



# HeatStep™

## Floor Warming System

KITCHEN  
WOOD

STUDY  
WOOD

### **Maintenance Free**

### **Completely silent, no vents or duct work**

### **Comfortable, even heat without the drying effects of forced air**

### **Cost Efficient**

### **Warmth at your feet**

### **Description**

HeatStep™ is a comfortable, cost-efficient electric radiant heat system that can be used on concrete slab or plywood substrates. Almost every type of floor covering can be warmed with HeatStep™, including engineered hardwood, ceramic & porcelain tile, stone, laminates, vinyl, or carpet. Warm, luxurious floors are popular in bathrooms, shower floors, kitchens, entries, or any room with cold floors.

Two options are available for HeatStep™ installations to accommodate a large range of applications.

**HeatStep™ Mat** is easy, fast and designed for safety.

- Simply roll out the mats.
- Use the two-sided tape to attach to the subfloor.
- Cover with a cementitious layer and let cure fully.
- Install the floor covering.

**HeatStep™ Wire** offers the flexibility to cover large rooms and accommodate complex room layouts.

- Secure the cable straps to the subfloor
- Stretch the cable between the cable straps
- Cover with a cementitious layer and let cure fully.
- Install the floor covering.

For both options, ensure that the floor covering used is approved in writing by the manufacturer for use with radiant floor heat systems.

The cementitious layer used to cover the HeatStep™ Mat or HeatStep™ Wire may be Bostik's SL-150 Self-Leveling Underlayment, any Bostik Portland cement patch (Webcrete® 95, Webcrete® 98, UltraFinish™), or any Bostik thin set or mortar (ReFlex®, Single-Flex® F.S., Single-Flex®, Big Tile & Stone™, Bostik PM™, Porcelain-Mate™, Tile-Mate® Premium, Ditra-Set™ Thin-Set, Tile-Mate® Floor & Wall, Mud-in-a-Bag). If installing on a plywood subfloor, the thin set or mortar must be polymer modified (ReFlex®, Single-Flex® F.S., Single-Flex®, Big Tile & Stone™, Bostik PM™, Ditra-Set™ Thin-Set, Tile-Mate® Floor & Wall, Mud-in-a-Bag).

HeatStep™ thermostat controls are offered in programmable and basic models. An integral relay system is offered to control large systems. These dual-voltage controls sense floor or air temperature, have built in GFCI protection and energy-saving SmartStart technology.

Designed for safety, all HeatStep™ cables are built with dual twisted wires to shield against EMF (Electromagnetic Fields). HeatStep™ products are fully grounded and operate with ground fault circuit protection when using a HeatStep™ thermostat control.

### **Benefits of HeatStep™ Floor Warming Systems:**

- Maintenance-free
- Completely silent, no vents or duct work
- Comfortable, even heat without the drying effects of forced air heating
- Efficient – warmth at your feet
- Fewer airborne particles than when using forced air heating
- All HeatStep™ wire and mat products are made in America.



## HeatStep™ Installation Benefits

1. Adhesive strips speed up the installation process by allowing either side of the mat to be adhered to the floor so they don't move around when troweling the Bostik cementitious layer.
2. HeatStep™ Mats lay out flatter for easier troweling.
3. Thin, open-weave construction allows the cementitious layer to flow through the mat and easily bond with the underlying material. This one-step application adds only 1/8" thickness over a normal tile installation.
4. Single power lead construction makes mats easy to install and simpler to connect to the control.
5. The industry's highest-quality heating wire using ETFE high-temperature insulation, urethane jacket, and oxygen-free copper heating elements for corrosion resistance, temperature resistance, abrasion resistance, and longevity.
6. Twisted, twin-wire construction creates ultra-low EMF.
7. 120-VAC and 240-VAC models available for small residential to large commercial applications.
8. Shielded and fully grounded 10-ft. power lead provides jobsite safety and durability. Power leads are color-coded for 120 VAC or 240 VAC.

## Installation Considerations

**Substrate Prep:** Proper preparation of the substrate is critical to a successful installation. The substrate should be clean, flat, dry, and free of voids, projections, loose materials, oil, grease, sealers and all other surface contaminants. For installation on a plywood subfloor, ensure that either a second underlayment-grade layer or a cement backerboard is added to the main plywood subfloor. For concrete subfloors, a crack-isolation and insulation barrier may be used. Do not install any HeatStep™ product over expansion joints. A channel may be cut into the subfloor to accommodate the thicker splice between the heating wire and power lead.

