Waxman
heating the nation

PRIMARY HEAT™

Under-floor heating system

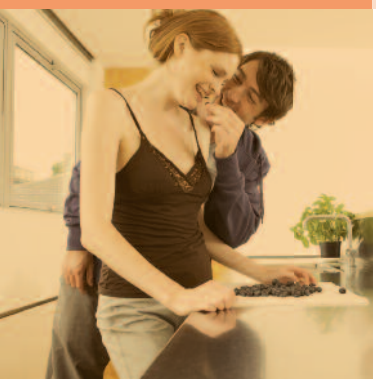
The technology of tomorrow

Under tiles, carpet, wood and vinyl

Under-floor heating that warms the whole home

Imagine a heating system without radiators that can keep the whole home warm. Primary Heat™ from Waxman is designed to do just that. It is a primary heating system which can be used to heat the whole house, or any number of rooms you require, without the need for additional radiators or heating supply and is therefore completely discreet.

Primary Heat™ can be installed easily under many different kinds of floor covering including carpet, vinyl, ceramic tiles, natural stone and marble tiles, wood and laminates.



How does it work?

Primary Heat™ is a major advance in the field of under-floor heating systems. It is based on innovative heating ribbon technology. In this technology a crystalline metal alloy replaces the traditional electrical heating elements, achieving outstanding energy efficiency, safety, flexible installation and maintenance free long life. The result is an unobtrusive in-floor heating system that provides quick and evenly distributed natural warmth, making it the first, truly complete residential heating solution.

Because the crystalline ribbons are extremely thin and have no mass in which to store the heat, the generated heat is released immediately, transferring almost 100% of the power it uses into heat.

Primary Heat™ under-floor heating mats when laid cover around 25% to 30% of the total floor area, compared to around 2% when using traditional cable under-floor heating systems. This allows the installation to operate at a lower temperature of around 30°C providing a more comfortable warmth.

Heat where you want it, when you want it!

As each room is controlled by its own programmable thermostat, it is easy to control which rooms are heated at what time. Each room can also be set to a different temperature if required.

Where can it be used?

Primary Heat™ is suitable for installation as a primary heat source into existing properties, as well as new build for both domestic and commercial applications. It can be used for the whole house or for any number of rooms required and can be used in any room in the house, including bathrooms, kitchens and conservatories.

Primary Heat™ Mat Advantages

Superior heating performance

- Superb, even heat distribution due to the large surface area
- Rapid heat transmission to the floor. Heating effect is felt more quickly than other in-floor heating methods.

Easy installation

- Flexible, standard sized mats cover all room sizes and shapes
- Connection ready. Each mat includes the ribbon, connectors and covering, insulation and electrical cables
- Ultra-thin profile, ensures floor surfaces remain smooth and enables retrofits.

Space saving - no need for radiators

- Creating valuable wall space allows you freedom to design your room layout as you wish.

Highly cost effective

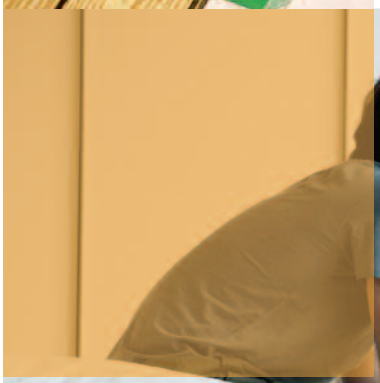
- Heat in each room is controlled individually
- No heat is lost in transformers
- Maintenance-free
- Direct heating of flooring material
- Conserves energy and speeds heating effect.

Total safety

- Fully integrated earth and EMF shielding
- Negligible electromagnetic field (just 2.1% of established permissible value)
- Enhanced control options. External thermostat has both ambient air and floor temperature sensors.

Enhanced comfort and health

- Even distribution of heat prevents hot-spots
- Reduces circulation of airborne dust and contaminants
- Radiant heat does not depend on moving large volumes of air
- Multi-use ie: Under tiles, carpet, wood and vinyl.

