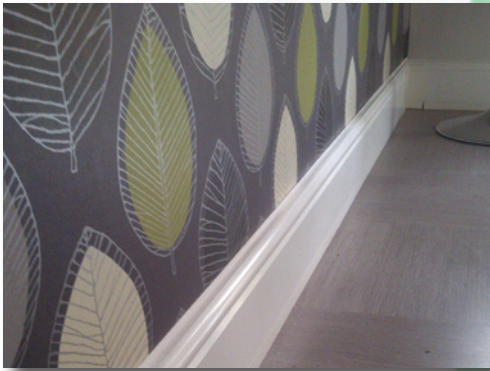


Heating designed for today



"Radiators? . . .
. . . No Thanks!"

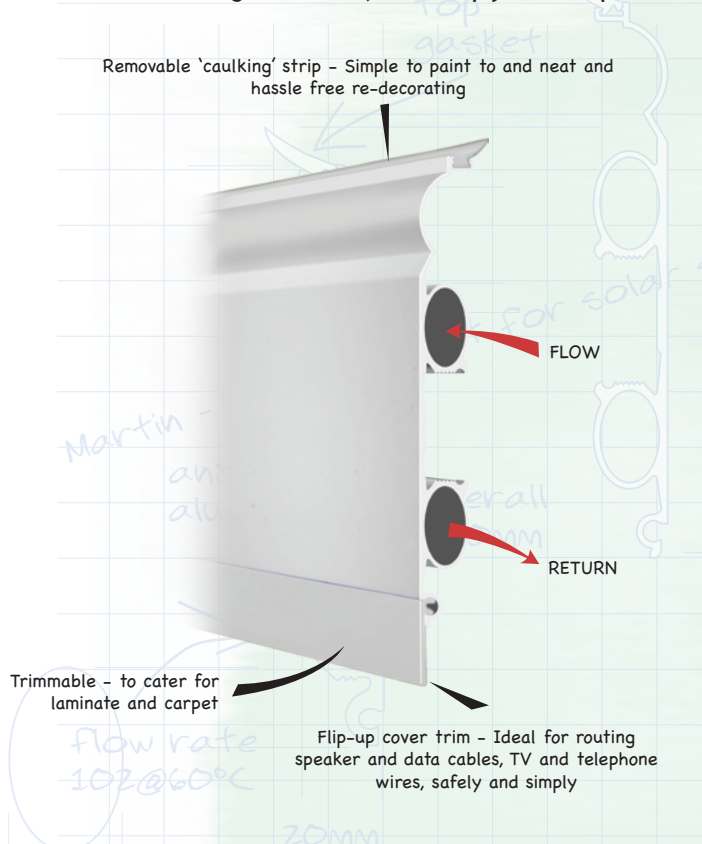


- the response of a radiator .
- the comfort of underfloor heating .
- the simplicity of skirting .



What is ThermaSkirt?

ThermaSkirt® is a high tech alloy polymer extrusion that replaces the skirting boards and radiators in one. Warm water flows through the patented integral oval tubes and heats the skirting front. This distributes the heat quickly and evenly all around the room, at low level - just like under floor heating. In addition, it frees up your wall space to maximise your usable living area.



- ✓ **ThermaSkirt provides the skirting boards and radiators in one - saving cost**
- ✓ **True radiant heating solution like under floor heating, without the hassle**
- ✓ **Available in a range of profiles, finishes and colours to suit your home**
- ✓ **Easy to install - renovation or new-build, extension or conversion**
- ✓ **Works with conventional boilers and renewables such as Heat Pumps**
- ✓ **Manufactured in the UK & tested to European Standards EN442-1**
- ✓ **Elegantly heat your room without losing space to ugly radiators**
- ✓ **Improved Energy efficiency, typically up to 25% with renewables**
- ✓ **Clean, hygienic heat, maintenance free and no dust marks**
- ✓ **Quickly creates a comfortable, controllable & even room temperature**
- ✓ **Safe & Secure with no sharp edges or exposed pipes, and lower operating temperatures**
- ✓ **Simple re-decoration with no draining down or radiators to move**

Comfort

ThermaSkirt® can make the room feel comfortable at lower operating temperatures. This can save up to 25% on your annual heating costs and significantly reduce your carbon footprint.

Control

ThermaSkirt® is able to respond in minutes, whatever your floor construction or finish, and being able to control the heating so quickly enables you to use just enough energy, only when you need it. This can also help reduce your fuel bills. (For a choice of control systems, see Control Systems section).

Eco Friendly

The larger surface area afforded by ThermaSkirt® enables renewables such as solar panels or heat pump system to be used. As it is fitted 'above ground' it can be installed in many more existing buildings - something that would be impossible without the upheaval required to fit underfloor heating.

