

TITLE: Processing MSHA Part 6 Applications that Include Testing and Evaluation to MSHA Requirements**MSHA Mine Safety and Health Administration, Approval & Certification Center**

1.0 PURPOSE

These are the procedures for applicants and independent laboratories to follow when having products evaluated to the Mine Safety and Health Administration (MSHA) requirements under Title 30 Code of Federal Regulations Part 6 (30 CFR Part 6).

An MSHA approval is required to allow the use of an electrical product in hazardous areas of mines that may contain either explosive methane gas or combustible coal dust. A product that has been evaluated and tested to MSHA requirements by an independent laboratory is not automatically considered MSHA approved. It still must be reviewed and approved by MSHA.

2.0 SCOPE

This procedure applies to MSHA approval applicants and independent laboratories that evaluate and test products to MSHA requirements (ref. 30 CFR Section 6.10). These products include those approved, certified, accepted, or evaluated by the Electrical Safety Division (ESD) under 30 CFR Parts 18, 19, 20, 22, 23, and 27.

Note: This procedure does not apply to MSHA approval applicants and independent laboratories that evaluate and test products to a non-MSHA product safety standard determined by MSHA to be equivalent to MSHA requirements (ref. 30 CFR Section 6.20).

3.0 REFERENCES

- 3.1. 30 CFR Part 6 "Testing and Evaluation by Independent Laboratories and Non-MSHA Product Safety Standards"
- 3.2. 30 CFR Part 18 "Electric Motor-Driven Mine Equipment and Accessories"
- 3.3. 30 CFR Part 19 "Electric Cap Lamps"
- 3.4. 30 CFR Part 20 "Electric Mine Lamps Other Than Standard Cap Lamps"
- 3.5. 30 CFR Part 22 "Portable Methane Detectors"
- 3.6. 30 CFR Part 23 "Telephones and Signaling Devices"

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3.7. 30 CFR Part 27 “Methane-Monitoring Systems”

3.8. APOL 1009 “Application Cancellation Policy”

4.0 DEFINITIONS

4.1. 30 CFR Part 6 – A regulation that sets out alternate requirements for testing and evaluation of products MSHA approves for use in gassy underground mines.

4.2. Applicant – An individual or organization that manufactures or controls the assembly of a product and applies to MSHA for approval of that product.

4.3. Discrepancy – An inconsistency between the product and drawings or drawings and requirements found during the review of the application package by either MSHA or the independent laboratory.

4.4. Independent Laboratory – A laboratory that: (1) has been recognized by a laboratory accrediting organization to test and evaluate products to a product safety standard, and (2) is free from commercial, financial, and other pressures that may influence the results of the testing and evaluation process.

4.5. Equivalent non-MSHA product safety standard – A non-MSHA product safety standard, or group of standards, that is determined by MSHA to provide at least the same degree of protection as the applicable MSHA product approval requirements in 30 CFR Parts 18, 19, 20, 22, 23, and 27, or which in modified form provide at least the same degree of protection.

5.0 PROCEDURE

5.1. Potential MSHA applicant decides which method of approval they wish to pursue:

5.1.1. An independent laboratory performs all of the testing and evaluation necessary for approval of the product according to MSHA requirements (ref. 30 CFR Section 6.10). Note: Applications submitted to MSHA under this section without the independent laboratory report will not be accepted.

