

Heating Bands

Micanite/Stainless Steel - Ceramic/Stainless Steel

Dear Customer,

we would like to use this opportunity to thank you for buying this product from Friedr. Freek GmbH.

Please read this document carefully before installing the heater in order to learn important facts regarding the product's safety and use.

More information about our products you can find on our website: freek-heaters.com.



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Introduction

Micanite band heaters are ideal for heating pipes and cylinders. They are made of micanite (mica) with a plastic-tight stainless steel sheath and are also available with a type J thermocouple on request. There are many standard dimensions for the micanite band heaters, but special designs in other sizes, power ratings, voltages, with holes, etc. are no problem.

The ceramic band heaters are especially suitable for higher power densities and thus also higher temperatures.

Max. specific surface load / max. permissible working temperature:

▪ Micanite:	6,5 W/cm ²	400°C
▪ Ceramic:	8,0 W/cm ²	550°C

Safety

As a manufacturer of heating elements, Freek is not responsible for the conditions in which its heating elements are installed and connected in the various customer-specific applications in which they are used, nor is it responsible for how the heating elements are controlled there. Rather, it is the customer's responsibility to be aware of and observe good engineering practice as it is recognised in the application and business markets in question. For example, many machines and their equipment are subject to the standard EN 60204 "Safety of machinery – Electrical equipment of machines".

Additionally, the customer is responsible for ensuring that electrical heating elements are only ever connected under the responsibility of a qualified electrician. This is because only a qualified electrician will know the risks associated with electrical heating elements, such as fire, explosion, combustion or electric shock, and – even more importantly – will know the safety measures that need to be put in place in order to prevent such events from occurring, even if the heating elements malfunction. Examples of these safety measures include protection against contact, thermal insulation, electrical insulation, temperature control, overtemperature prevention, earthing, residual current operated circuit breakers, overcurrent circuit breakers and miniature circuit breakers.

General Remarks & Handling

- Band heaters must not be operated without control, as the risk of overheating is too great.
- Band heaters must be in full contact with the cylinder. Insufficient contact leads to partial overheating on the heating wire. This damages the insulation and can lead to a breakdown. The overstressed heating wire becomes brittle and breaks or burns through directly. For this purpose, tighten the fastening screws well.
- For diameters larger than 200 mm, we recommend using steel springs on the screw connections to ensure a permanently tight fit on the cylinder.
- Band heaters must not be operated in humid environments.
- The leads must not be strained (danger of tearing the leads off).
- The max. working temperature according to insulation given in the catalogue resp. internet must not be exceeded.
- Our heating elements are designed for being operated at defined voltages. Operation at higher voltages may reduce lifetime considerably or result in immediate failure (15% more voltage = 32% more power!).
- In every practice application there are working and environmental parameters which cannot be calculated exactly in theory. That is why we recommend generally to test our flat heating elements in the application under real working conditions before series use.

No warranty claims can be derived from these user instructions.