Versatile

ThermaSkirt® can be installed directly onto the existing heating system if required, eliminating the need for sophisticated manifold, control & actuators. Alternatively, a manifold and room sensor may be employed for precise room temperature and surface temperature control. (See Control Systems - Thermiser).

Mixed Systems

ThermaSkirt® can work in conjunction with UFH to provide a responsive and complimentary alternative to radiators at 1st floor, or when renewable energy sources are employed. ThermaSkirt® can be installed and operated in conjunction with existing radiators.



All images shown are real customer installations.

.. distributes heat quickly and evenly all round the room

Where Can I use It?



Mr & Mrs Antonelli, Glasgow

Living and Dining Spaces

By freeing up valuable wall space and improving the comfort levels of your living and dining spaces, you can increase the desirability and value of your home.

ThermaSkirt® is supplied with a removable top 'caulking gasket' and bottom 'cable cover trim'. The colour coordinated caulking gasket enables you to remove it for painting and decorating, and replace for a perfect neat finish, whilst the removable bottom cable cover allows you to route computer, home cinema and AV cables around the room, hidden behind the skirting.

Kitchen and Bedroom

Even rooms with fitted furniture can have ThermaSkirt®. By installing along the plinths of the units you can maximise usable storage space without losing a wall to a radiator. The plinth heating panels are easily fixed into place onto the existing plinths if required. The Urban LT and Deco PR are most suitable for this application.



Mr & Mrs Pluta, Lincolnshire



Conservatories, bi-fold fold doors, basements and loft conversions

Heating a conservatory is notoriously hard to do, and with many constructed with low walls or bi-folding doors, usable wall space is at a premium.

ThermaSkirt® can provide a number of innovative solutions, including curved walls, colour match foil to the windows, and across-the-threshold heating to ensure the conservatory is as comfortable and as cosy as is practically possible.



Mr & Mrs Vaughan, Ireland



Brian Caswell



Mr Alan Littlehales, Wolverhampton



B&Q Eco House, Southampton



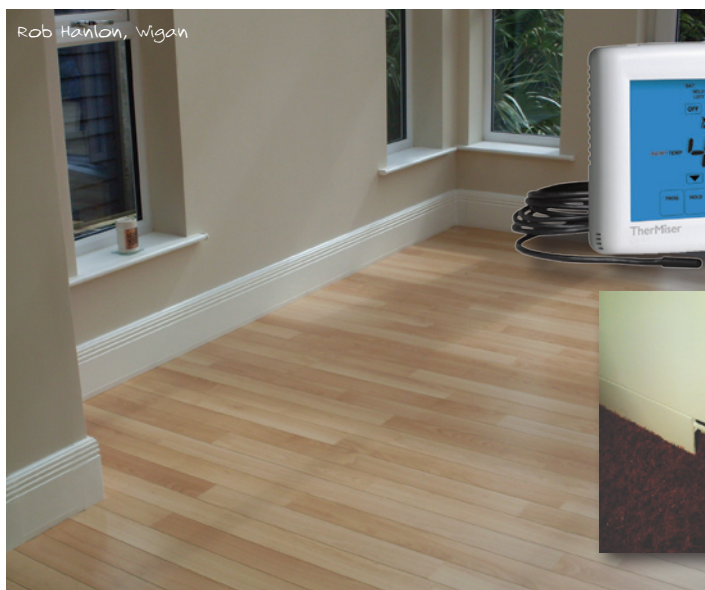
Mr & Mrs Kelly



Mr & Mrs Stevenson

All images shown are real customer installations.

.. designed and manufactured for contemporary living



How Can ThermaSkirt help me with my RHI or Green Deal project?

Installing renewables such as ground source and air source heat pumps and solar thermal systems is only half the story. Renewables work best when the properties are well insulated and the room heating system can operate at lower temperatures.

Lower operating temperatures allow the heat pumps and solar thermal systems to achieve a greater Coefficient of Performance (CoP). Higher operating temperatures reduce the heat pumps and solar thermal systems CoP and thus efficiency, and may require an electric immersion heater back up - eliminating any energy or CO₂ savings.

Lower operating temperatures therefore require greater surface areas and better heat distribution - something ThermaSkirt® easily delivers. Underfloor heating is often promoted as the most suitable room heating system, but this would require major disruption to an existing property and is practically impossible to achieve full efficiency under timber or carpet floor coverings.

Oversized radiators are often specified, but these can be up to double the size of the high temperature radiator they are replacing, and take up even more wall space. Fan assisted radiators tend to spread dust and allergens, but even these cannot evenly heat the room, and also create cold and hot spots.

ThermaSkirt® is suitable for the retro fitting of renewable heat sources such as heat pumps, as it provides the greater surface area and even heat distribution of UFH, with minimal disruption and response times.

Surface Temperature Controls

Special low surface temperature controls are available for use in Nurseries, Care Homes and all sensitive areas.



ThermaSkirt is also the winner of the prestigious Best Innovative Product award at the National Heat Pump Awards for 2012.