**Efficiency:** The efficiency of the product is highly dependent on the site conditions and specific application. For example, concrete slabs that extend outside of the structure may significantly reduce efficiency as it carries heat away from the interior. Plywood subfloors with no insulation underneath may allow heat to escape to the airspace below. Using adequate insulation below the HeatStep™ layer can significantly increase efficiency, reduce heat up times, and lower operating costs.

**Cementitious Installation:** All of the heating wire and power lead splice must be fully embedded in the cementitious layer. Exposed wire or crowning will void the warranty. Be careful not to damage the heating wires with the trowel or other tools when applying the cementitious layer. Always make sure the Wire Fault Detector is connected to each HeatStep™ Mat or Wire for the entire installation process so that the location of any damage is easier to determine. Please read the installation instructions for further details.

**Engineered Hardwood Flooring Installation:** Make sure the cementitious layer is fully cured prior to flooring installation. If installed on a green concrete slab, the slab must be fully cured as well. Run the system for a minimum of 72 hours prior to installation of the flooring, and then reduce the temperature of the slab to the acceptable range for the adhesive application. After the

adhesive is fully cured, gradually increase the temperature on the thermostat by 1-2 degrees per day until the optimal heating temperature is achieved. This allows the wood to gradually acclimate and will minimize the occurrence or severity of shrinking, cracking, cupping or bowing.

*Note: At the beginning of each heating season, the same procedure of gradually increasing the heat by 1-2 degrees per day must be followed.*

## HeatStep™ Mats

HeatStep™ Mats are designed for safety and ease of installation. HeatStep™ Mats are UL® Listed for the U.S. and Canada, and are manufactured in the U.S. All mats have the "S-pattern" wire construction and produce 12 watts/sq. ft. (41 Btu/hr./sq. ft.), which is enough to heat many spaces.

## Designing a HeatStep™ Mat Floor Warming System

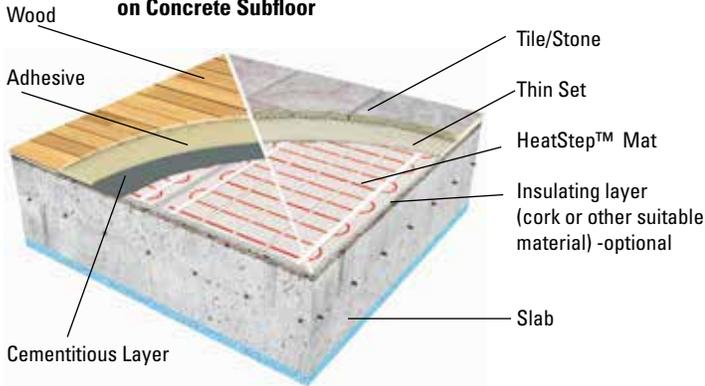
- Evaluate how many square feet of floor to be heated. Do not put under cabinets or appliances.
- Leave your HeatStep™ Mat at least 6" away from the toilet wax ring and 4"-6" away from walls.
- To keep toes warm, install right up to the toe-kick in front of kitchen or bath cabinets, and in front of a toilet, shower, or tub.
- Select one mat, or a combination of mats, to fill the area. Remember, multiple mats of the same voltage can be wired together to fill larger areas.

120 V HeatStep™ Mat Kits**					
Mat Square Footage	Mat Size (W X L)	Order Number	Amp Draw	REET Value	Ship Wt (lbs)
30	2' x 15'	K640115	3	0.06	5
40	2' x 20'	K640120	4	.1	6
50	2' x 25'	K640125	5	0.14	7
60	2' x 30'	K640130	6	0.13	9
70	2' x 35'	K640135	7	0.13	11

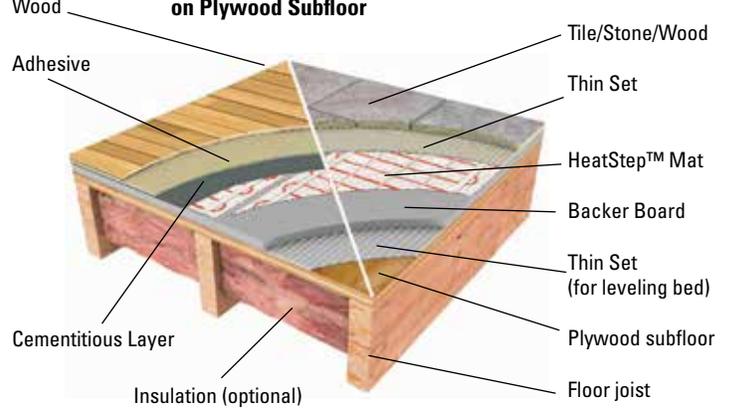
\* The REET (Radiant Electric Emissions Test) values listed above are 200% below daily exposure levels of the average U.S. citizen as reported by the National Institute of Environmental Health Sciences (NIEHS). Values are average electromagnetic field in milligauss, measured 1/2" above heating element. For more information about EMF and REET testing, please visit [www.bostik-us.com](http://www.bostik-us.com).