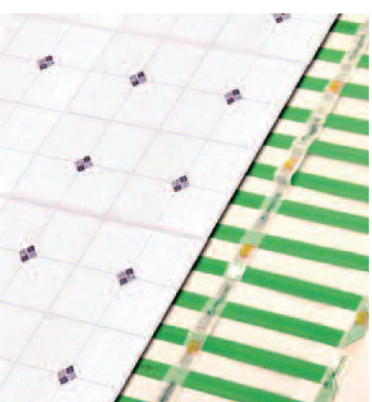


- Ultra-flat ribbon
- Highly energy efficient
- Superb heating performance
- Advanced safety features
- Easy installation.

Maintenance Free Heating

Primary Heat™ installations require no annual maintenance or servicing, providing many years of trouble free heating. However, in the unlikely event of a failure, the fault can be located to within 10cm, allowing repairs to be undertaken with minimum disruption to the floor covering.

Mats are also connected to the thermostat in parallel, therefore the faulty mat can be easily isolated while awaiting repair and the rest of the system continues to work as normal.



Thermostat Controls

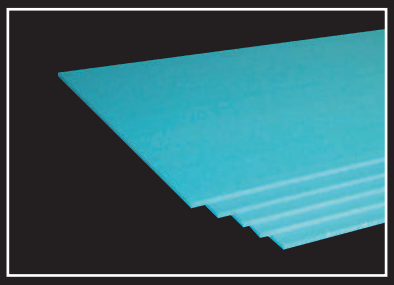
The Primary Heat Thermostat is fully programmable with an LCD screen and has both an ambient air temperature sensor and a floor temperature sensor.

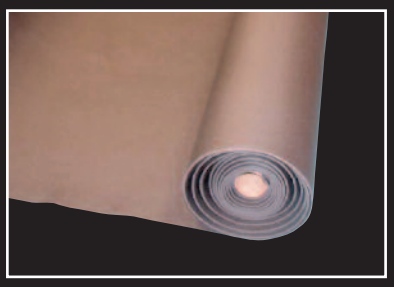
Hard Insulation Boards (600mm x 1200mm)

Primary Hard Insulation Boards are produced from extruded polystyrene, offering good thermal and sound insulation under tiles, natural stone, vinyl, linoleum and glued carpet or solid wood.

Soft Insulation Rolls (1.5m x 6.6m and 1.5m x 13m)

Primary Soft Insulation is produced from closed cell linked polyethylene foam, offering good thermal and sound insulation under carpet, engineered wood, laminate and parquet.



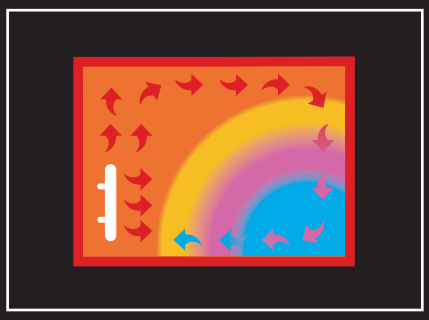


The concept of Radiant Heat

Radiant heat emanates from its source naturally and does not depend on moving large volumes of air to distribute warmth like conventional convective heating systems. Studies conducted by the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) indicate that with radiant heating systems people can be comfortable at temperatures 2°C to 4°C lower than with convective systems. In well insulated homes this can lead to dramatic cost savings over conventional heating systems.

Radiant Heat

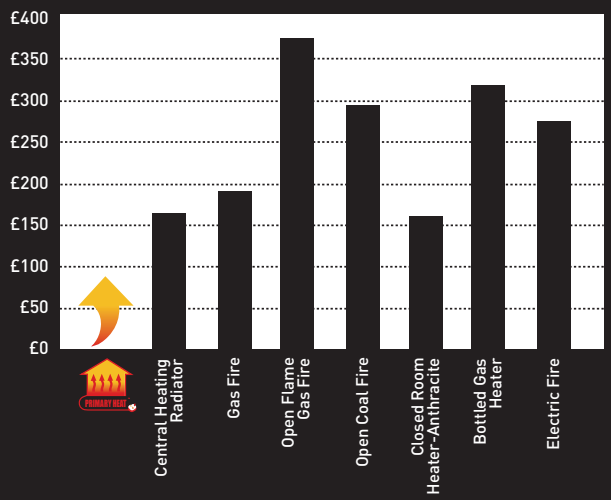
Convective Heat



How to calculate running costs

Room Size	12m²	3m x 4m
Mat Coverage	10m²	(80%)
Total Daily Power	15kWh	(If on constantly for 10 hours a day)
Total Daily Consumption	3.75kWh	(Based on thermostat cycle of 25%)
Total Monthly Consumption	114kWh	(30.4 days)
Total Annual Consumption	912kWh	(8 months)
Annual Cost	£89.46	(Tariff 0.0981 p/kWh)

