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801 or, after March 9, 1978, by the Assistant Secretary under the Federal Mine Safety and Health Act of 1977 (Pub. L. 91-173, as amended by Pub. L. 95-164, 30 U.S.C. 801).

Permit means a formal document, signed by the Assistant Secretary, authorizing the operation of specific experimental equipment in a gassy mine or tunnel under prescribed conditions.

Plane joint means two adjoining surfaces in parallel planes.

Portable cable, or trailing cable means a flame-resistant, flexible cable or cord through which electrical energy is transmitted to a permissible machine or accessory. (A portable cable is that portion of the power-supply system between the last short-circuit protective device, acceptable to MSHA, in the system and the machine or accessory to which it transmits electrical energy.)

Portable equipment means equipment that may be moved frequently and is constructed or mounted to facilitate such movement.

Potted component means a component that is entirely embedded in a solidified insulating material within an enclosure.

Pressure piling means the development of abnormal pressure as a result of accelerated rate of burning of a gas-air mixture. (Frequently caused by restricted configurations within enclosures.)

Qualified representative means a person authorized by MSHA to determine whether the applicable requirements of this part have been complied with in the original manufacture, rebuilding, or repairing of equipment for which approval, certification, or a permit is sought.

Splice box means a portable enclosure in which electrical conductors may be joined.

Step (rabbet) joint means a joint comprised of two adjoining surfaces with a change(s) in direction between its inner and outer edges. (A step joint may be composed of a cylindrical portion and a plane portion or of two or more plane portions.)

Threaded joint means a joint consisting of a male- and a female-thread-

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ed member, both of which are of the same type and gage.

[33 FR 4660, Mar. 19, 1968, as amended at 39 FR 23999, June 28, 1974; 43 FR 12314, Mar. 24, 1978; 57 FR 61223, Dec. 23, 1992]

§ 18.3 Consultation.

By appointment, applicants or their representatives may visit Approval and Certification Center, Industrial Park Road, Dallas Pike, Triadelphia, W. Va. 26059, to discuss a proposed design to be submitted for approval, certification, or acceptance for listing. No charge is made for such consultation and no written report thereof will be made to the applicant.

[33 FR 4660, Mar. 19, 1968, as amended at 43 FR 12314, Mar. 24, 1978]

§ 18.4 Electrical equipment for which approval is issued.

An approval will be issued only for a complete electrical machine or accessory. Only components meeting the requirements of subpart B of this part or those approved under part 7 of this chapter, unless they contain intrinsically safe circuits, shall be included in the assemblies.

[57 FR 61209, Dec. 23, 1992]

§ 18.5 Equipment for which certification will be issued.

Certification will be issued for a component or subassembly suitable to incorporate in an approved machine. Certification may be issued for such components as explosion-proof enclosures, battery trays, and connectors.

§ 18.6 Applications.

(a)(1) Investigation leading to approval, certification, extension thereof, or acceptance of hose or conveyor belt, will be undertaken by MSHA only pursuant to a written application. The application shall be accompanied by all necessary drawings, specifications, descriptions, and related materials, as set out in this part. Fees calculated in accordance with part 5 of this title shall be submitted in accordance with § 5.40.

(2) Where the applicant for approval has used an independent testing laboratory under part 6 of this chapter to perform, in whole or in part, the necessary testing and evaluation for approval

under this part, the applicant must provide to MSHA as part of the approval application:

(i) Written evidence of the laboratory's independence and current recognition by a laboratory accrediting organization;

(ii) Complete technical explanation of how the product complies with each requirement in the applicable MSHA product approval requirements;

(iii) Identification of components or features of the product that are critical to the safety of the product; and

(iv) All documentation, including drawings and specifications, as submitted to the independent laboratory by the applicant and as required by this part.

(3) An applicant may request testing and evaluation to non-MSHA product safety standards which have been determined by MSHA to be equivalent, under § 6.20 of this chapter, to MSHA's product approval requirements under this part. A listing of all equivalency determinations will be published in 30 CFR part 6 and the applicable approval parts. The listing will state whether MSHA accepts the non-MSHA product safety standards in their original form, or whether MSHA will require modifications to demonstrate equivalency. If modifications are required, they will be provided in the listing. MSHA will notify the public of each equivalency determination and will publish a summary of the basis for its determination. MSHA will provide equivalency determination reports to the public upon request to the Approval and Certification Center. MSHA has made the following equivalency determinations applicable to this part 18.