\*\* Mat kits include fault monitoring device and double-sided tape.

**Figure 1. Installation of HeatStep™ Mat on Concrete Subfloor**



**Figure 2. Installation of HeatStep™ Mat on Plywood Subfloor**



- The tape and mesh may be cut between wires to make turns or to fill in odd-shaped areas. **DO NOT CUT THE WIRES.**
- HeatStep™ Mat is UL Listed for installation in shower floors and benches.
- See HeatStep™ installation manual for more details.

### How much HeatStep™ Mat should I order?

1. Calculate total wall-to-wall area of the room. Subtract the square footage of all built-ins (tub, toilet, cabinets, etc.). Total area – built-ins = ( \_\_\_ – \_\_\_ ) = \_\_\_ sq. ft.
2. Multiply this area by 0.90. Round down to the nearest 5 sq. ft. This is the heated area. \_\_\_ x 0.90 = \_\_\_ sq. ft. of heated area.
3. Select the appropriate mat(s) based on the square footage of heated area from the table

below. See HeatStep™ installation manual for more details.

### HeatStep™ Wire

HeatStep™ Wire is a simple, economical way to warm floors and heat spaces to provide years of lasting comfort. It is easy to install. Not only can HeatStep™ Wire be configured to fit irregular shapes, but it can also be configured to heat multiple flooring types and locations. For example, differences in heat loss between a kitchen and breakfast area could be accommodated by using two different spacings: 3" on center (10 watts/sq. ft.) in the kitchen, and 2" on center (15 watts/sq. ft.) in the colder breakfast area. Transitions in floor covering materials can be accommodated in the same way: 3" on center (10 watts/sq. ft.) could be used under tile or thin stone, and 2" on center (15 watts/sq. ft.) spacing could be used under thicker hardwood or carpet.

### Designing a HeatStep™ Wire Floor Heating System

- Evaluate how many square feet of floor to be heated. Do not put under cabinets or appliances. Generally, about 85–90% of the open areas should be heated.
- Leave the wire at least 6" away from the toilet wax ring and 4"–6" away from your walls.
- To keep toes warm, install right up to the toe-kick in front of kitchen or bath cabinets, and in front of a toilet, shower, or tub.
- Remember, multiple wires of the same voltage can be connected together to fill larger areas.
- HeatStep™ Wire is UL Listed for installation in shower floors and benches.
- See HeatStep™ installation manual for more details.

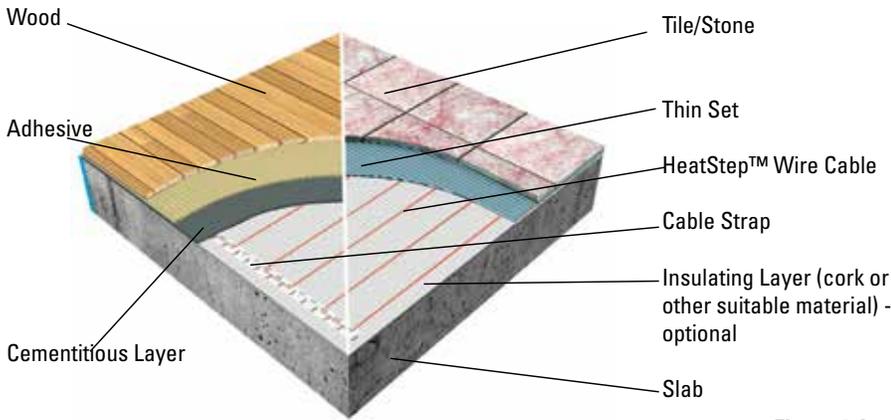
240V HeatStep™ Wire Kits							
Square Foot Coverage of various wire configurations			Order Number	Wire Length	Amp Draw	REET Value*	Ship Wt. (lbs)
2" OC	2.5" OC*	3" OC					
64	80	96	K640280	376	4	0.14	8.5
80	100	120	K640210	470	5	0.16	11
96	120	144	K640212	564	6	0.13	13
112	140	168	K640214	658	7	0.14	15
128	160	192	K640216	752	8	0.11	17

Wire Kits include Fault Monitoring Device, Double-sided Tape, and Cable Strap.