Cost per Annum

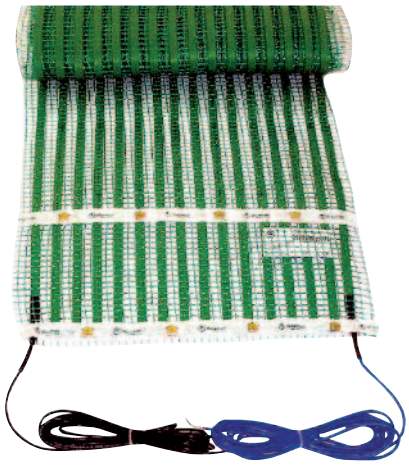


Calculations assume room is insulated to meet part L. Total Daily Power is based upon a timer thermostat to be set to operate for 10 hours per day. Total Daily Consumption is based on a thermostat cycle of 25% of the operating time.

Source: Powergen website quoting domestic heating costs for October 2003 and adjusted to incorporate an increased power cost of 0.0975p per kWh. Costs quoted do not include standing charges or maintanence/servicing costs. Waxman Energy Solutions Ltd provides the above costs as a guide only and they are due to fluctuate in energy cost performance.

What do you need?

Primary Heat™ Under-floor Heating Mats



	Code	Width	Length	Area	Watts/Mat 150w / m²	Current 0.65 amps / m²
0.5m width	PHM-512	0.5m	1.2m	0.60m²	90w	0.39 amps
	PHM-515	0.5m	1.5m	0.75m²	112.5w	0.49 amps
	PHM-520	0.5m	2.0m	1.00m²	150w	0.65 amps
	PHM-525	0.5m	2.5m	1.25m²	187.5w	0.82 amps
	PHM-530	0.5m	3.0m	1.50m²	225w	0.97 amps
	PHM-535	0.5m	3.5m	1.75m²	262.5w	1.14 amps
	PHM-540	0.5m	4.0m	2.00m²	300w	1.30 amps
	PHM-560	0.5m	6.0m	3.00m²	450w	1.95 amps
1.0m width	PHM-115	1.0m	1.5m	1.50m²	225w	0.97 amps
	PHM-120	1.0m	2.0m	2.00m²	300w	1.30 amps
	PHM-125	1.0m	2.5m	2.50m²	375w	1.63 amps
	PHM-130	1.0m	3.0m	3.00m²	450w	1.95 amps
	PHM-135	1.0m	3.5m	3.50m²	525w	2.28 amps
	PHM-140	1.0m	4.0m	4.00m²	600w	2.60 amps
	PHM-150	1.0m	5.0m	5.00m²	750w	3.26 amps
	PHM-160	1.0m	6.0m	6.00m²	900w	3.90 amps

IMPORTANT NOTICE

All electrical connections must be performed by a fully qualified electrician and in accordance with the NEC (National Electrical Code). All information provided in this document, including technical statements, research results, analyses and recommendations, is given on the basis that no warranties or representations expressed or implied are given or made as to its accuracy. The information given in this document does not and will not form part of a contract entered into by Waxman Energy Solutions Ltd for the sale or supply of the products referred to in it. Waxman Energy Solutions Ltd excludes all liability arising directly or indirectly out of any reliance upon the information given in this document.

- When used under carpet the combined Tog value of the carpet and the underlay should not exceed 2.8 Tog
- Usage as a primary heating source is based on rooms being insulated to meet part L of the building regulations and a mat coverage of 80% of the floor area. In bathrooms where 80% is not achievable the addition of a heated towel rail may be required.

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