

## KERAPLAST

### - High Power Heater Bands for Plastification Cylinders -

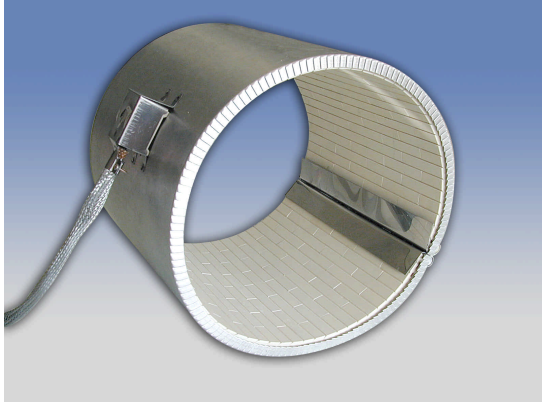
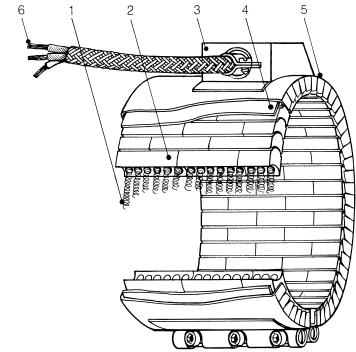


Figure 1



#### GENERAL CHARACTERISTICS

The continuous technological development in the moulding of plastic materials demands to all the machine components high performances and reliability. The long experience in this field and a specific technical solution allowed us to produce a family of heaters which fulfils these tight requirements. They have imposed throughout the market and have made us leaders in this field.

KERAPLAST heaters belong to the new generation of electrical heaters for the plastic industry and have become components of primary importance for the smooth operation of the moulding machine. The selection of the best materials, allows to reach very high heating power values and presents several advantages. In particular it is worth to mention:

- **Long Operational Life**
- **Energy saving**
- **Fast heat conduction**
- **Uniform heat distribution**
- **High electrical insulation**
- **Easy installation**
- **Great mechanical resistance to shocks and to tearing applied to the cables**
- **Tight manufacturing tolerances**

The heaters undergo dimensional and electrical controls all along the production phase, as requested by the company Quality Control System that is certified in accordance with ISO 9001:2000 Standard. A 100 % electrical acceptance test allows to verify the compliance of each single heater to the requirements specified in the applicable CEI/EN/UL Specification. In particular, the following tests are performed:

- Verification of the earth connector efficiency
- Measurement of the Insulation resistance
- Measurement of the dielectrical rigidity
- Measurement of the dispersion current
- Measurement of the resistance ohmic value

#### APPLICATIONS

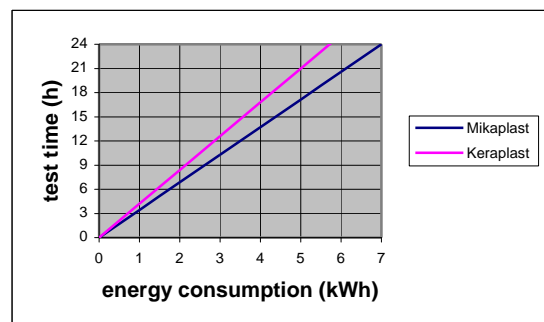
These heaters are employed in all the plastic moulding machines whenever a high heating power is required. They are recommended for use in all the case where the operational temperature exceeds 280 °C.

#### TECHNICAL DATA (see Figure 1)

1. **RESISTIVE WINDING** spiral made of Nickel/Chrome 80/20 DIN 17470, material n° 4869, characterised by large section and consequent low power density,

executed with automatic tools which insure long duration. The spiral is uniformly distributed within the circuit which is realised by a mosaic of ceramic blocks. This solution guarantees a perfect distribution of the heat

2. **ELECTRICAL INSULATION** made of high purity ceramic KER 221 DIN 40685 which presents a high resistance to thermal shocks and a high dielectrical rigidity. The peculiar internal structure of the ceramic insures a rapid and uniform transmission of the heat. Thanks to the high temperatures which are reached and to the particular shape of the mosaic, the heat is transmitted both by conduction and radiation.
3. **CERAMIC TERMINAL BOARD** connecting the power supply cables to the internal electrical circuit. A special metallic cover protects the ceramic board from shocks and tearings applied to the cables
4. **INTERNAL INSULATION** made of fibreglass which allows to save electrical energy: the graph below shows, for a 24 hours working cycle, that saving that can be obtained if a KERAPLAST heater is used in place of a MIKAPLAST is about 20 %.



5. **INTERNAL SHEATH** made of galvanically treated steel resistant to high temperatures. Its compressing action onto the heating band guarantees an optimum heat exchange efficiency
6. **POWER SUPPLY CABLE** (optional) suitable for high temperatures, with internal conductors in nickel-plated copper or in pure nickel (for the most severe applications). Internal insulation made of fibreglass and Teflon. Externally protected by a metallic braid sheath.

#### POWER

KERAPLAST heaters are normally manufactured with a specify power of  $4 \div 6 \text{ W/cm}^2$ . In specific applications values as high as  $8 \text{ W/cm}^2$  can be obtained.