

Materials Specification – 26 for ELECTRIC PUMP MOTORS

1. APPLICABLE INDUSTRY STANDARDS:

Each motor shall conform to the ANSI C50, and NEMA MG-1 including ratings, characteristics and tests, unless otherwise specified herein. The nameplate horsepower rating of each motor shall be one of the Standard NEMA values.

2. VOLTAGE AND CURRENT:

Motors shall utilize standard nominal three-phase voltages of 460 or 4160 volts alternating current depending on the required horsepower and the characteristics of the power distribution system.

The initial inrush current at full-rated applied voltage and locked rotor shall not exceed 600% of the full-load rated KVA.

All motors shall be suitable for across-the-line full voltage starting.

3. OPERATING TEMPERATURE AND INSULATION CLASSIFICATION:

The maximum temperature rise of the motor (at an operating altitude of 5,900 feet above sea level) shall not exceed 77° C above an ambient temperature of 40° C, per the NEMA Standards method for altitude derating, when the motor is delivering full rated continuous horsepower at rated voltage, frequency and power factor. The motor shall have, as a minimum, a NEMA Class B insulation system rating. A NEMA Class F system may be employed, however, the actual operating temperatures shall not exceed the value given above.

4. ENCLOSURE AND COOLING:

All motors shall have NEMA standard open drip-proof enclosure with internal fan cooling.

5. BEARINGS:

Motors may be equipped with either sleeve or anti-friction type bearings depending upon the horsepower, rotational speed, and load coupling methods required for the specific installation. For motors rated at 100 horsepower or larger, the bearings shall be oil lubricated from an oil reservoir equipped with a sight level gauge, and they shall be suitable for use with high quality turbine oil, such as Mobil DTE-13 or an approved equivalent. If anti-friction bearings are used, they shall be of standard AFBMA size and grade with a minimum rated L-10 life of 100,000 hours.

6. SERVICE FACTOR:

Motors shall retain a service factor of 1.15 at the above specified elevation, operating temperature, and full load.

7. ACCEPTABLE MANUFACTURERS:

Motors shall be supplied by the following approved manufacturers:

Electric machinery
Reliance
General Electric
Marathon
Louis-Allis

For approval as a equal by the Electrical Engineer of Denver Water, a motor manufacturer must have a local engineering representative and local repair facilities.

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