



SECTION 26 05 13 - MEDIUM-VOLTAGE CABLES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Medium voltage cable.
 - 2. Cable terminations.
 - 3. Fireproofing tape.
 - 4. Underground cable markers.

1.2 REFERENCES

- A. Institute of Electrical and Electronics Engineers
 - 1. IEEE 48 – Standard Test Procedures and Requirements for Alternating Current Cable Terminations 2.5kV thru 765kV.
 - 2. IEEE C2 – National Electrical Safety Code.
- B. National Electrical Manufacturers Association
 - 1. NEMA WC 74 – 5-46kV Shielded Power Cables for Use in the Transmission and Distribution of Electrical Energy.

1.3 SUBMITTALS

- A. Product Data: Submit for cable, terminations, and accessories.
- B. Test Reports: Indicate results of cable test in tabular form and in plots of current versus voltage for incremental voltage steps, and current versus time at 30 second intervals at maximum voltage.

PART 2 - PRODUCTS

2.1 MEDIUM VOLTAGE CABLE

- A. Manufacturers:
 - 1. **The Okonite Company.**
 - 2. **General Cable.**
 - 3. **Southwire.**
- B. Voltage: 5, 8, 15, and 35 kV.



- C. Insulation Level: 133 percent of operating voltage.
- D. Cable Continuous Operating Temperature Rating: MV-105.
- E. Configuration: Single conductor.
- F. Conductor Material: Copper.
- G. Conductor Construction: Compact stranded.
- H. Conductor Shield: Metal Tape.
- I. Insulation: Ethylene Propylene Rubber (EPR).
- J. Cable Jacket: Sunlight resistant PVC or Chlorosulfonated polyethylene, CPE.

2.2 CABLE TERMINATIONS

- A. Manufacturers:
 - 1. 3M.**
 - 2. Cooper.**
 - 3. Thomas & Betts.**
- B. Location: Indoor or Outdoor.
- C. Conductor Quantity: Single core.
- D. Type: Dual extrusion thick wall heat shrink.

2.3 FIREPROOFING TAPE

- A. Manufacturers:
 - 1. 3M.**
 - 2. Plymouth Rubber Co.**
- B. Product Description: Flexible, conformable fabric, coated on one side with flame retardant, flexible polymeric or chlorinated elastomer. Non-corrosive to and compatible with cable sheaths jackets. Does not support combustion.
- C. Width: Approximately 3 inches.
- D. Thickness: Not less than 0.03 inch.
- E. Weight: Not less than 2.5 pounds per square yard.



2.4 UNDERGROUND CABLE MARKERS

- A. Trace Wire: Magnetic detectable conductor, red colored plastic covering, imprinted with "Medium Voltage Cable" in large letters.

2.5 CABLE IDENTIFICATION

- A. Colored Conductor Tape for Phases: Yellow colored, self-adhesive vinyl tape not less than 3 mils thick by 1 inch wide; 1 stripe for the Phase A conductor, 2 stripes for the Phase B conductor, 3 stripes for the Phase C conductor. Tape shall be located at all terminations, splices and pull boxes.
- B. Metal Tags: Brass with ¼ inch embossed legend, punched for use with self-locking nylon tie fastener. Tags shall be located at all terminations, splices and pull boxes. Legend shall include the feeder circuit breaker identifier and phase.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Use swab to clean conduits and ducts before pulling cables.

3.2 EXISTING WORK

- A. Remove abandoned medium-voltage cable.
- B. Maintain access to existing medium-voltage cable and other installations remaining active and requiring access. Modify installation or provide access panel.

3.3 INSTALLATION

- A. Avoid abrasion and other damage to cables during installation.
- B. Use suitable manufacturer approved lubricants and pulling equipment.
- C. Sustain cable pulling tensions and bending radii below manufacturer's recommended limits.
- D. Ground cable shield at each termination and splice.
- E. Install cables in manholes along wall providing longest route.
- F. Arrange cable in manholes to avoid interference with duct entrances.



3.4 FIREPROOFING

- A. Apply fireproofing tape to cables when installed in manholes, cable rooms, pull boxes, or other enclosures.
- B. Smooth out irregularities, at splices or other locations, with insulation putty before applying fireproofing tape.
- C. Apply fireproofing tape tightly around cables spirally in half-lapped wrapping or in butt jointed wrapping with second wrapping covering joints first.
- D. Extend fireproofing 1 inch into conduit or duct.
- E. Install tape with coated side toward cable.
- F. Install random wrappings of plastic tape around fireproofing tape to prevent unraveling.
- G. Install fireproofing to withstand a 200 Ampere arc for 30 seconds.

3.5 FIELD QUALITY CONTROL

- A. Inspect exposed cable sections for physical damage.
- B. Inspect cable for proper connections.
- C. Inspect shield grounding, cable supports, and terminations for proper installation.
- D. Inspect and test in accordance with NETA ATS.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

- A. Protect installed cables from entrance of moisture.

END OF SECTION 26 05 13