terminations specified. Kits shall contain all components required for a complete splice or termination including detailed instructions and shall be the

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product of a single manufacturer. Complete splices and terminations shall provide insulation equivalent to the insulation class of the cable it connects.

- D. Premolded ethylene propylene diene monomer (EPDM) splice body kit with cable joint sealed by interference fit of mating parts and cable.
- E. Minimum Ratings:
 - 1. 15kV Splice:
 - a. Basic Impulse Level – 95 kV.
 - b. Withstand 34 kV, 60 Hz, 1 minute and 53 kV, DC, 15 minutes.
 - c. Corona: 11 kV extinction.

2.3 TERMINATIONS – SHIELDED CONDUCTORS

- A. Insulation class of shielded cable terminations shall be equivalent to that of the cable and include shield ground strap.
- B. At all termination points of the new shielded power conductors, stress relief cones shall be installed. Stress relief cones shall be installed in strict accordance with the manufacturer's instructions and recommendations for the type of shielded power conductors used.
- C. Stress relief cones shall be of the pre-molded type, designed to exactly fit the cable on which it is being installed.
- D. The Contractor shall be responsible to obtain the correct size for the cable used and shall verify the requirements needed at all new and existing termination points.
- E. Stress cones shall be Elastimold #35MSCI Series (15/25/35kV rating) or approved equal with following minimum ratings:
 - 1. Basic Impulse Level - 200 kV.
 - 2. Withstand 90 kV, 60 Hz.
 - 3. Corona: 30 kV extinction.
- F. Associated cable grounding devices shall be Elastimold 20MA Series or approved equal.

2.4 CONNECTIONS/JUNCTIONS

- A. This Contractor shall furnish and install disconnectible cable connections, elbows, junctions and related accessories in quantities and material as required.
- B. The disconnectible cable connectors shall be fully shielded and shall be designed for energized operation. The disconnectible cable connectors shall be made for use with shielded cable and shall be made for the following ratings:
 - 1. 15kV Splice:
 - a. Phase to Ground Voltage: 8.3kV.
 - b. Maximum Continuous Current: 200 amp.
 - c. Fault Close Amps, RMS, SYM, 0.17: 10,000.
 - d. Basic Impulse Level - 95 kV.

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- e. Withstand 34 kV, 60 Hz, 1 minute and 53 kV, DC, 15 minutes.
- f. Corona: 11 kV extinction.
- g. Similar to Elastimold 163 Series disconnectible load-break cable connector.

2.5 ACCESSORIES

- A. Provide the appropriate support brackets for terminations.
- B. Provide ground leads for all splices and terminations for grounding the cable shield.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that the proper cable has been installed and is ready to be terminated and/or spliced.

3.2 PREPARATION

- A. Clean all cable ends.

3.3 INSTALLATION

- A. Install terminations, splices and accessories in accordance with manufacturer's instructions.
- B. Ground shields of shielded cable at terminations, splices, and separable insulated connectors. Ground metal bodies of terminators, splices, cable and separable insulated-connector fittings, and hardware.
- C. Ground all ground straps using minimum #2 copper ground.

END OF SECTION 26 05 14