Construction Techniques

INDEECO 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 10-32 stainless steel terminal is welded onto the cold pin for the standard construction. This technique allows the use of a relatively small diameter pin since it is not carrying the element current at its most critical point: connection to field wiring. The smaller pin also results in greater electrical clearances between the pin and the sheath, which is critical at higher voltages.

  Stainless steel nuts and washers are furnished for field wiring. This hardware fits up to an integral shoulder with two flat sides on the terminal. Using an end wrench on the flats will prevent the terminal from rotating when connecting field wiring.

  The terminal insulator and seal must be suitable for the temperature, voltage and atmospheric conditions of the application. INDEECO offers a wide variety of terminals, insulators and seals to meet virtually any combination of field conditions (see pages 6 and 7).
- **Recompaction** – In the process of bending, hairline cracks can develop in the compacted magnesium oxide. These cracks, in turn, can lead to overheating and coil failure, especially at high temperatures or high watt densities. To prevent such failures, we recompress most bends with a center-to-center diameter of 2" or less, eliminating cracks in the magnesium oxide.

Quality Control

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

- **Magnesium Oxide** – INDEECO uses only 96% pure MgO, the highest grade available for electric heating element. 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 coarser sieves to assure a high concentration of larger grains, which have better thermal conductivity and dielectric strength. As a result, INDEECO elements have extremely high MgO density.
- **Certification to Special Standards** – Elements can be certified to Military Standards such as MIL-H-22577C and MIL-H-22594A, 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, epoxy-sealed elements for refrigeration defrost are Recognized under File No. SA3254. Such recognition makes it simpler for manufacturers to incorporate INDEECO elements into equipment that is UL Listed. Tubular and finned tubular elements are also CSA approved under Report No. LR 11895-39. Please consult the factory for details.