

# PRODUCT INFORMATION

**STEP WARMFLOOR™** is a heating system designed to meet demands for human comfort, safety and energy efficiency. This heating product is the most advanced in quality, usage, and durability.

## SELF-REGULATING

STEP Warmfloor™ is a flexible, homogeneous, polymer heating element. The plastic is electrically conductive; because of resistance in the material, heat develops. The element is self-regulating which means that when the ambient temperature rises, the electrical resistance increases and the consumption of electricity decreases. For this reason, the element cannot overheat.

## LOW-VOLTAGE

STEP Warmfloor™ operates on low-voltage and does not require a ground fault switch. It is normally connected to a 24 V transformer, but can also be run by solar or wind-power source. The system is maintenance free, easily zoned and energy efficient.

## DURABLE

STEP Warmfloor™ is a strong, thin, plastic mat, 3/64 inch (1.2 mm) thick. It comes in a roll, in different widths, and can be cut to the desired length and field-wired on site. The formula to calculate the maximum element length per fuse (5A) in the terminal board is  $24V \times 5A / XX \text{ W/ft}$ ; the formula for the maximum total element length (8A) with two jumped fuses is  $24V \times 8A / XX \text{ W/ft}$ .

## EASY INSTALLATION

STEP Warmfloor™ can be installed in new construction and is ideal for renovation projects because of the thinness of the material. The heating elements come in a roll and are cut to size on site. The system is suitable and easy to fit in a whole house or only in areas where extra heating is required.

The heating elements can be installed on any stable, clean and non conductive surface. Secure the elements to the substrate so that they do not overlap or touch each other; this can be done using latex modified mortar, staples or hot melt glue. Do not use adhesives as they can negatively affect the heating properties of the semi-conductive elements. Take care not to penetrate with staples or nails the two bus braids on each side of the elements; this could create a short circuit and be a fire hazard. Make the electrical connections and run the wires to the transformer following manufacturer's instructions, electrical and local codes. The wires can be routed on the floor, up the wall, under the baseboard, or in raised foundations, under the subfloor. Cover the elements and finish the floor according to trade practices.

## **TOTAL HEAT**

STEP Warmfloor™ can be used as the primary heat source of a building. Heat requirements depend on room size and usage, insulation values, location and outside average temperature. A heat loss calculation is necessary. It is very convenient to have a heating system that can go under all types of floor coverings.

## **COMPLEMENTARY HEAT**

STEP Warmfloor™ can be installed when additions are made to a house and the existing heating system is insufficient. Make a basement comfortable without overheating the whole house or add heat to a sunroom.

## **FLOOR WARMING**

STEP Warmfloor™ eliminates cold floors. It is essential in a bathroom under ceramic tiles and it can be used in any room, under most finished floorings, including wood, laminate, carpet, resilient, and natural stone. The elements can also be installed between the floor joists when the existing floor covering is to be maintained.

## **ENERGY EFFICIENCY**

STEP Warmfloor™ can be placed safely closer to the floor surface than any other heating system. With less mass to heat, the system reacts fast to its regulated temperature.

The even distribution of heat eliminates drafts and gives a pleasant comfort at a lower temperature. Maintaining a continuous even temperature is more efficient than an on-and-off heating system.

The self-regulating heating elements only draw the energy required to maintain the ideal temperature. Individual zoning for each room is not only comfortable but also very cost effective.

When thinking of efficiency, you should take in consideration:

- a) Consumption – how much energy does the system pull compared to other heating options.
- b) Cost – what is the cost per kWh in the area (winter rates) compared to other available energy sources. Maintenance comparison should be added to the cost.

### **NOTE:**

For a heating system to be efficient it is very important to have sufficient thermal insulation. Heat goes to cold in all directions (360 degrees). If the area is not properly insulated, you may not attain the desired floor and ambient temperature and the system will not be energy efficient.