

hotform

Silicone heating elements

Flexible panel heating mats for railway technology and track construction



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Components and Systems

Heating elements, thermal sensors and process control – hotset is your partner for the realization of intelligent product and service solutions in the field of industrial heat technology. Based on our international presence and our own production sites, we operate as a component supplier and development service provider for customers in all industries.

We supply you with components for your series production, we implement complex system solutions for you or we take over entire value chains: your requirements, your goals and your wishes always form the centre of our actions. You benefit from flexible production and logistics structures, an interdisciplinary engineering and over four decades of technology experience.

hotset – components. systems. projects.



Flexible panel heating mats for railway technology and track construction

With our hotform silicone heating elements you receive a highly efficient and responsive universal solution for surface tempering in the railway, track and signal technology. Innovative heat conductor geometry and highly thermally conductive special silicone guarantee fast heat transfer and homogeneous heat distribution.

Whether treads and entrances, seats and floors, couplings and water tanks or switch and signal mechanisms: hotform silicone heating elements can be used to defrost, warm up and heat flat as well as curved and surrounding surfaces. hotform silicone elements are ultra-flat, lightweight and flexible, and can be used for temperatures from -60 °C to $+270\text{ °C}$. They are also suitable for integration into multilayer systems and sandwich constructions.

Size and design can be individually adjusted to your specific application at any time.

hotform silicone heating elements are available as ready-to-install system components.

hotform silicone heating elements can be used both indoors and outdoors in a wide variety of applications. They can be used as stand-alone solutions, as built-in components or as intermediate layers in multilayer systems (e.g. glass fibre mats) and sandwich constructions. Depending on the objective, they are used for defrosting (anti-icing), warm-up or heating of surfaces. They increase the functional and operational safety of technical systems and minimize the expenses for their maintenance and repair.

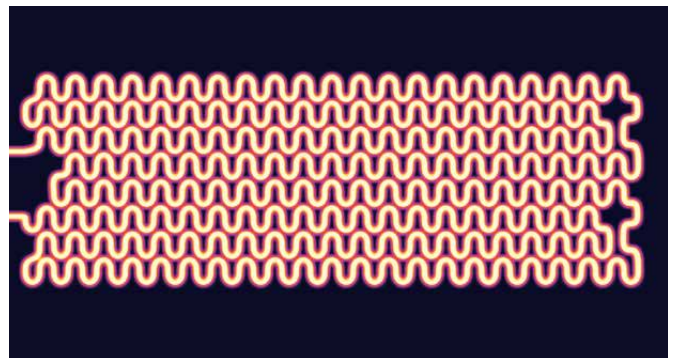
In railway construction, hotform silicone heating elements are integrated into entrances, doors, windows, mirrors, seats, floors, claddings as well as fresh and waste water tanks, pipelines and wagon couplings. In track and signal technology, they protect mechanical setting devices and electrical-electronic switching contacts in railway tracks, switches, signals and display panels against icing. hotform silicone heating elements can be controlled with a high degree of control accuracy in a time- and temperature-oriented manner.



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Advantages

- Special silicone with high thermal conductivity
- Innovative winding of heat conductor
- Very fast heat transfer
- Excellent heat distribution (maximum homogeneity)
- High energy efficiency
- Temperature resistance from -60 °C to +270 °C
- Light and ultra-flat (up to 0.4 mm)
- Easy, flexible installation
- Minimum installation effort
- High control accuracy, short response time
- Suitable for flat, round, concave and convex surfaces
- UV-resistant
- High weather resistance
- EN 45545-compliant (fire, smoke)
- Waterproof to IP 67
- Easy integration in multilayer and sandwich constructions
- Ready-to-install delivery as mats, bands or molded parts



Thermography – Homogenic heat distribution

Options

- Direct current
- Power cord
- Temperature sensor
- Security limiter
- Thermostat
- Color selection for bulk orders
- Silicone foam

Connection Leads

- Silicone leads -> max. Temp: 180 °C / 356 °F
- FEP leads -> max. Temp: 200 °C / 392 °F
- PFA leads -> max. Temp: 260 °C / 500 °F

Fixation method

- Mechanical (springs, velcro)
- Standard adhesive (up to 160 °C)
- Special adhesive (up to 220 °C)
- Adhesive, reusable

Technical Features

Size	Max. 1840 x 580 mm, special sizes available on request
Tolerance	± 1 mm
Thickness of Material	Min. 0.4 mm, 1 mm Standard
Thickness of Material - Tolerances	± 0.1 mm
Bending Radius	10 mm
Voltage	12 up to 400 V
Power density	Up to 5 W/cm ²
Wattage Tolerance	± 10 %
Temperature Resistance	-60...+200 °C / -76...+392 °F (up to 270 °C / 518 °F on request)
Thermal conductivity at +100°C	1 W/m K
High voltage test	1500V AC
Standards	UL (on request) EN 45545 (Maximum classi- fication for fire and smoke) EN 50264 and EN 50306 (for rail vehicles) FDA IP67



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