

3MTM Mining Cable Splice Kits, 3100 Series

Data Sheet

August 2009

Description

3MTM Mining Cable Splice Kits, 3100 Series are used to splice flexible power cables (primarily mining types) rated from 600 Volts to 15 kV. The cable types which can be spliced using these kits, include flat and round W, G, W-GC, G-GC, SHD-GC, MPF, and MPF-GC.

The tapes in the kits can be used to splice conductor sizes ranging from 6 AWG up to 1/0 kcmil (14 to 50 mm²). The instructions cover cable up to 500 kcmil (250 mm²); however, additional tapes will be needed. The Scotch[®] Heavy Duty Mining Tape 31 has excellent resistance to moisture and abrasion, along with its MSHA approved flame resistance. Each kit includes most of the tape materials necessary to make one complete splice. Additional materials may be needed for larger conductor sizes. All kit tapes are sold separately. In some cases, Scotch[®] Glass Cloth Electrical Tape 27 or 69 may be substituted for use over the connector. Check the kit instructions for this option.

The splices can be used with standard Copper (Cu) in-line compression (crimp type) connector, and can be used for size transitions within the kit size range. They are designed to exceed minimum industry test standards for the kit's designed voltage class.

Kit Contents

- Scotch[®] Heavy Duty Mining Tape 31
- Scotch[®] Linerless Rubber Splicing Tape 130C
- 3MTM TemflexTM Vinyl Electrical Tape 1700P
- Scotch[®] Rubber Mastic Tape 2228*
- Scotch[®] Electrical Shielding Tape 24**
- Scotch[®] Electrical Semi-Conducting Tape 13
- 3MTM Cable Cleaning Kit CC-2-Dry
- Instruction Booklet

* Not in 3100 or 3104

** Not in 3100

Agency Approvals, Self Certifications

The kits meet the MSHA requirements of Part 7, Subpart K of Title 30, Code of Federal Regulations (CFR). The Pennsylvania and MSHA approval number that will appear on the exterior of the mining tape is P-07-KA08005-MSHA.



3M™ Mining Cable Splice Kits, 3100 Series

Features

- High quality tapes - for demanding flexible cable application
- Easy installation - simply rebuild the layers of the cable using compatible tapes
- Complete kit – includes tapes that match the cable construction

Applications

For splicing flexible power cable rated from 600 V to 15 kV:

- For in-line splicing
- For power feeder circuits
- For use with standard in-line crimp or parallel (crow's foot) connectors
- For repair and splicing of mine conduit

Physical and Electrical Properties

3M™ Mining Cable Splice Kits, 3100 Series can be used on cables with a rated operating temperature of 90°C, and an emergency overload rating of 130°C. A splice constructed using the 3103 kit is rated up to 15 kV. The current rating of the splice meets or exceeds the current rating for the cables on which it is installed.

Splice Selection Table

Kit Number	Voltage Class	Conductor Size Range
3100	600 V – 2 kV	6 AWG – 1/0 AWG* (14 – 50 mm ²)
3103	5 – 15 kV	6 AWG – 1 AWG* (14 – 38 mm ²)
3104	2 kV	6 AWG – 1/0 AWG* (14 – 50 mm ²)

***Cables up to 500 kcmil (250 mm²) will require the use of additional tapes**

Typical Dimensions (Installed Splice)

Kit Number	Typical Length Inches (cm)
3100 Series	30 (76,2)

NOTE: Overall splice diameters will vary according to cable type and cable insulation diameter. Splice diameter may be slightly larger than the cable diameter, dependant on the amount of mining tape build up.

Typical Physical and Electrical Properties

See individual tape Data Sheets

Specifications

Open Specification

For splicing of flexible power cables rated up to 15 kV, including the following cable types, flat and round: W, G, W-GC, G-GC, SHD-GC, MPF and MPF-GC.

3M™ Mining Cable Splice Kits, 3100 Series

Engineering/ Architectural Specifications

Closed Specification

3M™ Mining Cable Splice Kits, 3100 Series are used for splicing of flexible power cables rated up to 15 kV, including the following cable types, flat and round: W, G, W-GC, G-GC, SHD-GC, MPF and MPF-GC. Splicing with primary conductor sizes ranging from 6 AWG to 500 kcmil (14 – 250 mm²), shall be performed in accordance with the instructions provided with the 3M™ Mining Cable Splice Kits, 3100 Series.

Installation

Detailed instructions for installing the 3100 series used to splice flexible power cables are included with each kit. (Photos available from instruction video photos)

1. Prepare cables using standard procedures.
2. Taper the cable jacket and phase insulation ends.
3. Install in-line compression (crimp) or parallel overlap connector.
4. Apply phase insulation and/or shielding tapes.
5. Connect ground wire, if in cable.
6. Rebuild cable jacketing.

Shelf-Life & Storage

Splice kits 3100 series have a 5-year shelf life from the date of manufacture when stored in humidity controlled storage between 50 & 80F (10 & 27C) and <75% RH.

Availability

Splice kits 3100 series are available to splice up to 15 kV flexible power cables. The connectors must be ordered separately; standard dimension Copper (Cu) compression (crimp type) or parallel connectors are suitable for use with these splice kits. These kits are available from your local authorized 3M electrical distributor.

Important Notice

All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product which are not contained in 3M's current publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.

Warranty; Limited Remedy; Limited Liability:

This product will be free from defects in material and manufacture at the time of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.**

3M, Scotch and Temflex are trademarks of 3M Company.



Electrical Markets Division
6801 River Place Blvd.
Austin, TX 78726-9000
800 245 3573
FAX 800 245 0329
www.3M.com/electrical

Please recycle.
© 3M 2009 All rights reserved.
78-8127-6892-3 B