.. lower operating temperatures and greater efficiency

Profiles and Colours

ThermaSkirt is uniquely available in 4 distinct profiles and over 6 different finishes to suit any property or development. Special profiles and finishes may be made to order, depending on the size of the project.

URBAN LT
'Lambs Tongue' profile

Colours Available

150mm (6 in.)

20mm (0.8 in.)

Handwritten notes: "top gasket", "overall 150mm", "anodised", "545"

CLASSIC TS
'Torus' profile

Colours Available

150mm (6 in.)

20mm (0.8 in.)

Handwritten notes: "Torus", "Class"

REGENCY OG
'Ogee' profile

Colours Available

200mm (8 in.)

20mm (0.8 in.)

Handwritten notes: "flow", "1320", "150mm", "remov", "100mm", "150mm"

DECO PR/BM
'Pencil Round' profile

Colours Available

115mm (4 1/2 in.)

20mm (0.8 in.)

Handwritten notes: "Dual purpose", "regency", "L1", "L2", "40mm", "20mm", "150mm", "L1 - 40mm", "L2 - 20mm"

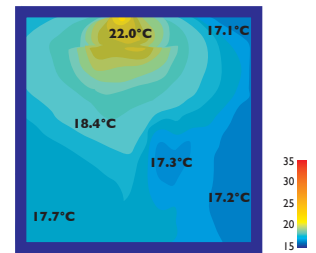
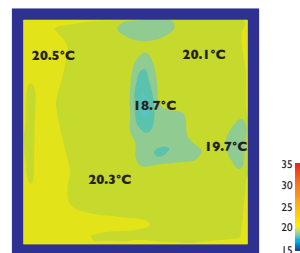
- Cricket White (CW)
- Vintage Ivory (VY)
- Silver Birch (SB)
- Carbon Black (CB)
- English Oak (EO)
- Golden Oak (GO)
- African Wenge (AW)
- Paint Your Own (PO)

Greater Comfort = Greater Energy Efficiency

As ThermaSkirt® heats the room from all directions at low level, you eliminate drafts or hot spots created by the convection (movement of air) that radiators need to heat the room. Heat rises and then cools meaning that radiators heat the ceiling first before you - often requiring radiators to be up to 30% bigger than the room requires to compensate.

Test results show that the unique thermal distribution pattern of ThermaSkirt® is practically identical to underfloor heating (UFH), with only a $\pm 1.3^\circ\text{C}$ variation compared to a radiator with a massive 13°C variation (BSRIA test report 51397/1).

This equates to at least a **13% improvement** in energy efficiency.



.. heat distribution proven to be far superior to radiators

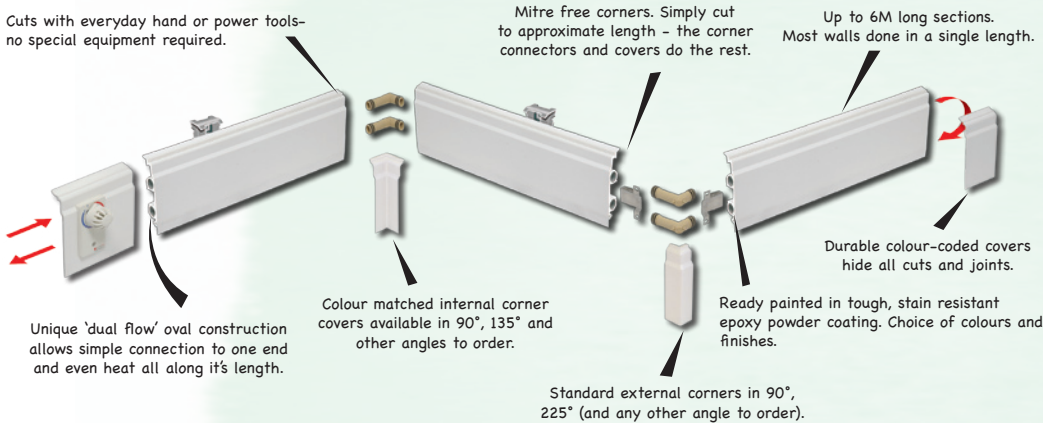
Easy to Install

ThermaSkirt® can be installed into both new build and refurbishment projects - often utilizing the existing pipework layouts. As it is 'above ground' there is minimal disturbance to the property and there is no restriction on the final choice of floor finish - ThermaSkirt® works as well with carpets and laminate as it does with tiles or marble. Simply connect onto standard radiator style plumbing with the patented connectors (radiator replacement kits available) and in a matter of hours your room or even the whole house can be radiator free, and with the added benefit of new, freshly painted skirting boards.

In a new build, ThermaSkirt® can reduce and simplify pipework runs as feed and returns are to 'one end' of the room, usually near the door, and it eliminates the need for additional skirting board, its installation and painting.

