

TITLE: Application Procedure for Approval of Electric Cables, Signaling Cables and Splice Kits, Including the Splice Kit Option**MSHA Mine Safety and Health Administration, Approval & Certification Center**

1.0 PURPOSE

This document establishes a Mine Safety and Health Administration (MSHA) Standard Application Procedure (SAP) for the Approval of Electric Cables, Signaling Cables, and Splice Kits (including a Cable Jacket Repair option) under 30 CFR, Part 7, Subparts A & K. Its use is voluntary.

2.0 SCOPE

These procedures apply to all applications for Approval of Electric Cables, Signaling Cables, and Splice Kits under 30 CFR, Part 7, Subparts A & K, and is voluntary.

3.0 REFERENCES

- 3.1. Approval and Certification Center (A&CC) Cancellation Policy (APOL 1009).
- 3.2. Code of Federal Regulations (30CFR) Part 7, Subparts A & K.

4.0 DEFINITIONS

- 4.1. Cable Jacket Repair - A method using the materials of a MSHA approved splice kit to repair the outer jacket of a cable. This is an additional use (option) to a MSHA approved Splice Kit, when requested by the approval holder.
- 4.2. Conduit Repair - A method using the materials of a MSHA approved splice kit to repair hose conduit as per MSHA Program Policy Manual, Volume V, and section 75.503. This is an additional use (option) to a MSHA approved Splice Kit, when requested by the approval holder.
- 4.3. Electric Cable - An assembly of one, or more, conductors contained within a common, or integral, jacket whose conductors are #14AWG or larger and having a voltage rating exceeding 50 volts.
- 4.4. Preauthorization - An agreement in the application that confirms and agrees to MSHA's general cost estimate to evaluate the application. This eliminates the need for a fee letter to be sent to the applicant and the applicant's response (See Section 5.6.1).

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- 4.5. Signal Cable - 1) an assembly of one or more conductors contained within a common or integral jacket whose conductors are smaller than #14AWG or have a voltage rating not exceeding 50 volts. (2) Fiber optic cable. (3) Coaxial cable rated not to exceed 50 volts.
- 4.6. Splice Kit - A group of materials and an instruction sheet that clearly lists the voltages of all possible kit configurations. No individual part of the splice kit may be marked with an MSHA approval number that may suggest that independent use of the part is approved or sanctioned by MSHA except for the outer wrap material, which if approved as a cable jacket repair method, must list the MSHA approval number.

5.0 APPLICATION PROCEDURE

It is recommended that applicants contact the Approval and Certification Center to discuss approval and testing requirements prior to submitting an application.

- 5.1. An application requesting an approval or extension of approval should be sent to the following address:

Chief
Approval and Certification Center
Mine Safety and Health Administration
765 Technology Drive
Triadelphia, West Virginia 26059

- 5.2. Applicants must conduct their own flame test or have it conducted by a third party. **FLAME TESTS ARE TO BE SCHEDULED AFTER MSHA RECEIVES THE APPLICATION AND ASSIGNS A PAR NUMBER.** MSHA does not conduct approval testing of these cables; although MSHA reserves the right to view or witness the flame tests (see Section 5.6.3). A list of participating Part 7 testing laboratories is attached in Attachment No. 1. MSHA does not “approve” or endorse these laboratories, but lists them for the convenience of the applicant.

- 5.3. Electric and Signal Cable Applications

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Applicants should refer to the Electric and Signal Cable Application Form (Attachment No. 2) which illustrates the type of information required.

Applications must contain the following information.

- 5.3.1. Provide your company Employer Identification Number (EIN) and Tax Identification Number (TIN).
- 5.3.2. Company Code No.: A numeric code assigned by the applicant to identify the application until it is assigned a number by MSHA. The company assigned code number is to be one to six digits long.
- 5.3.3. Cable type, construction (round, flat etc.), number and size (gauge) of each conductor, voltage, and its current carrying capacity (ampacity).
- 5.3.4. The design standard used in the construction of the cable.
- 5.3.5. An engineering drawing of the cable(s) to show all details, such as conductor insulation, jacket thickness, overall dimensions and other construction features.
- 5.3.6. A list of each material (by type, compound #, supplier and supplier's stock No. or other designation) used in construction of the finished assembly (e.g. outer jacket, conductor insulation and fillers).
- 5.3.7. Applicable Certification Statements as described in Attachment #4.
- 5.3.8. If required, the place and date for flame testing and details on the specific samples that will be tested. Upon completion of testing, a copy of the laboratory's flame test report must be provided to MSHA (see Attachment No. 5).
- 5.3.9. The name, address, and telephone number of the applicant's representative responsible for answering any questions regarding the application.
- 5.4. Splice Kit Applications - Including a Cable Jacket Repair option and/or Hose Conduit Repair option
 - 5.4.1. Applicants should refer to the Splice Kit Application Form (Attachment No. 3) which illustrates the type of information required. A cable jacket