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- 5.1.2. An independent laboratory performs selected tests and/or evaluation necessary for approval of the product according to MSHA requirements (ref. 30 CFR Section 6.10). These applications will be processed in the same manner as applications where MSHA performs all of the tests and evaluations except the applicant must coordinate the completion of the independent laboratory tests and/or evaluation with the MSHA investigator assigned to the application. Tests and/or evaluation not completed at the required time will be listed in a discrepancy letter. The applicant must then have the independent laboratory complete the testing and/or evaluation by the cancelation date listed in the discrepancy letter or request that MSHA perform the testing and/or evaluation.
- 5.1.3. MSHA performs all of the testing and/or evaluation necessary to approve the product. This method of approval is outside the scope of this document. The applicant should refer to the appropriate Standard Application Procedure (SAP) found at the following link:
<http://www.msha.gov/TECHSUPP/ACC/application/application.htm>.
- 5.1.4. Independent laboratory testing and evaluation according to an equivalent non-MSHA product safety standard (ref. 30 CFR Section 6.20). This method of approval is outside the scope of this document. The applicable Standard Operating Procedure (SOP) for this method of evaluation was not finalized at the time of this document. For an updated list of these standards, see the following link:
<http://www.msha.gov/Part6SingleSource/Part6SingleSource.asp>.
- 5.1.4.1. Currently, only the International Electrotechnical Commission (IEC) standard for flameproof enclosures (IEC 60079-0, Fourth Edition, 2004-01 and IEC 60079-1, Fifth Edition, 2003-11) has been reviewed for equivalency to MSHA standards. MSHA determined that the IEC standard was equivalent with additional requirements. Those additional requirements are included in the federal register notice found at the following link, and in 30 CFR Section 6.30, Section 7.10, and Section 18.6(a)(3).
<http://www.msha.gov/REGS/FEDREG/FINAL/2006finl/06-4391.asp>
- 5.1.4.2. Also published for intent to be reviewed was IEC 60079-0 and IEC 60079-11 (Intrinsic Safety). The evaluation was not finalized at the time of this document.

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5.1.4.3. Requests for additional standards desired to be evaluated by MSHA for equivalency shall be submitted in writing to the Approval and Certification Center (A&CC) Center Chief. Such requests are considered when making determinations of which additional standards MSHA will evaluate for equivalency.

5.2. Potential MSHA applicant chooses an independent laboratory.

5.2.1. MSHA can accept test and evaluation results from any test laboratory that has been accredited by a reputable accrediting organization for the type of evaluation to be requested. The following two organizations determine independence and accredit organizations based on the applicable standards. Either of the two links provides a list of laboratories meeting the definition of an independent laboratory.

5.2.1.1. Occupational Safety and Health Administration (OSHA) Nationally Recognized Testing Laboratory (NRTL) program (<http://www.osha.gov/dts/otpc/nrtl/>), or

5.2.1.2. IECEx (<http://www.iecex.com/directory/bodies/bodies1.asp?id=5>)

Note: If a laboratory is chosen from either of the above two links, their accreditation with these two organizations serves as written evidence of the laboratory's independence as required by 30 CFR Section 6.10(a)(1).

5.2.2. Other laboratories not on either the OSHA or IECEx list may be accepted provided the following two requirements are met:

5.2.2.1. Written evidence of the laboratory's independence is provided to MSHA.

5.2.2.2. Written evidence of current recognition by a laboratory accrediting organization is provided to MSHA.

5.3. Independent laboratory evaluates and tests the product. The applicant and/or independent laboratory may consult with MSHA during the independent laboratory test and evaluation process to avoid interpretation errors. MSHA reserves the right to not accept the independent laboratory's work when it has been interpreted improperly. Extra tests or evaluation may be required to address improper interpretations of the MSHA requirements.

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Recommendation: MSHA is only authorized to communicate with the applicant. Therefore, applicants are encouraged to authorize in writing, and facilitate, communication between MSHA and the independent laboratory. Such written authorizations are recommended to be included in the application letter.

- 5.3.1. The independent laboratory evaluates the drawings for compliance with all MSHA regulations and policies in effect at the time. The following is a link to Title 30 Code of Federal Regulations (<http://www.msha.gov/30CFR/CFRINTRO.HTM>) and a link to the compliance information guide for various products (e.g. explosion-proof boxes, electric mining machines, flashlights, cap lamps, etc.) <http://www.msha.gov/Techsupp/ACC/Approvals/ESD/ESDApproval.s.asp>

Some MSHA rules/recommendations which have been overlooked in the past include the following:

- PIB03-03, *Recommended Design Safeguards for Permissible Remote Controlled Continuous Mining Machines*; the application to determine if a remote control unit is intended for use with a Continuous Mining Machine and ensure that the requirements are met.
- PPL 11-V-11, *Approval of Communication and Tracking Devices Required by the Mine Improvement and New Emergency Response Act of 2006 (MINER Act)*
- PIB P11-12, *Charging of Lithium Ion or Lithium Polymer Batteries*

- 5.3.2. The independent laboratory ensures the application package contains all materials required by the applicable MSHA standard application procedure. The following is a link to application procedures. <http://www.msha.gov/TECHSUPP/ACC/application/application.htm>

- 5.3.3. The independent laboratory ensures the drawings are adequate in number and detail to fully identify the product being evaluated. The application procedures contain a list of the minimum drawings and also the minimum required information for various components.

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5.3.4. The independent laboratory compares the product in marketable form with the submitted drawings to verify the product complies in all aspects and photographs the product. The photographs should include views of the assembled and disassembled interior and exterior, connectors, internal wiring subassemblies, significant features of the product, views of different construction materials, and close-up views of all critical areas.

- Critical areas for intrinsically safe products include: protective components or assemblies, critical spacings, significant energy-storing components, tested components, components critical to the safety of other components, etc.
- Critical areas for explosion-proof products include: flame arresting paths, fastening hardware, lenses, etc.

5.3.5. The independent laboratory follows all MSHA standard test procedures in effect at the time for required testing. The independent laboratory is either required to indicate on each test sheet to what MSHA standard test procedure the test(s) were conducted, or include a statement in the final report that all tests were conducted in accordance with the applicable MSHA standard test procedures. The following is a link to standard test procedures.

<http://www.msha.gov/TECHSUPP/ACC/StandardTestProcs/StandardTestProcs.asp>

Note: the requirement of this section is supplementary to the information required by sections 8 and 9 of each standard test procedure.

5.3.6. Any discrepancies noted during this process are handled between the applicant and independent laboratory. MSHA is available for consultation, if necessary.

5.3.7. The independent laboratory composes a final report.

5.3.7.1. The report must list or reference a document that lists all final accepted versions of drawings which were used in the evaluation and inspection. The drawing list must include the drawing titles, numbers, and revision levels.

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- 5.3.7.2. The report must address how the product complies with each requirement in the applicable MSHA product approval requirements. It is recommended that the report include a checklist that includes each applicable MSHA requirement and references the section of the report that addresses each requirement.
- 5.3.7.3. The report must also state that the product in marketable form was compared to the drawings and found to agree in all aspects. If not found to agree, the report must address in what ways the product did not agree and why this was found to be acceptable.
- 5.3.8. Once the independent laboratory determines that the design complies with all applicable MSHA requirements and the applicant concurs, the laboratory submits a completed report to the applicant.
- 5.4. The applicant prepares an application for submittal to MSHA.
- 5.4.1. The applicant prepares an application letter per the applicable procedure (according to the applicable 30 CFR product approval Part), making note on the application that it is a Part 6 application. The following is a link to MSHA's standard application procedures.
<http://www.msha.gov/TECHSUPP/ACC/application/application.htm>
- 5.4.2. In addition to the application letter, the application package must also include: all drawings which were accepted by the independent laboratory and which are necessary to describe the product noted in the application procedures, any other drawings referenced by the independent laboratory, a final report, all test sheets referenced by the final report, detailed photographs of the product, any other information referenced by the report, any other information required by the applicable standard application procedure, and a sample of the product in marketable form.

Some common pitfalls include:

- Drawings for equipment submitted for approval under 30 CFR Part 18 do not contain the required MSHA notes.
- All documentation used by the independent laboratory to determine compliance with the MSHA requirements (e.g. UL1642

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test report for lithium batteries used in intrinsically safe products) is not provided to MSHA.

- A factory inspection form or certified statement required by 30 CFR Parts 18 and 27 is not submitted.
- User manuals required by some application procedures are not submitted.

5.4.3. The applicant sends the entire application package and a sample of the product in marketable form to MSHA at the address listed in the application procedures.

Exception: samples of motors and enclosures for explosion proof certification shall not be sent with the initial application package. They shall instead only be sent to MSHA when requested by the assigned investigator.

5.5. The application package is reviewed by MSHA.

5.5.1. A fee estimate is prepared upon receipt of an application. A fee authorization letter is then sent to the applicant with the estimated fee, as well as an estimated date that the job will be assigned to an investigator.

5.5.2. Upon receiving the signed fee authorization letter from the applicant, the application is placed in a queue for assignment to the next available investigator.

Recommendation: To ensure that the review process is conducted in an efficient and timely manner, the applicant and the independent laboratory can schedule a review with MSHA after signing the fee authorization letter. This should be conducted with representatives of both the independent laboratory and the manufacturer, and can be conducted in a face-to-face meeting or with a web conference.

5.5.3. MSHA reviews the application package for compliance with all applicable MSHA regulations, policies, and procedures in effect at the time.

5.5.4. If any discrepancies with the application package are identified, MSHA drafts a discrepancy letter and sends it to the applicant. The applicant must address all identified discrepancies in the amount of time specified

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in the letter (ref. APOL1009, A&CC cancellation policy, which can be found at the following link:

<http://www.msha.gov/TECHSUPP/ACC/approvals/esd/apol1009.pdf>)

- 5.5.5. MSHA has the authority to decide if additional evaluation or testing is necessary (ref. 30 CFR Section 6.10(d)). In most cases, MSHA will request the applicant to choose whether MSHA or the independent laboratory conducts the additional evaluation or testing via the discrepancy letter noted in section 5.5.4. At its discretion, MSHA can conduct the additional testing or evaluation.
- 5.6. MSHA drafts a report and issues approval; drafts a discrepancy letter to the applicant; or cancels the application.
- 5.6.1. Upon review and acceptance of the independent laboratory's application package, MSHA prepares its own report of how the product and supporting documentation comply with Part 6 and the applicable 30 CFR product approval part. If the application package is not acceptable to MSHA, MSHA will send a letter to the applicant notifying them of any discrepancies.
- 5.6.2. Upon acceptance by MSHA, the drawings are indexed and filed in the A&CC's records management system for future reference.
- 5.6.3. An approval letter and drawing list will then be sent to the applicant notifying them of MSHA acceptance of the product.
- 5.6.4. If the product cannot be accepted or the applicant does not address discrepancies in the required time, the application is cancelled.
- 5.7. Post approval requirements.
- 5.7.1. MSHA has the option of conducting post approval audits of the product not more than once a year, except for cause, at no cost to MSHA (ref. 30 CFR Section 6.10(e)).
- 5.7.2. The applicant must notify MSHA of all product defects of which they become aware (ref. 30 CFR Section 6.10(f)).
- 5.7.3. The applicant is required to inform customers, distributors, and end users of the conditions of use specified in the MSHA approval letter.

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5.7.4. The applicant is required to abide by other stipulations listed in the MSHA approval letter.

5.8. Contacts.

5.8.1. Prior to a job being assigned, if there are Part 6 related questions, interested parties can access the Part 6 Single Source site at the following link <http://www.msha.gov/Part6SingleSource/Part6SingleSource.asp> or contact the following persons:

5.8.1.1. Kevin Dolinar (304-547-2014, dolinar.kevin@dol.gov), Kevin Hedrick (304-547-2018, hedrick.kevin@dol.gov), or Robert Holubeck (304-547-2088, holubeck.robert@dol.gov) for general Part 6 related questions.

5.8.1.2. Sarah Dragonetti (304-547-2318, dragonetti.sarah@dol.gov) for Explosion-Proof (X/P) Equipment related Part 6 approval questions.

5.8.1.3. Steve Helmick (304-547-2066, helmick.steven@dol.gov) or Chad Huntley (304-547-2076, huntley.chad@dol.gov) for Intrinsically Safe (IS) Equipment related Part 6 approval questions.

5.8.2. After assignment to an investigator, the applicant should contact the investigator.