Matching MDF in all profiles is available for other non-heated areas or where conventional radiators are retained. Special solutions including curved wall sections, crossing thresholds, heating across bi-fold sun room doors and even up and over doors are all available with ThermaSkirt®.

Simple Installation

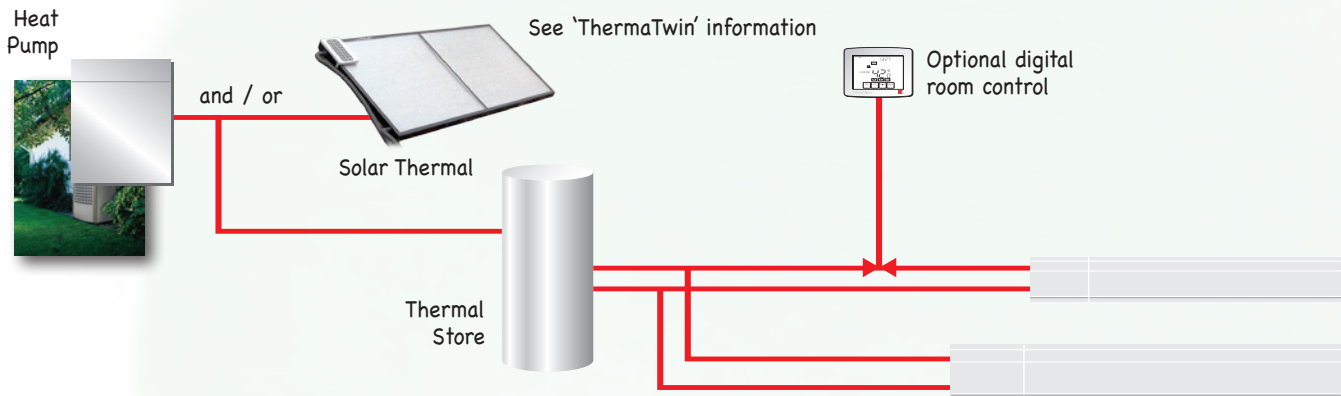


Retrofit Installation at St. Vicent's Housing Association

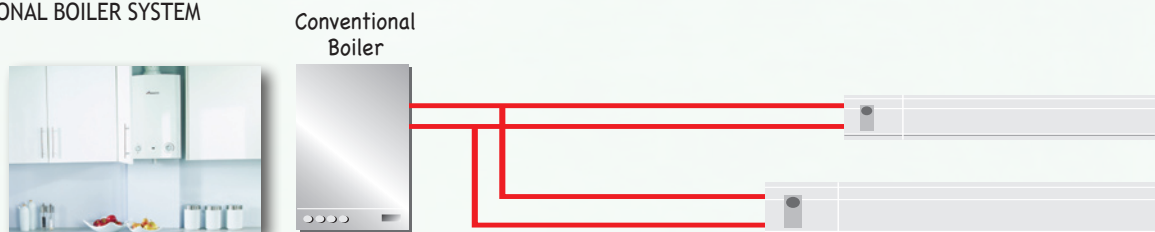
Highly efficient aluminium composite extrusion gives up to 170W per metre length.

Typical Installation Examples

TYPICAL RENEWABLE ENERGY SOURCE SYSTEM



TYPICAL CONVENTIONAL BOILER SYSTEM



Reduced flow temperatures are possible, improving boiler efficiency. (Source: BRE and Energy Saving Trust)

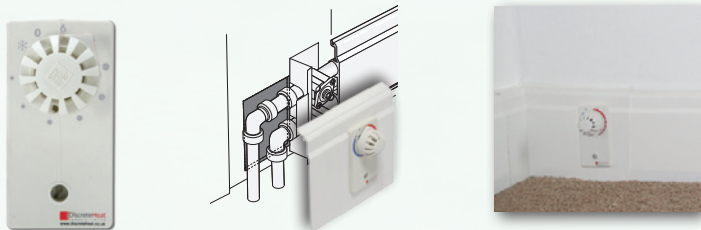
.. stylish, practical and energy and space efficient

Flow Control Systems

Simple mechanical TRV, either 'on board' or via capillary operation, provides a cost effective and practical room control system. TherMiser control systems are designed to provide precise remote control of ThermaSkirt heating system, to closely maintain the desired room temperature and timings and providing a completely discreet heating system. Low surface temperature control for additional safety, or wireless multi-room zone control for ease of installation are also available.

