

TECHNICAL DATA SHEET

HEATING MAT FOR GREENHOUSES



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Warmset provides a complete range of **electric heating systems** specifically designed for **greenhouses**, nurseries and agricultural cultivation areas. Thanks to the patented laminated heating technology, Warmset solutions ensure uniform and efficient heat distribution directly at plant level, **improving growth conditions** and protecting crops during cold seasons.

The heating conductor is flat and laminated, offering a **large thermal exchange surface** and ensuring highly homogeneous warmth across the cultivation area. Power output, dimensions and supply voltage can be fully customized depending on the specific greenhouse layout and crop requirements.

For traditional greenhouse applications, **Warmset heating mats are installed directly under soil layers** or with **pots placed in direct contact with the heating surface**. Temperature control is managed through dedicated regulation systems capable of monitoring soil temperature, preventing overheating and ensuring optimal plant comfort. The standard **power density** for these applications is approximately **120 W/m²**, with the possibility of customization.

Two main product options are available: **Polypropylene Black**: Designed for applications where **water permeability** is required. The polypropylene mesh structure allows moisture to pass through, making it ideal for cultivation benches where irrigation and drainage occur directly above the heating surface.

Aluminium Black: Featuring an aluminium diffusion layer for enhanced **heat spreading** across the cultivation surface. This version is particularly suitable for benches requiring improved **thermal uniformity** and for direct contact installations with soil or pots, always **protected by a nylon waterproof layer** to avoid liquid accumulation. Both systems **can also be produced in low voltage versions** (24/48V).

In hydroponic greenhouses, Warmset heating is supplied in the form of a **flexible heating ribbon** (loose ribbon), installed directly in **contact with the cultivation channels** or growing structures. This solution is designed to provide localized heat directly where roots and plants require thermal stability, improving crop performance and reducing the risk of cold stress. The **standard power** output for hydroponic heating ribbon applications is: **30 W per linear meter**. This makes the system extremely versatile and easy to integrate into hydroponic layouts, even in long continuous cultivation rows.

Temperature regulation is aimed at controlling the heating element and the **temperature at soil/cultivation level**, depending on the installation, and not the overall greenhouse air temperature.

Warmset solutions can be managed in two ways. The first option is the use of a **dedicated thermostat** supplied by Warmset. In this configuration, the end user sets the desired working temperature according to the cultivation needs, keeping the heating surface/soil within the required range.

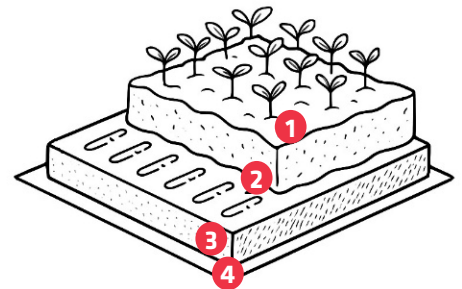
The second option is **centralized control through DIN-rail thermoregulators** installed inside an electrical panel. This solution is ideal when multiple benches or zones must be managed from a single control point, allowing organized and scalable regulation in professional greenhouses.

TYPE OF INSTALLATION

POLYPROPYLENE BLACK

INSTALLATION IN CONTACT
WITH SOIL

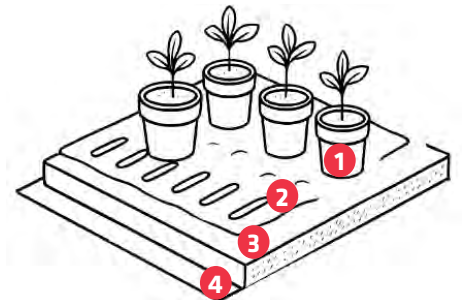
- 1 CULTIVATION SOIL
- 2 WARMSET POLYPROPYLENE MAT
- 3 THERMAL INSULATION (OPTIONAL)
- 4 BENCH OR SUPPORTING BASE



POLYPROPYLENE BLACK

INSTALLATION WITH POTS IN
DIRECT CONTACT

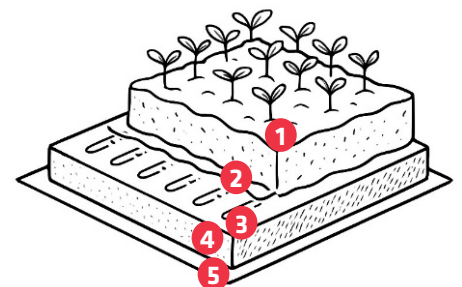
- 1 POTS / CONTAINERS
- 2 WARMSET POLIPROPILENE MAT
- 3 THERMAL INSULATION (OPTIONAL)
- 4 BENCH OR SUPPORTING BASE



ALUMINIUM BLACK

INSTALLATION IN CONTACT
WITH SOIL

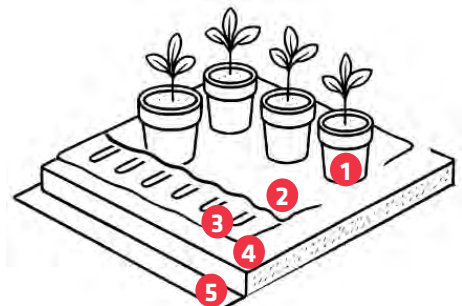
- 1 CULTIVATION SOIL
- 2 WATERPROOF NYLON (MANDATORY)
- 3 WARMSET ALUMINIUM BLACK MAT
- 4 THERMAL INSULATION (OPTIONAL)
- 5 BENCH OR SUPPORTING BASE



ALUMINIUM BLACK

INSTALLATION WITH POTS IN
DIRECT CONTACT

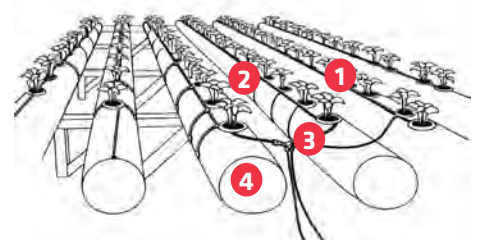
- 1 POTS / CONTAINERS
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HYDROPONIC CULTIVATION

LINEAR HEATING RIBBON

- 1 HEATING RIBBON
- 2 FIXING TIES
- 3 COLD CABLE
- 4 HYDROPONIC CULTURE



PROJECT REFERENCES