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and/or hose conduit repair method may be listed as an option for the Splice Kit and will only be approved as part of a Splice Kit. Applications must contain the following information:

- 5.4.1.1. Company Code No.: A numeric code assigned by the applicant. The company assigned code number is to be one to six digits long.
- 5.4.1.2. Splice Kit trade name, cable designation (style, code number, voltage rating(s))
- 5.4.1.3. The design standard used, voltage rating, type of kit (shielded, non-shielded) and the complete assembly dimensions for all components and for each cable the splice kit is designed to repair.
- 5.4.1.4. An engineering drawing of the splice(s) to show all details, such as conductor insulation, jacket thickness, overall dimensions and other features.
- 5.4.1.5. An instruction sheet listing the **voltage rating(s)** of the completed splice kit detailing the assembly of the splice and listing all the components of the splice.
- 5.4.1.6. A materials list (by type, compound #, supplier and supplier's stock No. or other designation) for each component used in the splice kit.
- 5.4.1.7. Applicable Certification Statements as described in Attachment No.4.
- 5.4.1.8. The place and date for flame testing and details on the specific samples that will be tested. Upon completion of testing, a copy of the laboratory's flame test report must be provided to MSHA (see Attachment No. 5).
- 5.4.1.9. The name, address, and telephone number of the applicant's representative responsible for answering any questions regarding the application.
- 5.4.1.10. If a cable jacket repair method is listed as an option, the instructions for this method must be included. These instructions must be a separate procedure to clearly distinguish them from the Splice Kit instructions.

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- 5.4.1.11. If a hose conduit repair method is listed as an option, the instructions for this method must be included. These instructions must be a separate procedure and clearly distinguished from the Splice Kit instructions.

5.5. Modification of Approval - Electric Cables, Signaling Cables and Splice Kits

Any change in the approved cable from the documentation on file at MSHA that affects the technical requirements (described in Part 7.404) should be submitted to MSHA for approval prior to implementing the change. Each application for an extension of approval should include the following:

- 5.5.1. Applications should be identified with a 6 or less numeric digit code number (Company Code) assigned by the applicant.
- 5.5.2. The MSHA-assigned approval number for the cable for which the extension is being requested.
- 5.5.3. A description of the proposed change to the previously approved cable.
- 5.5.4. Drawings and specifications which show the change in detail.
- 5.5.5. A statement as to whether, in the applicant's opinion, the change requires cable testing. If testing is not proposed, the applicant shall explain the reasons for not testing.
- 5.5.6. The place and date for flame testing and details on the specific samples that will be tested. Upon completion of testing, a copy of the laboratory's flame test report must be provided to MSHA.
- 5.5.7. The name, address, and telephone number of the applicant's representative responsible for answering any questions regarding the application.
- 5.5.8. The forms shown in Attachment No's 2 or 3 may be used.

5.6. Application Processing

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- 5.6.1. Upon receipt of a complete application, an estimate for the administrative cost of processing the application (cap letter), that includes the cost for the *time* spent to travel and witness the cable testing, will be sent to the applicant. The cost of any *travel and lodging* involved with witnessing the tests is a separate cost, and will also be charged to the applicant.
- 5.6.2. The applicant may preauthorize the estimate in order to eliminate the “cap” letter. Check with MSHA personnel for the present amount.
- 5.6.3. Upon receipt of the company agreement to the cap estimate (or *preauthorization*), MSHA will schedule the trip for the witnessing of the flame tests at the earliest possible convenience of all parties, should it decide to witness. MSHA's policy is to witness the testing of all first time Part 7 applicants, all “new” first time laboratories, or may witness tests at laboratories who in the past have demonstrated difficulties in conducting the tests according to the testing standards. MSHA reserves the right to witness any testing, and may suspend witnessing for external factors.
- 5.6.4. The applicant will be notified of the cables required for approval testing. When a range of cable sizes is applied for, it is not necessary to test every cable. MSHA's policy is to require testing of electric cables, signaling cables and splice kits with the smallest (and therefore thinnest jacket cover) and a representative larger size (gage) within the range.
- 5.6.5. Since jacket repair methods are an option in the Splice Kit application, there are no test procedures strictly for the testing of a cable jacket repair material.
- 5.6.6. Upon successful testing of the cable(s) and receipt of laboratory test data report(s) with certifications (see Attachment #5) MSHA will prepare an approval letter for the applicant.
- 5.6.7. If a cable should fail the test, one retest will be allowed based on a written request by the applicant. The request for retest must provide the justification for such action, such as improvement in cable formulation and amendment of original application. Based upon the justification and at MSHA’s discretion, the retest may consist of both sizes that were originally tested; otherwise, only the specific size that passed the test will be issued an approval. MSHA may waive viewing of retests.

