

Silicone Heating Blanket for Curing Process



PAULISTA HEATERS
ELECTRIC HEATING SYSTEM

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Composite Curing Heating Blankets

Product Specifications

- ✓ Voltage: 110V, 220V, 380V, 440V or other.
- ✓ Working temperature: up to 200°C (392°F).
- ✓ Ideal for curing resins or concrete.
- ✓ We manufacture custom-made products.
- ✓ We manufacture thermal blankets for single-phase, two-phase, or three-phase machines.
- ✓ With a fastening and assembly system tailored to the customer's process needs.
- ✓ Type of controllers: digital panel with internal sensor for blanket temperature control and external sensor with bulb for resin temperature control.
- ✓ We have options for classified EX areas.



1- Description of the product structure

Description	Technical Details
<p>The heated thermal blanket is made with silicone reinforced with fiberglass fabric, resistive wire, with internal and external cabling according to electrical current, temperature control, male power plug, and may contain different types of fixation systems and may include a thermal insulation cover sewn in Cordura fabric, with internal insulation in ceramic fiber fabric and external insulation in Nomex fabric.</p>	<p>Operating temperature: From -40°C (-104°F) to +200°C (392°F) (withstands peaks of -90°C (194°F) and +230°C (446°F) for short periods of time)</p>
	<p>Weight capacity: 1kg/cm²</p>
	<p>Electrical insulation: 20KV</p>
	<p>Hardness: Standard 30 + 5 Shore , other hardness levels may apply according to customer requirements.</p>
	<p>Varied fastening system, with the solution that best suits the customer's process.</p>
	<p>Internal Teflon wiring – withstands temperatures up to 260°C (500°F) – Voltage: up to 600V</p>
	<p>*Internal electrical connection cables are used to connect the thermal blanket to the controller.</p>
	<p>External silicone cable – withstands up to 200°C (392°F) – Voltage: up to 500V</p>
<p>External PP cabling – withstands up to 90°C (194°F) – Voltage: up to 500V</p>	
<p>*Cables for external electrical connections do not have direct contact with the thermal blanket; they are used to connect the temperature controller to the power outlet.</p>	
<p>Direct or alternating current power supply</p>	

Power plug:

We offer plug sockets according to the current and voltage specifications of the design, as well as the model that the customer needs for their process. The two product line options are:



Brazilian standard 3-pin plug (10A or 20A) for 110V or 220V



Industrial plug 16A, 32A, 63A e 125A para 110V, 220V, 380V or 440V

Fastening system:

Silicone heating blankets can have various fastening systems. The most commonly used in resin or concrete curing processes are hooks, Velcro covers, or metal structures for mounting the blanket to create a heating oven around the product. Other fastening methods require evaluation by the technical department for adaptation of the heating blanket.

Temperature controller:

Ideally, for curing processes, a digital panel with two controllers should be used: one with an internal sensor to control the temperature of the heating blanket, and one with an external sensor and bulb to control the temperature of the resin.

Digital Panel

Recommended for high-power heating blankets (above $0.7W/cm^2$) and heating systems requiring precise temperature control, as it has a PID function. It comes with a sensor (PT100, J, K, NI120, PTC or other) for blanket temperature control. More than one controller can be coupled to control the product temperature. Controller used: NOVUS 1030 or NOVUS 1050 (for ramp-plateau, ideal for processes that need to follow a heating cycle where the temperature varies over time). It can be coupled to the product (direct connection) or mounted on a pedestal (interconnected to the blanket via a multi-pole socket). Made according to NR10 (can be customized according to customer needs to meet the specifications of their process). We also manufacture panels for classified EX areas.



Digital controllers have several quality certifications, such as: ISO 9001, REACH Compliance , RoHS , CE, RU, EX, among others, which ensure operational excellence and reliability for your process.

Insulation layer:

This is the outer covering that serves both to protect the heating blanket and to insulate it, ensuring that the blanket does not lose heat to the environment, also protecting the operator from the risk of burns. The cover is made of Cordura fabric , Nomex , and insulating material, which offers high mechanical resistance and withstands high temperatures. Furthermore, it provides safety in use because it does not propagate flames. And, being waterproof, it allows for use in outdoor environments. The Velcro fasteners positioned at the ends allow for modular assembly, enabling the expansion of the heating area as needed. Cleaning is simple, as it is done dry using a cloth and alcohol since the fabric does not attract dirt.



