3M

Cable Grounding Kit 2252

Data Sheet

Product Description

The 3M™ 2252 Cable Grounding Kit provides a simple, reliable and secure method for grounding and jacket resealing of direct buried distribution cables. The kit is designed for use with jacketed concentric neutral (JCN) power cables ranging in size from 2 to 4/0 AWG, rated through 35 kV. The kit can be used for grounding a primary neutral for at least every 1320 ft. (1/4 mile) per Rural Utilities Service (RUS) Bulletin 83-1.

Kit Contents

Each kit contains sufficient quantities of the following materials to make one jacketed cable ground connection:

- 1 roll Scotch® Rubber Mastic Tape
- 1 roll Scotch® Super 33+ Vinyl Plastic Electrical Tape
- 1 ea. Tin plated copper "C-tap" connector
- 1 ea. Tin plated copper braid (10 in.)
- 1 ea. Constant force spring ground connector
- 1 ea. Mastic sealing strip
- 1 ea. Instruction sheet

Features

- **Constant Force Spring Connection**
  - an easy to install, reliable, mechanical connection
  - withstands 10,000 Amps for more than 5 cycles
  - fits a wide range of cable sizes, 2-4/0 AWG, rated through 35 kV
- **Rubber-Mastic Sealing Tape**
  - a conformable and resilient tape with good adhesive properties to form a positive resealing of the cable jacket
  - suitable for direct burial

Applications

To ground and reseal jacket of buried primary distribution class cables:

- For grounding and jacket resealing of buried primary distribution class cables for at least every 1320 ft. (1/4 mile) per Rural Utilities Service (RUS) Bulletin 83-1.
- For use on jacketed concentric neutral (JCN) cable
- For use with direct buried cable installation
- For cable sizes 2 to 4/0 AWG
- For cables rated through 35 kV

Specifications

• Product
(Open specification)

The grounding kit must provide a reliable method for electrically grounding the neutral of jacketed concentric neutral (JCN) power cables. The grounding connector must be a mechanical, solderless type. The kit shall provide for jacket resealing that is suitable for direct burial installation.

• Engineering/Architectural
(Closed specification)

Grounding of jacketed concentric neutral (JCN) primary distribution cables shall be done in accordance with the instructions included with the 3M 2252 Cable Grounding Kit, for cables sized 2 to 4/0 AWG, rated through 35 kV.

Performance Tests

A. Load Cycling Test

15 kV, 1/0 Aluminum, jacketed concentric neutral cable was used. The grounding circuit was current cycled for 1 hr. on and 1 hr. off, at 150 Amps. The constant force spring and connector temperatures were monitored. The test results indicate stable operation after cycling, with no significant changes in the temperature levels.

B. Fault Current Capability

Fault current tests indicate the ground connections will withstand fault currents of 10,000 Amps for more than 5 cycles.

C. Water Seal Test

Completed ground connections were subjected to sealing evaluation. The specimens were thermal cycled in water baths at 25˚C and 90˚C. The total test time of 336 hrs. revealed no significant change in the insulation resistance. These results surpass the requirements of U.L. 486D "Standard For Insulated Wire Connectors for Use With Underground Conductors," paragraph 7.1, insulation resistance, and paragraph 8.1, dielectric voltage withstand.

D. Mastic Stability Test

Test for thermal stability demonstrated that the mastic sealing strip softened, but retained it original sealing position when placed in an oven at 105˚C for 16 hrs.

Installation Techniques

Complete installation instructions for installing the 3M 2252 Cable Grounding Kit are packed into each kit. The following is a summary of these instructions:

1. Prepare the cable by removing a 2-in. section of the cable jacket. (Figure 1)
2. Crimp the copper braid to the ground wire using the "C-tap" connector. (Figure 1)
3. Form a moisture seal around ground wire using the Mastic Sealing Strip. (Figure 2)
4. Connect copper braid to the cable shield using the constant force spring. (Figure 3)
5. Seal the complete assembly using the rubber mastic tape. (Figure 4)
6. Overwrap the rubber mastic tape with Scotch® Super 33+ Vinyl Electrical Tape. (Figure 5)

Shelf Life

Components within the kit are stable under normal storage conditions. Normal stock rotation practices are recommended. The rubber mastic tape and mastic sealing strip have a 5-year shelf life, and are not impaired by freezing or heated storage, unless the point of flow is reached, preventing removal from the package.

Availability

3M 2252 Cable Grounding Kits are available from your local authorized 3M electrical distributor. The kits will accommodate concentric neutral cables with sizes ranging from 2 to 4/0 AWG, rated through 35 kV.

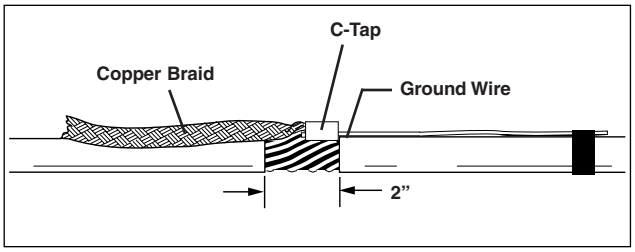

Figure 1

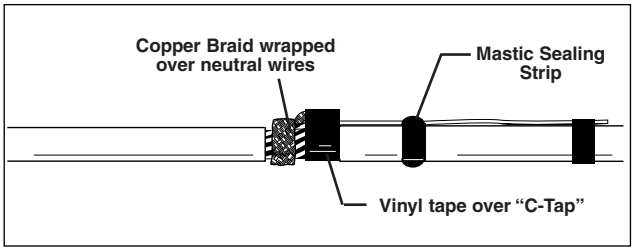

Figure 2

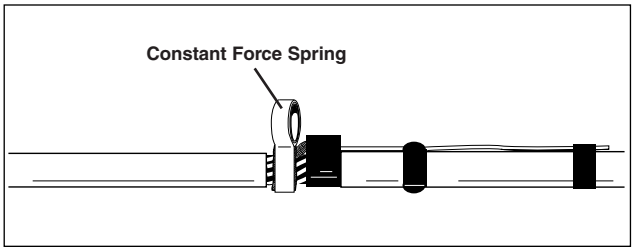

Figure 3

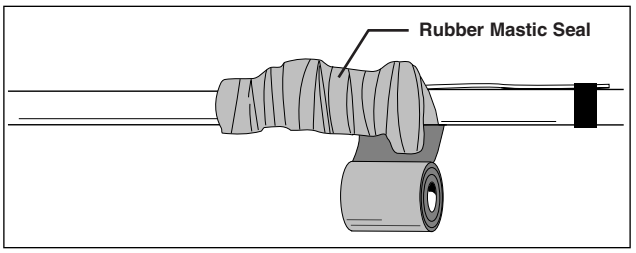

Figure 4

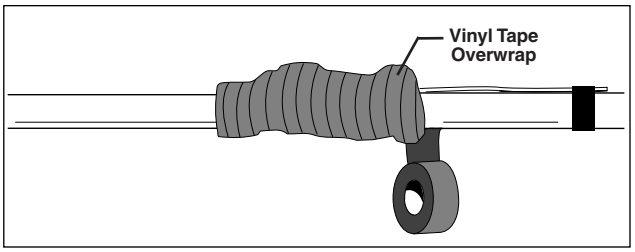

Figure 5

3M

Electrical Products Division

6801 River Place Blvd.
Austin, TX 78726-9000
www.3M.com/elpd

Litho in USA