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5.6.8. MSHA sends a copy of each approval of part 7K electric cable and signaling cable to the Pennsylvania Department of Environmental Protection, Bureau of Mine Safety.

5.7. Notification of Discrepancy

The applicant will be notified of any discrepancies that need to be corrected. Discrepancies will be resolved in accordance with the A&CC's Cancellation Policy (APOL 1009).

Attachment No. 1

**Part 7K Flame Test Laboratories for
Electric Cables, Signaling Cables, and Splice kits**

(Not endorsed or Approved by MSHA, but listed as a convenience)

PI Products, Inc.
200 Neal Street
Beckley, West Virginia 25801
Telephone: 304-255-7460

Coleman Cable Inc.
1530 Shields Drive
Waukegan, IL 60085
Telephone: 847-672-2422

Southwire Co.
One Southwire Drive
Carrollton, GA 30119
Telephone: 770-832-5039

Intertek Testing Services (ETL)
16015 Shady Falls Road
Elmendorf TX 78112
Telephone: 210-635-8100

RSCC
20 Bradley Park Road
East Granby, CT 06026
Telephone: 860-653-8341

Attachment No. 2a

ELECTRIC AND SIGNALING CABLE APPLICATION FORM

Date: _____

1. Company Name: _____
Address: _____
Company Representative: _____
Company EIN _____ Company TIN _____
Email: _____
2. Application/Company Code Number (6 or fewer digits): _____
3. Cable Description (Include all variations - use separate sheets if necessary)

	Indicate N/A if not Applicable
1. Trade Name	
2. Type (nomenclature) and configuration(round/flat)	
4. Voltage Rating & Ampacity	
5. Design Standard	
6. Jacket Material & Thickness	
7. Jacket Supplier & Spec. # (include Color and thickness)	
8. Conductor Insulation Supplier & Spec. #	
9. Filler Material Supplier & Spec. #	
10. Conductor	
11. Shield	
12. Ground	
13. Ground Check	
14. Any Additional Materials or Components	

Include an engineering drawing(s) of the cable(s).

Include description of various constructions on the next page (Attachment No. 2b).

Use as many copies of this page as necessary.

Number of power conductors	Voltage rating	Size (Gauge) of power conductors	Rated ampacity	Jacket thickness	Insulation thickness

Include an engineering drawing(s) of the cable(s)

Attachment No. 3

SPLICE KIT APPLICATION FORM

Date: _____

1. Company Name: _____
Telephone No. (Area Code): _____
Company Representative: _____
Email: _____
2. Application/Company Code Number (6 or fewer digits): _____
3. MSHA approval marking of test cable(s): _____
4. Cable Description (Include all variations)

	Indicate N/A if not Applicable		
1. Splice Kit Trade Name			
	Identification or compound #	Supplier	Supplier ID or stock number
2. Outer Jacket			
3. Inner Jacket			
4. Adhesive Material			
5. Filler Material			
6. Conductor Insulation Material			
7. Connector Material			
8. All Additional Components			
9. Abrasive Cloth			
10. Solvent Pad			
11. Danger Labels			
12. Complete Instructions - listing all the components of the splice.			
13. Design Standard			
14. Jacket Repair Option -Instructions Included			
15. Conduit Repair Option - Instructions Included			

Attachment No. 4

Certification Statements

Each application shall include certification statements as described in Part 7, Subpart A, Section 7.3(f).

Example:

PAR No. _____, Company Code No. _____

We [*insert name*] _____ certify that the cable meets the design portion of the technical requirements as specified in 30CFR, Subpart 7K, Section 7.404.

We [*insert name*] _____ certify that we will perform the Quality Assurance requirements of 30CFR, Subpart A, Section 7.7.

