

Construction/Quality Control

Construction Techniques

Heatrex construction techniques are designed to insure high quality and long life.

- **Rolling** – All standard diameter elements listed in this catalog are compacted through multi-stage rolls. This process insures uniform compaction of the magnesium oxide, a truly round cross section and a consistent diameter. This is critical if the element is being inserted into a machined hole.
- **Terminal Construction** – A threaded stainless steel terminal is welded onto the cold pin for the standard construction. Stainless steel nuts and washers are furnished for field wiring. The terminal must be prevented from rotating when connecting field wiring.
- **Terminal insulator and seals** — Element ends are normally sealed against moisture, which can rapidly deteriorate the insulating properties of magnesium oxide. The terminal

insulator and seal must be suitable for the temperature, voltage and atmospheric conditions of the application. Heatrex offers a wide variety of terminals, insulators and seals to meet virtually any combination of field conditions (see pages 19 thru 23).

- **Recompaction** – In the process of bending, density is reduced in the compacted magnesium oxide. These reductions, in turn, can lead to overheating and coil failure, especially at high temperatures or high watt densities. To prevent such failures, we recompress bends to improve density in the magnesium oxide when necessary.

Quality Control

From raw materials through the finished product, AccuTherm maintains the highest standards in the industry through a series of Quality Control/Assurance checks.

- **Magnesium Oxide** – Heatrex uses the highest grade MgO available for electric heating elements under various applications. Each batch is checked against two ASTM Standards: ASTM D3347 determines tap density to assure a high insulation density. ASTM D2755 is used for sieve analysis. Samples are sifted through ten progressively finer sieves to assure a normal distribution and controlled concentration of grains. As a result, Heatrex elements have extremely high MgO density.
- **Certification to Special Standards** – Elements can be certified to Military Standards such as MIL-H-22577 Rev C and MIL-PRF-22594 Rev C, and special customer specifications regarding tolerances, hydrostatic testing, etc. Please consult the factory for details.

UL and CSA Recognition

Most of the elements described in this catalog are Recognized by the Underwriters Laboratories under UL Standard 1030. Our File No. is E78533. In addition, elements for refrigeration defrost are Recognized under File No. SA3254. Such recognition makes it simpler for manufacturers to incorporate Heatrex elements into equipment that is UL or Third Party Listed. Tubular and finned tubular elements are also CSA approved under contract No. 151727, Class 2871-02, 2871-82. Elements may also be supplied with CE markings required for the European Communities upon request. Please consult the factory for details.