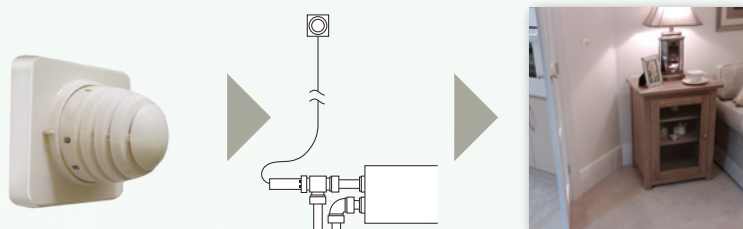
MECHANICAL

MANUAL TRV



- ✓ Simple comfort control TRV
- ✓ 'On-board' design for instant operation
- ✓ Colour coordinated knob and fascia plate
- ✓ Integrated lock shield valve for local isolation
- ✓ Direct connection to standard 15mm pipes

WALL MOUNTED CAPILLARY ACTION TRV

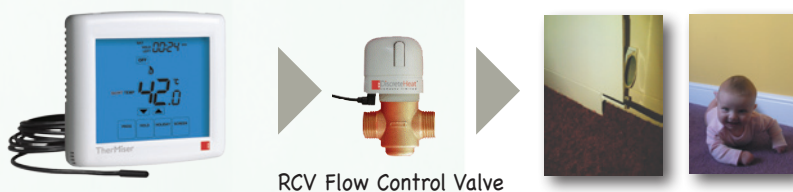


- ✓ Simple room temperature control at accessible height
- ✓ Ideal for care homes or elderly residents
- ✓ Accurate temperature with lockable Min/Max settings
- ✓ Easy to clean and easy to read
- ✓ Miniature capillary tube connects to hidden TRV control valve

ELECTRONIC

THERMISER SINGLE ROOM & LOW SURFACE TEMPERATURE CONTROL SYSTEM

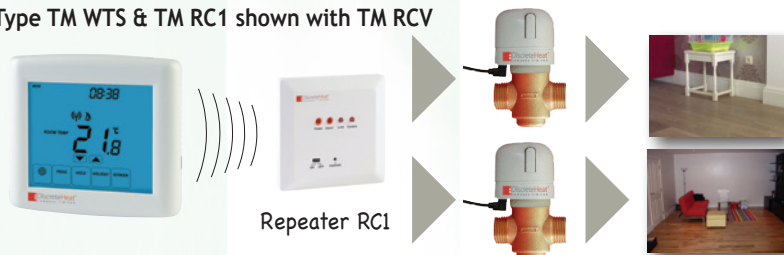
Hard Wired, Type TM- ETS with TM RCV



- ✓ Electronic Touch Screen with 7 day/ 4 period programming
- ✓ Room and ThermaSkirt surface temperature control for LST applications such as hospitals, care homes and nurseries.
- ✓ Standard 35mm Switch back box mounting
- ✓ 230v AC control
- ✓ Eliminates manual TRV control knob on skirting

WIRELESS 2 ROOM / CONTROL SYSTEM

Type TM WTS & TM RC1 shown with TM RCV



- ✓ Wireless Touch Screen with 7 day/4period programming.
- ✓ 2 Zone wireless receiver can control 2 separate zones/room
- ✓ Eliminates manual TRV control knob on skirting
- ✓ Control valve secreted in cupboard or floor/wall/ ceiling void
- ✓ Rechargeable battery (Touch Screen)
- ✓ 230v Hard wire supply to TM RC1 and onto TM RCV control valve

WIRELESS MULTI ROOM MANIFOLD CONTROL SYSTEM

Type TM - WTS



- ✓ Wireless room control for up to 8 Zones/areas
- ✓ Direct connection from Control unit to Manifold actuators - no intermediate control unit required.
- ✓ Rechargeable, portable touch screen thermostats
- ✓ Programmable for time & temperature.
- ✓ Complete range of manifolds from 2 - 8 ways

.. heat, when and where you want it - quickly

Technical Information

Performance *

Output/Flow Temp	Profile	Typical Radiator Temp. ΔT_{50} (72°C / 160°F flow)	Typical Heat Pump/Solar Thermal System				Typical Boiler Flow Temps.		
			40°C / 104°F	45°C / 113°F	50°C / 122°F	55°C / 131°F	60°C / 140°F	70°C / 158°F	75°C / 167°F
Watts/m	URBAN LT	148.5	46	59	73	88	104	142	159
@ 56 g/sec	CLASSIC TS	150	47	60	74	89	105	144	160
flowrate	REGENCY OG	171	53	68	84	101	119	163	183
	DECO PR	134	41.5	53	66	79	94	128	143

ΔT_{50} is the EN 442-1 norm for comparing radiator outputs

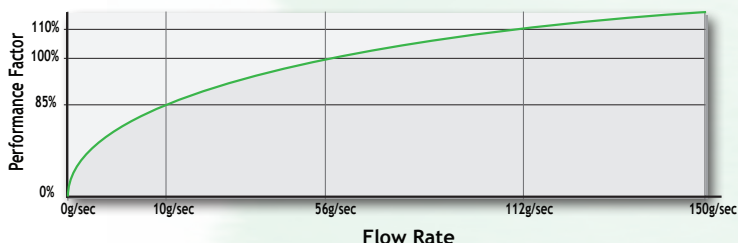
Low flow temperature to maximise annualized COP