(i) MSHA will accept applications for explosion-proof enclosures under part 18 designed and tested to the International Electrotechnical Commission's (IEC) standards for Electrical Apparatus for Explosive Gas Atmospheres, Part 0, General Requirements (IEC 60079-0, Fourth Edition, 2004-01); and Part 1, Electrical Apparatus for Explosive Gas Atmospheres, Flameproof Enclosures "d" (IEC 60079-1, Fifth Edition, 2003-11) (which are hereby incorporated by reference and made a part hereof) provided the modifications to the IEC standards specified

in § 18.6(a)(3)(i)(A) through (I) are met. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. The IEC standards may be inspected at MSHA's Electrical Safety Division, Approval and Certification Center, R.R. 1, Box 251, Industrial Park Road, Triadelphia, West Virginia 26059 or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. These IEC standards may be obtained from International Electrical Commission, Central Office 3, rue de Varembe, P.O. Box 131, CH-1211 GENEVA 20, Switzerland.

(A) Enclosures shall be made of metal and not have a compartment exceeding ten (10) feet in length. Glass or polycarbonate materials shall be the only materials utilized in the construction of windows and lenses. External surfaces of enclosures shall not exceed 150 °C (302 °F) and internal surface temperatures of enclosures with polycarbonate windows and lenses shall not exceed 115 °C (240 °F), in normal operation. Other non-metallic materials for enclosures or parts of enclosures will be evaluated, on a case-by-case basis, under the new technology provisions in § 18.20(b) of this part.

(B) Enclosures shall be rugged in construction and should meet existing requirements for minimum bolt size and spacing and for minimum wall, cover, and flange thicknesses specified in paragraph (g)(19) of § 7.304 Technical requirements. Enclosure fasteners should be uniform in size and length, be provided at all corners, and be secured from loosening by lockwashers or equivalent. An engineering analysis shall be provided for enclosure designs that deviate from the existing requirements. The analysis shall show that the proposed enclosure design meets or exceeds the mechanical strength of a comparable enclosure designed to 150 psig according to existing requirements, and that flamepath clearances in excess of existing requirements will not be produced at an internal pressure

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of 150 psig. This shall be verified by explosion testing the enclosure at a minimum of 150 psig.

(C) Enclosures shall be designed to withstand a minimum pressure of at least 150 psig without leakage through any welds or castings, rupture of any part that affects explosion-proof integrity, clearances exceeding those permitted under existing requirements along flame-arresting paths, or permanent distortion exceeding 0.040-inch per linear foot.

(D) Flamepath clearances, including clearances between fasteners and the holes through which they pass, shall not exceed those specified in existing requirements. No intentional gaps in flamepaths are permitted.

(E) The minimum lengths of the flame arresting paths, based on enclosure volume, shall conform to those specified in existing requirements to the nearest metric equivalent value (*e.g.*, 12.5 mm, 19 mm, and 25 mm are considered equivalent to ½ inch, ¾ inch and 1 inch respectively for plane and cylindrical joints). The widths of any grooves for o-rings shall be deducted in measuring the widths of flame-arresting paths.

(F) Gaskets shall not be used to form any part of a flame-arresting path. If o-rings are installed within a flamepath, the location of the o-rings shall meet existing requirements.

(G) Cable entries into enclosures shall be of a type that utilizes either flame-resistant rope packing material or sealing rings (grommets). If plugs and mating receptacles are mounted to an enclosure wall, they shall be of explosion-proof construction. Insulated bushings or studs shall not be installed in the outside walls of enclosures. Lead entrances utilizing sealing compounds and flexible or rigid metallic conduit are not permitted.

(H) Unused lead entrances shall be closed with a metal plug that is secured by spot welding, brazing, or equivalent.

(I) Special explosion tests are required for explosion-proof enclosures that share leads (electric conductors) through a common wall with another explosion-proof enclosure. These tests are required to determine the presence of pressure piling conditions in either

enclosure when one or more of the insulating barriers, sectionalizing terminals, or other isolating parts are sequentially removed from the common wall between the enclosures. Enclosures that exhibit pressures during these tests that exceed those specified in existing requirements must be provided with a warning tag. The durable warning tag must indicate that the insulating barriers, sectionalizing terminals, or other isolating parts be maintained in order to insure the explosion-proof integrity for either enclosure sharing a common wall. A warning tag is not required if the enclosures withstand a static pressure of twice the maximum value observed in the explosion tests.