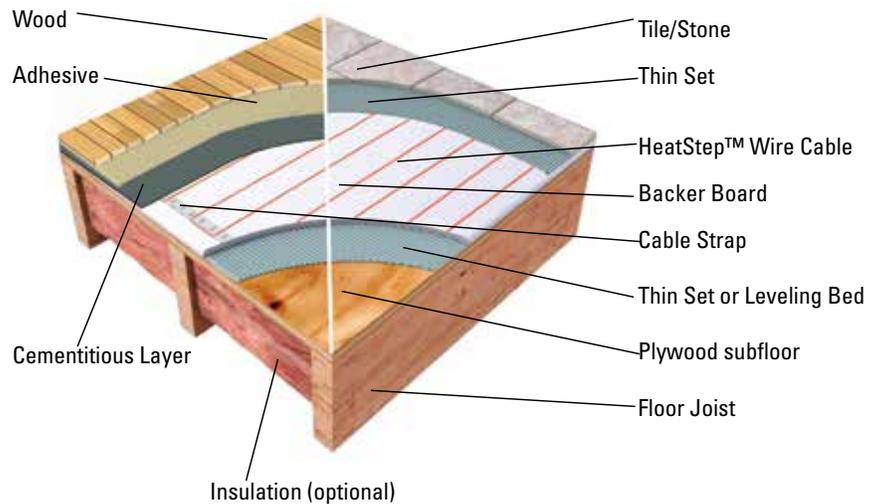
\* 2.5" on-center wire spacing is most common

\*\* The REET (Radiant Electric Emissions Test) values listed above are 200% below daily exposure levels of the average U.S. citizen as reported by the National Institute of Environmental Health Sciences (NIEHS). Values are average electromagnetic field in milligauss, measured 1/2" above heating element. For more information about EMF and REET testing, please visit [www.bostik-us.com](http://www.bostik-us.com).

**Figure 3. Installation of HeatStep™ Wire on Concrete Subfloor**



**Figure 4. Installation of HeatStep™ Wire on Plywood Subfloor**



## How much HeatStep™ Wire should I order?

1. Calculate total wall-to-wall area of the room. Subtract the square footage of all built-ins (tub, toilet, cabinets, etc.).  
 $(\text{Total area} - \text{built-ins}) = (\text{---} - \text{---}) = \text{--- sq. ft.}$
2. Multiply this area by 0.90. Round down to the nearest 5 sq. ft. This is the heated area.  
 $\text{---} \times 0.90 = \text{--- sq. ft. of heated area.}$
3. Choose a "spacing factor" of 2", 2.5", or 3" on center. Below are guidelines for application and spacing recommendations.
  - 2" on center = 15 Watts/sq. ft. Use on concrete basement slabs, sunrooms, and in other high heat loss areas.
  - 2.5" on center = 12 Watts/sq. ft. Use in bathrooms, kitchens, dining/living areas, etc.
  - 3" on center = 10 Watts/sq. ft. Use in hallways, entries, low heat loss areas, etc.
4. Select the appropriate wire(s) based on the square footage of heated area and the "spacing factor"

### HeatStep™ Warranty

All HeatStep™ Mat or HeatStep™ Wire products come with a 10 Year Limited Warranty, or a 25 Year Limited System Warranty. HeatStep™ thermostats and relay come with a 2 Year Limited Warranty.

### Limited Warranty

The Limited Warranty for this product can be found at [www.Bostik-US.com/resource-center/warranties](http://www.Bostik-US.com/resource-center/warranties) or by calling 1-800-726-7845 (choose option 2, then option 2 again). TO THE MAXIMUM EXTENT ALLOWED BY LAW, BOSTIK DISCLAIMS ALL OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. UNLESS OTHERWISE STATED IN THE LIMITED WARRANTY, THE SOLE REMEDY FOR BREACH OF WARRANTY IS REPLACEMENT OF THE PRODUCT OR REFUND OF THE BUYER'S PURCHASE PRICE. BOSTIK DISCLAIMS ANY LIABILITY FOR DIRECT, INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES TO THE MAXIMUM EXTENT ALLOWED BY LAW. DISCLAIMERS OF IMPLIED WARRANTIES MAY NOT BE APPLICABLE TO CERTAIN CLASSES OF BUYERS AND SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. It is the buyer's obligation to test the suitability of the product for an intended use prior to using it. The Limited Warranty extends only to the original purchaser and is not transferable or assignable. Any claim for a defective product must be filed within 30 days of discovery of a problem, and must be submitted with written proof of purchase.

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