

Installation Instructions

Heating Elements Type: hotform

1. General notes

Hotset heating elements for rated voltages above 50 V AC or 75 V DC were developed, designed and produced in accordance with directive 2014/35/EU of the European Parliament and Council and directive RoHS 2011/65/EU.

The heating elements are components, not fully operational equipment. The intended use is the use in industrial electric heating systems.

The heating elements were electrically and mechanically tested by the manufacturer and were shipped from the factory in a safe technical condition. For proper and safe operation, these installation and storage instructions must be followed.

2. Safety

Heating elements should be installed by qualified personnel. The customer is responsible for correct installation of the heating element.

If affected by their area of application, the heating element and the body or system to be heated must be connected according to DIN EN 60204-1. In addition, the tool must be properly grounded. Additional earthing points on the tool may be required.

Upon commissioning of the heating element within an existing system or machinery, an inspection report according to DIN EN 60204-1 resp. VDE 0100-610 must be issued.

The heating element should be included in the customer's preventative maintenance plan and checked regularly according to the operational safety regulations.

The heating element must be protected against contact, as it may become very hot during operation. Appropriate measures must be taken to prevent overheating of the heating element, e. g. by a temperature control system, the choice of appropriate heating element power and/or an overheating protection.

No flammable or explosive materials may come into contact with the heating element. Even in case of malfunction, fire/explosion hazard must be prevented.

3. Prior to installation or storage

Before installation, the heating element must be checked for damage caused by loading and shipping.

Ensure that the electrical connections are undamaged and securely fastened to the heating element. It is also essential to check the surface. There should be no cracks or other damage.

If, on the other hand, you do find a fault, please send the heating element back to Hotset GmbH.

4. Installation

4.1. General

Do not plug in the power supply until all other installation steps have been completed, as the heating element becomes hot immediately after connection and thus poses the risk of burning.

For permanent installation of the heating element we recommend a room temperature between +15 °C and +35 °C.

Heating elements and sensors must be properly installed to function safely. Avoid applying excessive pressure to the heating element unless it is designed to do so.

The protective measures and protection against accidental contact must be ensured during installation (see point 2 „Safety“).

Protect the connection area of the heating elements against penetrating liquids (e.g. oils, plastics, greases) and gases. --> Danger of electrical flashover.

To avoid short-circuits, the leads must not come into contact with sharp edges and/or objects or other moving parts of the tool. (Appropriate safety devices for the terminal area are available as accessories.)

Observe minimum bending radii of leads, as specified in the product data sheet.

Maximum temperatures of terminal area and cables must not be exceeded. (For information on the maximum permitted service temperature of the respective terminal version please refer to the product data sheet.)

Observe correct polarity in heating elements with built-in thermocouple.

Use adequate controllers for the installed total power and the type of sensors used (controllers are available at hotset).

For additional information arising from special applications, please refer to the order confirmation.

4.2. hotform silicon heating elements with self-adhesive foil

The self-adhesive foil is permanently heat-resistant up to 150 °C / 302 °F and short term up to 180 °C / 356 °F. The adhesive films' resistance to UV and humidity is excellent.

Note: It is not recommended using films on low-energetic surfaces such as polyethylene or polypropylene. It is also strongly advised not to bend the heating mat.

Under normal temperature conditions the adhesive reaches its maximum strength after 70/80 hours. It is extremely important not to heat the heater to its maximum load until the polymerization of the adhesive is complete.

The polymerization can be accelerated by heating the heater to 80 °C / 176 °F for one hour.

In high humidity conditions it is recommended to seal the joints with silicone such as E43.

Caution: With standard acrylic adhesives, it is strongly advised not to remove the adhesive foil from the surface after positioning the heating element, as this will cause the adhesive to lose its adhesive properties.

4.3. Processing instructions

Make sure the application surfaces are clean, i. e. free of dust, grease, oil, and release agents. It should be dry, firm, and smooth. We recommend using a mild solvent for cleaning. Check compatibility with plastic surfaces.

The ideal bonding temperature is between +18 °C and +30 °C / 65 and 86 °F. Application temperatures below +10 °C / 50 °F are not recommended because the adhesive hardens too much and its immediate bonding capacity is reduced. Once the material is properly installed, low temperatures do no longer affect the bonding quality.

Optimum momentary pressure provides full contact with the surface and thus creates the conditions for a perfect bond. Strong massaging by means of stroking movements towards the edges is absolutely necessary to drive out air inclusions.

The adhesive strength is best when the heating element is firmly re-pressed during initial heating.

Hotset GmbH
Hueckstraße 16 · 58511 Lüdenscheid · Germany
Phone +49/23 51/43 02-0 · Fax +49/23 51/43 02-25
www.hotset.com · DEsales@hotset.com
Managing Partner: Ralf Schwarzkopf
Registered seat: Lüdenscheid · Germany
Register court: AG Iserlohn HRB 3927
VAT-Id.No.: DE 125800560