Renewables often produce flow temperatures in excess of 45° if required

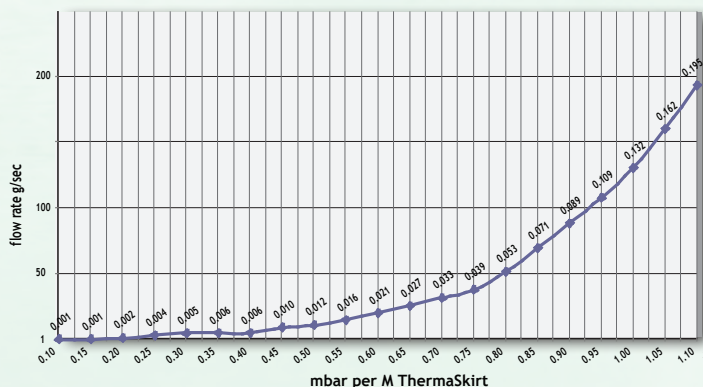
Reducing flow temperatures ensures condensing boilers operate most efficiently 100% of the time and not just on start-up. (Source: BRE & Energy Saving Trust).

* DiscreteHeat recommends an allowance of up to 3% to these outputs on exterior walls to allow for back losses. Further precautions may be required depending on the age and/or nature of the construction of the building - please contact DiscreteHeat for advice.

Stated Performance Vs Flow Rate



ThermaSkirt Flow Resistance mbar per M



Performance Vs Flow Rate

Output in Watts/m (or BTU/ft) is only slightly affected over a wide range of flow rates. Our typical test data is based on 56g/sec in accordance with the BSRIA test BS EN 442-1. Output data is given here for flow rates between 10g/sec & 112g/sec which covers the lower and upper ranges of suitable performance for central heating systems.

For more technical details please visit: www.thermaskirt.com/technicaldata.aspx

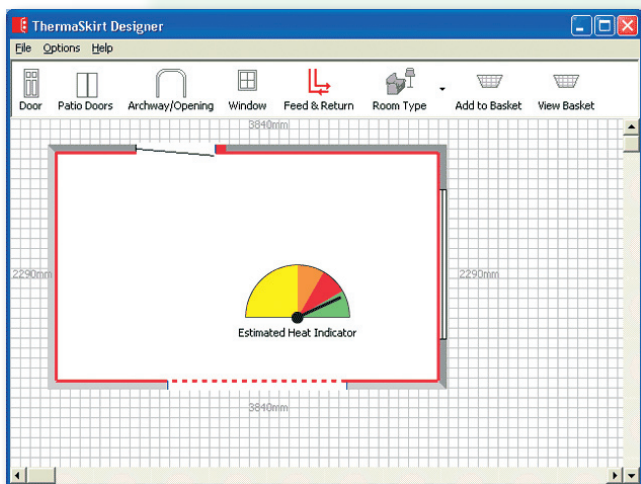
Design On-line

Log on to our website - www.discreteheat.co.uk and go to the software page. Just follow the simple steps and you can create your own ThermaSkirt® heating system - in minutes! It will even work out your heat loss estimate!

ThermaSkirt® can be supplied in pre-cut ready-to-install room kits, complete with your numbered room plan. You or your installer can also buy in 6m lengths and follow the step-by-step instructions supplied. Our unique algorithm program will give you a cutting schedule to minimise waste when you click 'Cut it Yourself' on the checkout page.

Full instructions from: www.discreteheat.co.uk/downloads/technical/instructions.pdf

Warranty: ThermaSkirt® is protected by a 10 year parts warranty on all wet parts when installed in accordance with BS EN 5793. Further details at: www.discreteheat.co.uk



ThermaSkirt Design On-line Screen

Other information available:



QR Code



Follow us on:
[twitter](#)
[facebook](#)

As Seen On:



ThermaSkirt is protected by patents, granted and pending in the UK, Europe, Australasia, China & the USA.

Solar Hot Water - PV Powered



"Free hot water? . . .
. . . Yes Please!"



• simple • efficient • clean •



What is ThermaTwin?



Installation at Bournville Village Trust, Bournville.

ThermaTwin is a unique flat plate solar thermal collector, which uses the power of the sun to heat the water and power the pump and controls. As a result the system is completely 'off-grid', and maximises the total energy available to provide the domestic hot water for the home whilst reducing the carbon consumed during operation to effectively zero. Manufactured in the UK and with more than 3,000 systems installed, ThermaTwin offers a robust, practical and affordable solution to your hot water and heating requirements.