(ii) [Reserved]

(4) The application, all related documents, and all correspondence concerning it shall be addressed to the Approval and Certification Center, Rural Route #1, Box 251, Industrial Park Road, Triadelphia, WV 26059.

(b) [Reserved]

(c) Applications for acceptance of a conveyor belt as fire resistant shall include the following information: Trade name of the conveyor belt, thickness of covers, friction and skim coats, number of plies, type and weight of ply material, and designation of breaker strip or floated ply. The applicant shall provide other description or specifications as may be subsequently required.

(d) Applications for acceptance of hose as flame resistant shall include the following information: Trade name of hose, identification of materials used, including compound numbers, thickness of cover, thickness of tube, and number and weight of plies. The applicant shall provide other description or specifications as may be subsequently required.

(e) Drawings, drawing lists, specifications, wiring diagram, and descriptions shall be adequate in number and detail to identify fully the complete assembly, component parts, and subassemblies. Drawings shall be titled, numbered, dated and shall show the latest revision. Each drawing shall include a warning statement that changes in design must be authorized by MSHA before they are applied to approved

equipment. When intrinsically safe circuits are incorporated in a machine or accessory, the wiring diagram shall include a warning statement that any change(s) in the intrinsically safe circuitry or components may result in an unsafe condition. The specifications shall include an assembly drawing(s) (see Figure 1 in Appendix II) showing the overall dimensions of the machine and the identity of each component part which may be listed thereon or separately, as in a bill of material (see Figure 2 in Appendix II). MSHA may accept photographs (minimum size 8" × 10½") in lieu of assembly drawing(s). Purchased parts shall be identified by the manufacturer's name, catalog number(s), and rating(s). In the case of standard hardware and miscellaneous parts, such as insulating pieces, size and kind of material shall be specified. All drawings of component parts submitted to MSHA shall be identical to those used in the manufacture of the parts. Dimensions of parts designed to prevent the passage of flame shall specify allowable tolerances. A notation "Do Not Drill Through" or equivalent should appear on drawings with the specifications for all "blind" holes.

(f) MSHA reserves the right to require the applicant to furnish supplementary drawings showing sections through complex flame-arresting paths, such as labyrinths used in conjunction with ball or roller bearings, and also drawings containing dimensions not indicated on other drawings submitted to MSHA.

(g) The applicant may ship his equipment to MSHA for investigation at the time of filing his application and payment of the required fees. Shipping charges shall be prepaid by the applicant.

(h) For a complete investigation leading to approval or certification the applicant shall furnish MSHA with the components necessary for inspection and testing. Expendable components shall be supplied by the applicant to permit continuous operation of the equipment while being tested. If special tools are necessary to assemble or disassemble any component for inspection or test, the applicant shall furnish them with the equipment to be tested.

(i) For investigation of a hose or conveyor belt, the applicant shall furnish samples as follows:

Hose—a sample having a minimum length of 2 feet;

Conveyor belt—a sample of each type 8 inches long cut across the entire width of the belt.

(j) The applicant shall submit a sample caution statement (see Figure 3 in Appendix II) specifying the conditions for maintaining permissibility of the equipment.

(k) The applicant shall submit a factory-inspection form (see Figure 4 in Appendix II) used to maintain quality control at the place of manufacture or assembly to insure that component parts are made and assembled in strict accordance with the drawings and specifications covering a design submitted to MSHA for approval or certification.

(l) MSHA will accept an application for an approval, a letter of certification, or an acceptance for listing of a product that is manufactured in a country other than the United States provided: (1) All correspondence, specifications, lettering on drawings (metric-system dimensions acceptable), instructions, and related information are in English; and (2) all other requirements of this part are met the same as for a domestic applicant.

[33 FR 4660, Mar. 19, 1968, as amended at 43 FR 12314, Mar. 24, 1978; 47 FR 14696, Apr. 6, 1982; 57 FR 61223, Dec. 23, 1992; 60 FR 33723, June 29, 1995; 60 FR 35693, July 11, 1995; 68 FR 36419, June 17, 2003; 70 FR 46343, Aug. 9, 2005; 71 FR 28584, May 17, 2006]

§ 18.7 [Reserved]

§ 18.8 Date for conducting investigation and tests.

The date of receipt of an application will determine the order of precedence for investigation and testing. If an electrical machine component or accessory fails to meet any of the requirements, it shall lose its order of precedence. If an application is submitted to resume investigation and testing after correction of the cause of failure, it will be treated as a new application and the order of precedence for investigation and testing will be so determined.