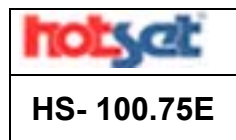


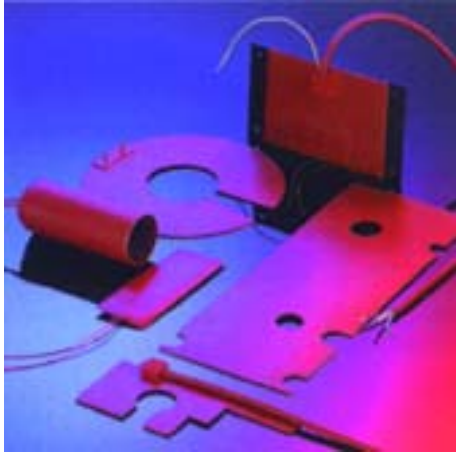


CRN TECNOPART, S.A.

Sant Roc 30
08340 VILASSAR DE MAR (Barcelona)
Tel 902 404 748 - 937 591 484 Fax 937 591 547
e-mail: crn@crntp.com [http:// www.crntecnopart.com](http://www.crntecnopart.com)



hotform® SILICON-HEATING ELEMENTS



hotset offers hotform® silicon-heating elements which flexible adapt to heating tasks. It does not matter whether e.g. plains or cylindrical shapes: hotform® silicon-heating elements can be used everywhere where the required space is small.

By the possibility of unusual cuttings hotform® silicon heating elements are also suitable for the heating of asymmetric plains.

Properties such as e.g. resistance against chemicals, ageing proof and resistance to atmospheric corrosion as well as food safety open a wide spectrum of application possibilities for hotform® heating elements. hotform® heating elements consist of silicon-coated fibreglass fabric with a homogeneous embedded heating conductor.

This construction allows the precise adjustment of the heating element to the required application.

TECHNICAL DATA

- operating voltage: 24 – 250 V AC/DC
- nominal voltage: up to 6500 W
- specific power density: according to table
- thickness: 1.5 – 5 mm
- max. length: 2.5 m
- max. width: 1.0 m
- max. heating area: 2.5 m²
- bending radius: R 50 mm
- connection version: silicon insulated leads, flat vulcanised
- power tolerance: ± 10 %
- temperature resistance: 60 up to + 200 °C, shortly + 250 bis + 300 °C
- heat conductivity at + 100 °C: Approx. 15 x 10⁻⁴ W/cm K
- dielectric strength: 12 KV/mm
- licences: VDE 0700 part 1, DIN EN 60335

Options

- operating voltage up to 750 V AC/DC on request
- other dimensions
- smaller bending radius
- other connection options and protection of the connection
- temperature control
- can be delivered also UL approbated on request

Kinds of fastening

- vulcanize on
 - self-adhesive foil
 - stick on with silicon cold-vulcanite
 - press on by using pressure plates
 - clamp with tension springs, unlace
- see also table

Specific heat wattage W/cm ²	sheat surface temperature °C	Specific heat wattage W/cm ²	sheat surface temperature °C
0,050	40	0,750	238
0,075	60	0,800	247
0,100	70	0,850	253
0,125	80	0,900	259
0,150	90	0,950	265
0,200	105	1,000	270
0,250	121	1,100	280
0,300	135	1,200	290
0,350	150	1,300	300
0,400	164	1,400	310
0,450	176	1,500	320
0,500	188	1,600	330
0,550	200	1,700	340
0,600	210	1,800	350
0,650	220	1,900	360
0,700	230	2,000	370

Temperature control

- without external controller system by the self-resistance of the heating coil
- by bimetal-controller, -watcher or limitator
- with thermocouples or resistance sensors and corresponding temperature controller
- by barsensor, capillary tube sensor etc. in fixed sensorcases and corresponding temperature controller

Ask hotset-expert advisers, which kind of temperature control is suitable for your heating task.

Connection options

The electric connection of hotform® silicon heating elements will be fixed according to safety precaution and application specific issues.

- simple insulated connection wires
- double insulated connection wires
- simple insulated double leads
- connection leads with/without mechanical protection
- connection leads with polished earth for metal parts
- flat plugs
- connection with strain relief and bend protection.

The thermal and mechanical properties of the silicon make many individual solutions possible, which can not all be mentioned above

Heating power and surface temperature

The surface temperature of the hotform® silicon heating elements should not exceed + 200 °C in continuous operation.

Exceeding up to + 250 °C for short term only.

Temperatures over + 300 °C will destroy the silicon.

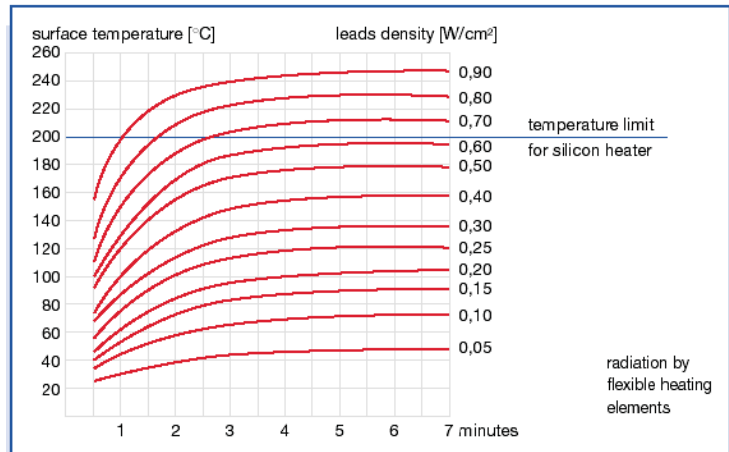
The right table indicates the attainable surface temperature at corresponding surface power without regulation.

The limit values for the maximum possible surface load are:

- 0.60 W/cm² at limitation with selfresistance depending on application
- 2 W/cm² at limitation with thermostates or thermocouples/resistance sensors in combination with a temperature controller (higher surface load on request)

The values shown in the table have been ascertained under the following conditions:

- flat hotform® heating element
- test position horizontal
- surrounding temperature + 20 °C (calm air)
- measured in steady position



Kind of fitting	Connection	Assembly area	Temperature range	Assembly advice
Vulcanise	Aluminium, stain-less steel, steel, other metals	Any	60 up to + 200 °C (depends on tool)	Factory-connected
Self-adhesive foil	Metals, different plastics, ceramic	Flat or cylindrical	0 up to 150 °C	Clean adhesive plain with acetone. Peel off protective foil, apply with easy pressure without any bubbles. Is ready for operation immediately.
Stick on with silicon cold-vulcanite	Metals, different plastics, glass, ceramic, wood	Any	- 60 up to + 180 °C	Clean adhesive plain with acetone. Pretreat with grounding according to material. Paint adhesive plain and heater with silicon glue(scraper or similar). Apply on heater without bubbles with even contact pressure and harden 24 hours at room temperature.
Pressing with pressure plates	Any	Flat	- 60 up to + 200 °C	Put flexible heating between operating part and pressure plate. Alternatively: vulcanize heating on pressure plate.
Clamp with tension springs, unlase	Any	cylindrical	- 60 up to + 200 °C	Simple assembly on site, above all, if the heated operating part has to be changed e. g. barrel heater).