Consider the following advantages:

- ✓ Solar 'twin' powered - uses solar thermal to heat the water and solar PV to drive the pump and controls; completely free hot water.
- ✓ Up to 120L of preheated water can be stored from one panel (usually enough for a 2-3 person property).
- ✓ Freeze tolerant - uses no Glycol or anti freeze minimising servicing and maintenance costs.
- ✓ Direct heating - fresh clean water is heated and pumped directly into the hot water storage tank, maximising efficiency.
- ✓ No Drain Back - simple anti-overheating mechanism so no complicated controls.
- ✓ Simple installation - usually half the time of a traditional solar thermal collector.
- ✓ Robust & reliable - twin-wall polycarbonate window is hail, football and vandal proof.
- ✓ 20 year Collector Warranty and 2 years on all indoor parts and components.
- ✓ Hygienic and clean - Fresh water constantly replaced and heated, avoiding infection.
- ✓ Light and manageable - Epoxy powder coated aluminium frame ensures an all in weight of under 30kg easing installation, reducing risk and minimising roof loading.
- ✓ Solar Key Marked to EN 12975 - Eligible for RHI, GreenDeal & SEAI Grants.

How is ThermaTwin Installed?

Usually installed in under a day, ThermaTwin provides a simple, maintenance free, robust and reliable system that can provide up to 100% of your hot water during the summer, 70% during Spring & Autumn and up to 30 % during the winter - absolutely free.

By eliminating the use of glycol or anti freeze, the ThermaTwin panel needs no refills or level checks, as it uses the direct mains water feed into the property. The panel uses a unique freeze-tolerant pipe that eliminates the need for drain back or other complicated control systems; fewer moving parts and controls means less maintenance & less to go wrong. This mains water is heated by the thermal panel and pumped directly into the hot water tank using the on-board PV panel as power for the pump, with minimal plumbing or disturbance. This makes it an ideal bolt-on to the 1,000,000's of homes in the UK running a non-pressurised system and header tank, as no heat exchanger is required, boosting overall system performance and reducing installed cost.

Thermal (Multi-fuel) Store

Where more than one heating source is installed, DiscreteHeat can provide a range of Multi-fuel Thermal stores, designed to take hot water from a variety of fuel sources as well as the ThermaTwin solar panel. These could be gas, oil, electric or biomass boilers or indeed a heat pump.

Combi Boilers

In smaller properties utilising a combi-boiler, DiscreteHeat can provide a compact pre-heat thermal store, especially suitable for combi's. Up to 120L of preheated water can be stored, (usually enough for a 2-3 person property), which reduces the amount of gas required to service the house to an absolute minimum. Thermal Stores are available to enable ThermaTwin systems to be installed in conjunction with pressurised sealed boilers.

Hard Water Areas

In areas of harder water (80 -180 ppm of calcium carbonate) we recommend the use of scale reducing crystals (Fernox LSP or similar). For very hard water areas (180ppm or above) DiscreteHeat recommends a water softener and/or a thermal store, which the company can supply. Please contact DiscreteHeat for further information.

.. completely 'off grid' to create free hot water in operation

Case Studies



CASE STUDY 1

Location: Bourneville Village Trust, Shenley, Birmingham.
Application: Social Housing
Product: 142 properties with 200 ThermaTwin type Solar Thermal Panels

The Bourneville Village is a desirable and environmentally friendly place to live, helped in part by their ThermaTwin solar thermal panels. ThermaTwin is a unique panel that uses no glycol or complicated drain back tanks and uses the power of the sun via an onboard PV panel to power the pump and controls.

"At BVT we have over 200 panels installed, for over 5 years and have had great reports from the tenants..the solar thermal panels have given us no problems, and have been practically maintenance free. We can easily see us using more of them on future projects"

Hitesh Champaneri, Development Manager, Bourneville Village Trust



CASE STUDY 2

Location: Falcon Housing
Application: Housing in 'off gas' area
Product: ThermaTwin panels with thermal store

"ThermaTwin solar panels were fitted in December 2009 and have worked as efficiently and without incident as the day they were first fitted. These are beyond a doubt the best investment we have made for our residents. Whilst ThermaTwin systems are cheaper than other solar panels, they do not lack in quality or performance and we, and our residents are thrilled with them. I would not hesitate to recommend ThermaTwin Solar panels to anyone and if fact have done so time and time again"

