conEdison

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
4 IRVING PLACE
NEW YORK, NY 10003

DISTRIBUTION ENGINEERING

DISTRIBUTION EQUIPMENT
AND
OVERHEAD STANDARDS AND PLANNING

SPECIFICATION EO-1100
REVISION 11
July 2019

EFFECTIVE DATE:
SEPTEMBER 1, 2019

SEALING OF SERVICE DUCTS, ENTRANCES, AND BUS OPENINGS IN ELECTRICAL DISTRIBUTION STRUCTURES

FILE: CONSTRUCTION STANDARDS MANUAL NO. 3, SECTION NO. 42
CABLE PULLING FIELD MANUAL NO. 3, SECTION NO. 4

TARGET AUDIENCE	**DISTRIBUTION ENGINEERING** **REGIONAL ENGINEERING** **REGIONAL CONSTRUCTION**
NESC REFERENCE	**SECTION 322**

TABLE OF CONTENTS

1. PURPOSE 3
2. REGIONS APPLICABLE 3
3. SAFETY AND ENVIRONMENTAL GUIDELINES 3
4. GENERAL INFORMATION 3
5. APPLICATION OF DUCT SEALING MATERIAL 4
6. SEALING PROCEDURE 4
7. REFERENCE SPECIFICATIONS 5

1.0 PURPOSE

This specification provides guidelines on locations where duct sealing is required, and procedures for duct sealing in order to maintain a water and gas tight seal.

2.0 REGIONS APPLICABLE

All electric operations regions.

3.0 SAFETY AND ENVIRONMENTAL GUIDELINES

3.1. All field personnel handling or installing duct sealing materials shall use all proper personal protective equipment. Approved hand cleaners shall be used to clean up after work is completed.

3.2. Approved mechanical ventilation shall be used in the structure prior to and during application of foam or compound duct sealing materials. Ventilation is not required during mechanical duct sealing

3.3. Duct sealing within unit substation switchgear requires that the feeder be de-energized and grounded in accordance with Con Edison's "General Instructions Governing Work on System Electrical Equipment" handbook.

3.4. Remnants of duct sealing compounds or foams used by Company field personnel shall not be left in the structure after work is completed. Precautions should be taken to prevent any sealing compound or foam material from adhering to cables or equipment housed in the structure. All duct sealing materials shall be "faced-off" with the wall.

4.0 GENERAL INFORMATION

4.1. Sealing against water and gas penetration is required in service duct(s) and bus opening(s) in structures housing distribution system electrical equipment. Application of sealing material prevents flooding of equipment, and water, gas penetration into customer's premises and/or service equipment.

4.2. All initial duct sealing required in this specification shall be installed by company personnel. Ducts located within customer premises shall be maintained by the customer.

5.0 APPLICATION OF DUCT SEALING MATERIAL

5.1. Type of Sealing Material Used: The choice of the sealing material used will depend on the water pressure encountered at the particular location. For normal conduit depth, ordinary compounds shall be used. For deeper conduit installations, or heads of water pressure greater than 5 feet, foams or mechanical seals shall be applied according to purchase specification EO-100023.

5.2. Locations to be Sealed: Water and gas tight seals shall be applied at the following locations:

5.2.1. At both ends of all ducts entering transformer manholes or vaults from a street or private property duct system.

5.2.2. At both ends of ducts between network vaults.

Exception: Water and gas tight seals are not required in a duct if the duct length is less than 2 feet, and other means of gas or water migration exist, such as weep holes, floor penetrations, etc.

5.2.3. At both ends of underground service pipes or conduits, including riser pipes connecting to underground services.

Exception: Services to outdoor meters do not require duct sealing inside the company structure.

5.2.4. At the ends of all ducts from station manhole to the unit substation switchgear. Any spare ducts from the station manhole to the unit substation switchgear shall be plugged with a molded plastic plug that properly fits the duct diameter in both the manhole and the switchgear cubicle.

6.0 SEALING PROCEDURE

6.1. Service Ducts and Entrances

All cable and duct surfaces shall be cleaned. Water should not be allowed to flow through the duct while proper curing of the sealing material is achieved. If running water is present, follow steps described in specification EO-6217-C for additional measures. Follow all duct sealing material application steps described in specification EO-6217-C.

6.2. Bus Openings

To seal bus openings between vault compartments, the joints between the bus and insulating supports as well as the joints between the supports and the surrounding areas shall be sealed as described in Paragraph 5.2.2.

7.0 REFERENCE SPECIFICATIONS

EO-3584-C	Method of Sealing Bare Neutral in Service Cables at Customers end of Service Duct.
EO-6208-C	Customers Electrical Service Installation Buildings with Basements at Property Line Indoor Metering.
EO-6210-B	Property Line Splice Box Requirements for Buildings Back of Property Line.
EO-6214-C	Customers Electric Service Installation in Building with Sub - sidewalk Space Outside of Property Line Indoor Metering.
EO-6217-C	Method of Sealing Phase Grouped Service Cable and Conduit.
EO-8302-B	Primary and Secondary Cable Risers.
EO-100023	Purchase Recommendation for Duct Sealing Compounds.

Jane Shin (Signature on File)
Jane Shin,
Department Manager
Distribution Equipment

J. Attard

Kevin Oehlmann (Signature on File)
Kevin Oehlmann
Section Manager
Overhead Standards and Planning

O. Chilaka

REVISION NO. 11:	**FILE:**
Added NESC reference; Revised service duct sealing requirements in Paragraph 5.2; Reorganized sections into “Safety” and “General” paragraphs.	CONSTRUCTION STANDARDS MANUAL NO. 3, SECTION NO. 42. Field Manual No.3, Cable Pulling Section No. 4 – Sealing of Duct Field Manual No. 5, Vault Installation Section No. 2. Field Manual No. 11 & 12, Subway Construction Section No. 1.