2- Instruction manual:

How to use

1. Install the heating element by positioning the silicone side (red) towards the container to be heated and the temperature controller towards the outside.
2. Secure the part using its fastening system.
3. Check the voltage of the electrical network where the silicone heating pad will be connected. If connected to a lower voltage, it will heat up little, and if connected to a higher voltage, it will burn out.
4. Plug the silicone heating pad into the electrical outlet.
5. In the case of a digital panel, especially during first use, do not change the temperature on the controller; wait for the controller to complete its learning period. At the end, the TUNE light will turn off and the green lights will flash; this is normal for the product. Only after the learning process is complete, set the temperature up to 100°C, and if necessary, increase it by 20°C every 20 minutes to allow for proper heating.
6. Wait for the silicone heating pad to heat up to the desired temperature.
7. Allow to heat until the product reaches the appropriate temperature. Heating time varies depending on the specific heat of the product being heated, the power of your heating mantle, and the volume of your container.
8. Next, unplug the silicone heating pad and wait 1 minute for it to cool down.
9. Remove the silicone heating pad and store it properly.

Recommendations:

- Do not use the heating blanket above its design temperature. It can operate continuously up to 200°C with peaks of 230 °C.
- Metal containers can withstand high temperatures, but plastic containers can only withstand a maximum of 90°C, and cardboard containers can only withstand a maximum of 50°C (if placed above that, they will puncture).
- For high-dissipation heating blankets (above 0.7 W/cm²), it is always recommended to use them with heat exchange, otherwise there is a risk of burning.
- Store and transport the heating blanket correctly: do not fold, stretch, kick or throw it, as this may damage the resistive elements and internal components of the controllers.
- Use rubber gloves to avoid static electricity shock; this shock does not pose a danger to humans, only a discomfort.
- Do not move the heating blanket while it is heated or heating up, as this may damage the resistive elements.
- Do not puncture, cut, or immerse the heating pad in liquid; this may cause a short circuit.
- The heating blanket may release gases from its internal components during the initial heating cycles (especially at high temperatures, above 150°C).
- Cleaning should only be done with the heating pad de-energized, using a clean cloth and alcohol.
- If the heating pad or controller is damaged, discontinue use and notify Paulista Heaters to verify if it is safe to continue using the product, as there may be a risk of electric shock in this case.

- Do not make any modifications to the heating blanket without prior notification and authorization from Paulista Heaters, as failure to inform or approve this will violate the product's legal warranty.

Safety Items:

- ✓ The thermal blanket is fully electrically insulating, resistant to fungi and chemicals.
- ✓ The thermal insulation cover provides approximately 70% insulation, allowing the operator to work close to the container being heated.
- ✓ The insulation cover is waterproof, made with flame-retardant fabrics that are resistant to cutting and high temperatures.
- ✓ The thermal blanket or cover should be cleaned dry, using a cloth and alcohol.
- ✓ Both the heating blanket and the cover do not attract dirt easily.
- ✓ The digital panel can be made in accordance with NR10.
- ✓ The heating blanket poses no risk for use in EX-classified areas, as the resistive element is completely sealed.
- ✓ For use in EX-classified areas, we work with certified panels and appropriate cabling (please inform us of your classification so that our technical department can analyze it).
- ✓ When the heating blanket comes with a pedestal-mounted panel, the pedestal is grounded. However, grounding the equipment to be heated is the customer's responsibility.
- ✓ mats (up to $0.7W/cm^2$) will not burn out if switched on without heat exchange at temperatures up to $150^{\circ}C$. However, high dissipation heating mats

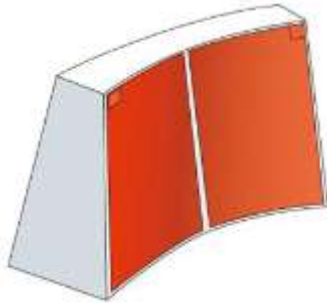
cannot be switched on without proper heat exchange, as there is a risk of burning out.

- ✓ Do not use the heating blanket if it has bubbles, is punctured, cut, has an exposed resistive element, or is burnt, as there is a risk of electric shock.
- ✓ The silicone heating pad does not come into contact with the product being heated.
- ✓ It provides a safe heating process for operators, with minimal risk of workplace accidents.

3- Application :

The thermal curing blanket is ideal for processes such as:

Resin or Concrete Curing



Ideal for use in areas such as:

- ✓ Pharmaceutical industry,
- ✓ Food industry,
- ✓ Chemical industry,
- ✓ Metallurgical industry,
- ✓ Auto repair shop,
- ✓ Laboratory.

We manufacture custom-made, customized products, to best meet your needs. Contact us for a quote!

Registration Data

Company Name

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Trade Name

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CNPJ

44.493.049/0001-07

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