Signature of Authorized Company Representative

Further;

After completion of the required cable testing, the *applicant* must certify that the cable meets the performance portion of the Technical Requirements as specified in 30CFR, Subpart 7K, Section 7.404. However, if an MSHA representative witnesses the testing, this statement is not necessary.

We [*insert name*] _____ certify that the cable meets the performance requirements of Subpart K, [*choose one*]: Section 7.407 (power cable) or Section 7.408 (signal/fiber optic/co-axial) as specified in 30CFR, Subpart 7K, Section 7.404.

Signature of Authorized Company Representative

Attachment No. 5**Information Needed on Test Reports**

1. Test procedures;
2. Equipment used, including calibration dates;
3. Dates of cable conditioning.

Sample Test Form

GENERAL INFORMATION

Cable Manufacturer: _____, MSHA PAR No.: _____, Date: _____

Testing Laboratory: _____, Reference No.: _____, Tests Conducted By: _____

Cable Trade Name: _____, Size: _____, Jacket Markings: _____ Color: _____

Voltage Rating _____, Ampacity _____, Misc. info. _____

TEST PARAMETERSFlame Height 5", Inner Cone Height 3", Conductor Temp. 400°F, Heating Current _____ X 5 = _____**TEST RESULTS**

Test No.	Time Flame Applied (400°F)	Time Flame & Current Removed	Time Burning Ends	Burning Duration (seconds)	Length of Burn	Pass/Fail
1						
2						
3						
		30 signal 60 power (seconds)		Allowed 60 signal 240 power (max.)	Allowed Max. 6"	
						Pass or Fail

Remarks _____

Signed _____

PROVISIONAL TEMPLATE FOR PART 7 SPLICE KIT APPROVAL LETTER

In Reply Refer To:
MSHA:A&CC:PAR _____
Approval Record File
No. _____

<applicant rep. name>
<applicant company name>
<street address>
<city>, < state> <zip>

Dear Mr. <applicant rep. name> :

MSHA completed the review of your application dated _____,
Company Code _____, for the Type _____ Splice Kit.

This splice kit meets the requirements of Part 7, Subpart K of Title 30, Code of Federal Regulations (CFR).

The following requirements apply to this approval:

1. Approval Marking No."07-KA _____-MSHA" must be permanently marked on the jacket so that it appears at least once on the assembled splice. The marking must appear on the outside of the splices in letters at least 1/4" high and should be resistant to removal by abrasion.
2. A warning statement or warning label must be placed on the splice kit package and/or instruction sheet of each splice kit in order to remind the user to disconnect, lockout, and suitably tag the cable being repaired. Such warning should be placed in a conspicuous location and read as follows:

D A N G E R
BEFORE ATTEMPTING ANY CABLE REPAIRS, MAKE SURE THAT THE
PROPER CABLE IS DISCONNECTED, LOCKED OUT, AND SUITABLE
TAGGED!

3. The voltage rating must be placed on the splice kit instruction sheet and, optionally, on the package of each splice kit.
4. At least one of each item listed on the attached specification sheet shall be included in a splice kit. Additional items may be supplied in bulk.
4. A prepaid sample of the splice kit that includes the MSHA approval number is to

be submitted to the Chief, Quality Assurance and Materials Testing Division in a timely manner.

5. Approval of this product by MSHA obligates you, as the manufacturer, to maintain the quality of the product to insure the requirements of the approval are being met.
6. Any change in product composition, splice assembly instructions or in any other factors that may affect an approval issued under Part 7 must not be made without prior authorization.
7. We have the right to revoke this approval for cause, at any time.
8. This approval applies only to the products listed on the attached specification sheet. [Under this approval, the splice kit can be used for splicing cables and/or repair of cable jackets and hose conduit. – optional language]
9. This approval applies only to the constructions assembled as per the attached instruction sheet.
10. MSHA must be notified of any transfer of production or ownership of this product.

An invoice for the cost of processing this action will be forthcoming.

If you have any comments or questions relative to this letter, please refer them to _____ at 304-547-0400.

Sincerely,

<Center Chief>
Chief, Approval and Certification Center

cc: IPSO files (____):PAR ____
A&CC

MSHA:A&CC:

Data Sheet 9

FILE COPY SURNAME

<company>
<trade name>
Cable Splice, Cable Jacket & Hose Conduit Repair Kit
_____ kV (#__ AWG to #__ AWG)
MSHA Approval Marking Number 07-KAYY####-MSHA
PAR _____

ITEM	Component Number w/Options
Outer Jacket	
Adhesive	
Filler	
Insulation	
End-Seal	
Instructions	