Samantha Southam, Chief Executive, Falcon Housing

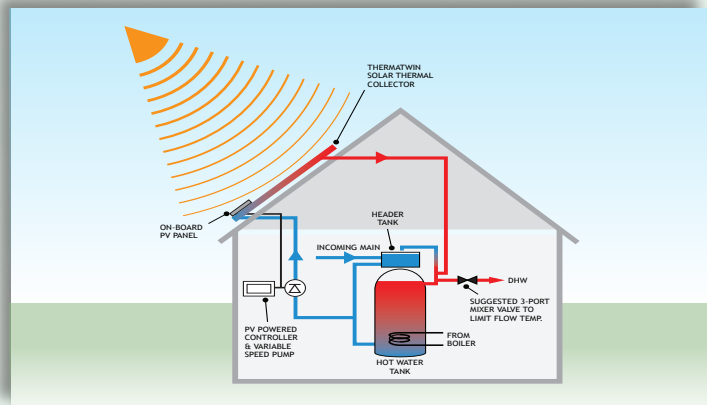


.. maintenance free, robust and reliable

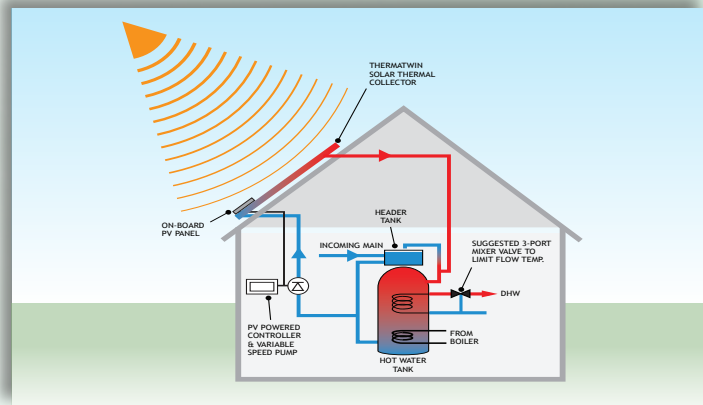
Technical Information

ThermaTwin is Solar Keymarked (PSK 008/13) and so is eligible for both RHPP (Renewable Heat Premium Payment - currently £300) and RHI (Renewable Heat Incentive, starting Spring 2014). ThermaTwin Solar Thermal panels are also eligible for Green Deal incentives and in Ireland are eligible for SEAL grants.

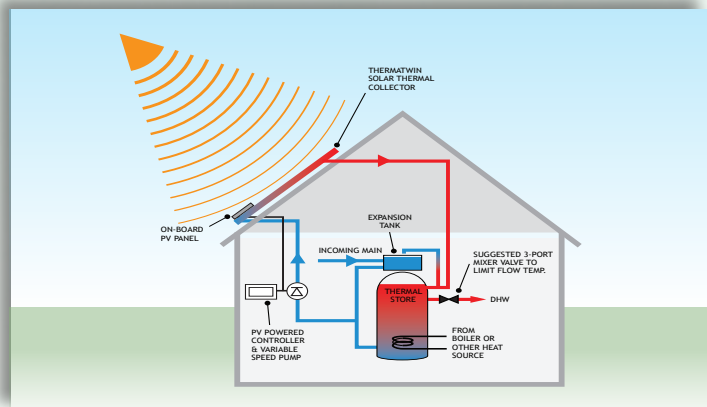
Typical Installation



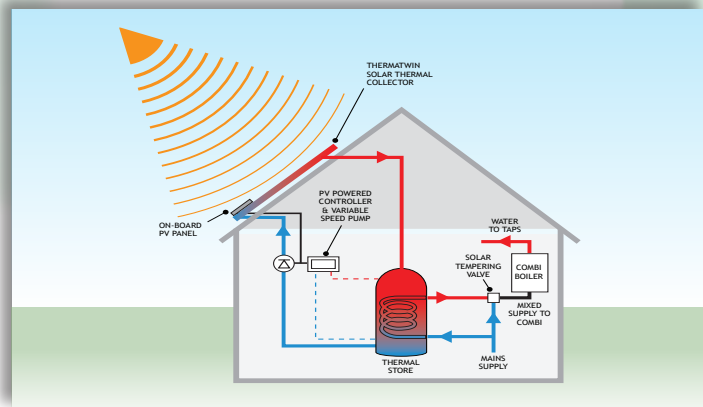
Typical Direct Open Vented System



Typical ThermaTwin Thermal Store Mains Pressure System



Typical Thermal Store System



Typical Modulating Combi Preheat System

Diagrams are for illustration purposes only - see manual for positions and dimensions

Technical Specification

Model	Aperture M ²	Length M	Width M	Height mm	Gross Area M ²	Power Output <small>*G = 1000 W/m² Tm-Ta:</small>					CO ₂ Savings
						0 K (W)	10 K (W)	30 K (W)	50 K (W)	70 K (W)	
1200/1201	2.82	2.46	1.263	75	3.11	1,653	1,539	1,295	1,025	731	254-268Kg

Stagnation Temp: 130°C

Effective Thermal Capacity: 52.5 kJ (m²k)

Operating Pressure 150 kPa

*G_{tot} = Annual total irradiation on collector plane - W/M² Ta = Mean annual ambient air temperature - °C Tm = Constant collector operating temperature (mean of in and out temperatures) - °C

How Many Panels?

No. of Bathrooms	No. of Occupants					
	1	2	3	4	5	6
1						
2						
3						
4						

Assumes predominately south facing roof at 45° pitch. For guidance only - contact your ThermaTwin installer for detailed advice.

Available from:

