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# Approval and Certification Center

MSHA -Technical Support

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## From the Center Chief's Desk



As we move into a new decade, the A&CC continues to focus on our approval process efficiency.

Many of our applicants now use email and our file transfer protocol (FTP) server to submit their applications electronically, thereby significantly streamlining their submission process. If you would like to switch to electronic submissions, please call 304.547.2094 for details or log on to <http://www.msha.gov/techsupp/acc/application/online.htm>.

Another tool available to our applicants in the testing and evaluation process is the use of Title 30 Code of Federal Regulations Part 6. Read more about Part 6 on page 2.

In this edition, we also outline our new Visitor Procedures, provide an overview of Flame Resistant Materials evaluations, and give you the latest on Communications and Tracking. We hope you find these articles to be useful and informative.

If the last three years are any indication of what the next decade will bring, remarkable technological advancements

will lead the way to the development of outstanding new products. New technologies that are thoroughly, safely and efficiently tested will ultimately benefit our most precious resource, the U.S. miner.

Best wishes for a safe, healthy, and happy New Year,

*John*

John P. Faini

**A&CC: More, Better, Sooner for the Miners.**

## **New Approval and Certification Center (A&CC) Visitor Procedures**

The A&CC is always honored to host visitors. Recently we have implemented changes in the visitor procedures for our campus. These changes are consistent with other similar Federal facilities and are intended to protect our personnel, visitors, property, and proprietary information. However, these changes do reduce convenience as is typical with increasing security.

Please consider the following when planning your visit to the campus:

- ◆ We must complete additional security checks for non-citizen visitors and groups of ten (10) or more. Please give the person hosting your visit at least 72-hour notice when either of these apply to your visit.
- ◆ All visits involving groups of nine (9) or fewer who are all U.S. citizens still require at least 24-hour notice so that the person hosting your visit can notify our security and reception personnel.
- ◆ All visitors must use the main gate for our Building 1 upon arrival and should not go directly to any of our other buildings.
- ◆ All visitors must sign our Visitor Log at Building 1 upon arriving and when leaving the campus.
- ◆ Visitors who are Federal employees must display their Federal photo ID on their persons at all times during their visit.
- ◆ All other visitors must exchange a government issued photo ID (driver's license, passport, or similar) for a Visitor Pass, which must be displayed on their persons at all times during their visit.
- ◆ The person being visited will meet visitors at the Building 1 lobby or at the door of any other buildings.

Your patience and cooperation with these changes will help us efficiently serve you and the mining community. More information about our campus is available on the MSHA web site at <http://www.msha.gov/TECHSUPP/ACC/ACCHOME.HTM>, or contact Harry Foose at [foose.harry@dol.gov](mailto:foose.harry@dol.gov).

## Use of 30 CFR Part 6 in the Testing and Evaluation of Applications

Title 30 CFR Part 6, "Testing and Evaluation by Independent Laboratories and Non-MSHA Product Safety Standards," was promulgated in June 2003. The rule applies to products evaluated under the applicable requirements of Parts 7, 14, 18, 19, 20, 22, 23, 27, 33, 35, or 36.

The first part of the rule, 30 CFR 6.10, allows MSHA to accept testing and evaluation performed by independent laboratories in lieu of testing and evaluation performed by the A&CC. This may include part or all of the MSHA testing and evaluation required for the product. Typically the laboratories that can be used under Part 6 are those that have already established independence and recognition. In general, these can be Nationally Recognized Testing Laboratories (NRTL) under the Occupational Safety and Health Administration (OSHA), or those that are recognized as an IECEx accepted testing laboratory. A listing of laboratories from which MSHA has accepted testing and evaluation results under 30 CFR Part 6 can be found at:

<http://www.msha.gov/Part6SingleSource/labs.asp>

Further, the applicant is required to submit to the A&CC a complete technical explanation of how the product complies with the applicable requirements and to identify components or features of the product that are critical to the safety of the product. Finally, the applicant must submit all documentation, including

drawings and specifications, which were submitted to the independent laboratory. The second part of the rule, 30 CFR 6.20, allows MSHA to approve mining products designed to non-MSHA product safety standards provided MSHA determines that the standard(s) provides at least the same degree of protection as the applicable MSHA requirements, or can be modified to provide at least the same degree of protection. Currently, the only standard for which a determination has been made for equivalency is the International Electrotechnical Commission (IEC) 60079-1 Flameproof Enclosure standard. The requirements in this standard must be modified in order to provide at least the same degree of protection as MSHA explosion-proof enclosure requirements which are included in Parts 7 and 18. These required modifications are listed in 30 CFR 7.10(c)(1) and 30 CFR 18.6(a)(3)(i).

To date, 17 approval applications from 14 applicants have been completed under the 30 CFR Part 6 rule. For more information on how Part 6 can aid in the evaluation of applications, visit the single source page at: <http://www.msha.gov/Part6SingleSource/Part6SingleSource.asp> or contact Dave Chirdon at 304.547.2026 or [chirdon.david@dol.gov](mailto:chirdon.david@dol.gov).



Microscope used for engineering evaluations

## Flame Resistant Materials

MSHA regulations require that some products or parts of products used in underground coal mines be flame resistant. Products required to be flame resistant can vary from complete parts, such as electrical cables, to parts of products, such as the inner liner of a fire hose. There are also other products that MSHA regulation does not require to be flame resistant, but interest in the mining industry in flame resistance of these products, such as the outer jacket material of a hydraulic hose, led MSHA to establish voluntary evaluation for flame resistance.

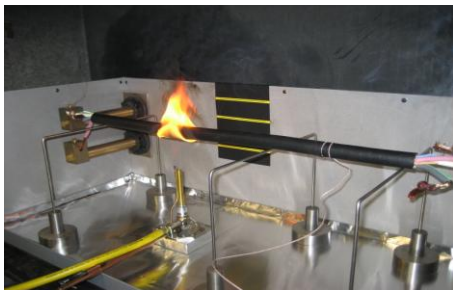
Flame resistant materials are not expected to propagate any fire to which the products may be exposed. MSHA defines flame resistant materials as "...material that will burn when held in a flame but will cease burning when the flame is removed." In other words, it is not that flame resistant materials will not burn, but that they cease burning within a specified period of time after the ignition test flame is removed.

The size of the ignition test flame, time of flame engagement with the test specimen, size and configuration of the test specimen and the conditions (air flow) under which the test is conducted vary from test to test. The PASS/FAIL criteria are also different for each test. Therefore, one type of flame resistant mining product will have different "flame resistance" characteristic than another type of mining product, based upon the flame test mandated.

MSHA uses several different flame tests, and the use of each is based upon the mining product to be evaluated. Here is a chart of some mining products and the flame tests used to evaluate them.

<i>PRODUCT</i>	FLAME TEST 30 CFR
Electrical Cables	Part 7.407
Brattice Cloth	Part 7.27
Conveyor Belts	Part 14.22
Electrical Hose Conduit	Part 18.65
Inner Liner of Fire Hose	Part 18.65
Outer Jacket of Fire Hose	Part 18.65
Misc. products (conveyor rollers, hydraulic hose cover)	Part 18.65
Rib-roof material	Part 7.27 (modified)

For other mining products not listed in the above chart, one of the listed flame test procedures typically would be used.



Part 7.407 Flame Test



Part 18.65 Flame Test

The A&CC can perform and routinely conduct these tests. Occasionally, the A&CC is asked to test a non-traditional material for which there is no established flame resistance test.

The appropriate flame resistance test is selected and the test results are provided to the requestor. This information is used to properly determine the suitability of a product for a specific use where flame resistance is a concern.

A complete list of products that MSHA has tested and accepted may be found on the MSHA website at <http://www.msha.gov/TECHSUPP/ACC/lists/lists.htm>. For additional information concerning flame resistant products, contact Dave Creamer at 304.547.2085 or [creamer.david@dol.gov](mailto:creamer.david@dol.gov).

## Communications and Tracking Update

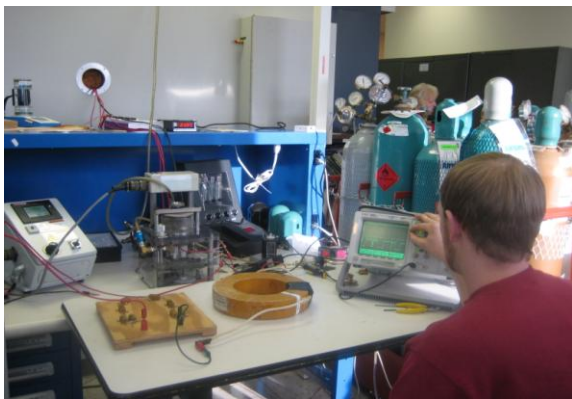
Since the beginning of 2006, the Electrical Safety Division (ESD) of the A&CC has issued 130 new or revised approvals for communications and tracking products. At the end of December 2009, the A&CC was processing 48 approval applications for communications and tracking technology.

Improvements in mine communication and tracking technologies continue to be made. Manufacturers of leaky feeder systems have introduced components that provide electronic tracking over the communication system backbone. Many communication and tracking systems are incorporating wireless components to improve the range and flexibility of the

systems. These wireless components also facilitate advancement of the systems as the underground mining cycle progresses. Other improvements in communication and tracking technologies include designs which allow the interoperation of systems that use different radio frequencies. As experience is gained, these hybrid designs may allow mine operators to continue to use older technologies already in place while providing additional layers of safety and functionality for their overall communication and tracking needs.

A&CC engineers continue to observe tests of communications and/or tracking systems at various mine sites. To date, we have attended 71 demonstrations of 33 different systems and met with representatives from 69 companies. Additionally, the A&CC is planning a workshop to share communications and tracking technology developments and implementation issues with underground coal mining industry stakeholders.

For more information on the A&CC's communication and tracking efforts, visit: <http://www.msha.gov/techsupp/commoandtracking.asp> or contact Dave Chirdon at 304.547.2026 or [chirdon.david@dol.gov](mailto:chirdon.david@dol.gov).



Equipment used to test intrinsically safe circuits

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