

**§ 7.303**

both of which are the same type and gauge.

**§ 7.303 Application requirements.**

(a) An application for approval of a motor assembly shall include a composite drawing or drawings with the following information:

- (1) Model (type), frame size, and rating of the motor assembly.
- (2) Overall dimensions of the motor assembly, including conduit box if applicable, and internal free volume.
- (3) Material and quantity for each of the component parts that form the explosion-proof enclosure or enclosures.
- (4) All dimensions (including tolerances) and specifications required to ascertain compliance with the requirements of § 7.304 of this part.

(b) All drawings shall be titled, dated, numbered, and include the latest revision.

**§ 7.304 Technical requirements.**

- (a) Voltage rating of the motor shall not exceed 4160 volts.
- (b) The temperature of the external surfaces of the motor assembly shall not exceed 150 °C (302 °F) when operated at the manufacturers' specified ratings.
- (c) Minimum clearances between uninsulated electrical conductor surfaces, or between uninsulated conductor surfaces and grounded metal surfaces, within the enclosure shall meet the requirements of table J-1 of this section.

TABLE J-1—MINIMUM CLEARANCES BETWEEN UNINSULATED SURFACES

Phase-to-phase voltage (rms)	Clearances (inches)	
	Phase-to-phase	Phase-to-ground or control circuit
0 to 250 .....	0.25	0.25
251 to 600 .....	0.28	0.25
601 to 1000 .....	0.61	0.25
1001 to 2400 .....	1.4	0.6
2401 to 4160 .....	3.0	1.4

(d) Parts whose dimensions can change with the motor operation, such as ball and roller bearings and oil seals, shall not be used as flame-arresting paths.

(e) The widths of any grooves, such as grooves for holding oil seals or o-

rings, shall be deducted in measuring the widths of flame-arresting paths.

(f) An outer bearing cap shall not be considered as forming any part of a flame-arresting path unless the cap is used as a bearing cartridge.

(g) Requirements for explosion-proof enclosures of motor assemblies.

- (1) Enclosures shall be—
  - (i) Constructed of metal;
  - (ii) Designed to withstand a minimum internal pressure of 150 pounds per square inch (gauge);
  - (iii) Free from blowholes when cast; and
  - (iv) Explosion proof as determined by the tests set out in § 7.306 of this part.
- (2) Welded joints forming an enclosure shall be—
  - (i) Continuous and gas-tight; and
  - (ii) Made in accordance with or exceed the American Welding Society Standard AWS D14.4-77, "Classification and Application of Welded Joints for Machinery and Equipment," or meet the test requirements set out in § 7.307 of this part.

AWS D14.4-77 is incorporated by reference and has been approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from the American Welding Society, Inc., 2501 NW 7th Street, Miami, FL 33125. Copies may be inspected at the Mine Safety and Health Administration, Department of Labor, Approval and Certification Center, RR 1, Industrial Park Road, Triadelphia, WV 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](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

(3) External rotating parts shall not be constructed of aluminum alloys containing more than 0.6 percent magnesium. Non-metallic rotating parts shall be provided with a means to prevent an accumulation of static electricity.

(4) Threaded covers and mating parts shall be designed with Class 1A and 1B (coarse, loose fitting) threads. The covers shall be secured against loosening.

(5) Flat surfaces between fastening holes that form any part of a flame-arresting path shall be plane to within a