Thermatile TEN-TWELVE radiant panels for integrated ceilings

SPC

British manufacturing at its best…

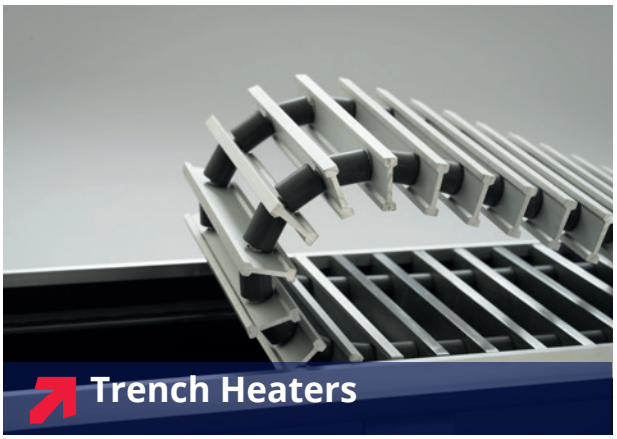
Based in Leicester, SPC is a British manufacturer that has specialised in supplying heating and cooling solutions to the public and private sectors for over 40 years.

We pride ourselves on enriching the environments that people work, interact, learn or live in. From concept through to delivery, we offer ongoing support to our customers and bespoke solutions wherever possible.

We understand the difference an improved environment can make and our dedicated team is on hand to help you achieve your goals and maximise your potential.

Comprehensive product range….

We produce a suite of products at our manufacturing facility in Leicester.



Trench Heaters

Radiant heating & cooling

Heating & cooling coils

Fan convectors

Resources

As well as products, we also offer:

- Site surveys
- Active BIM objects that are linked to product selection programs
- CIBSE approved Continuing Professional Development (CPD) courses
- Free self-selection software packages

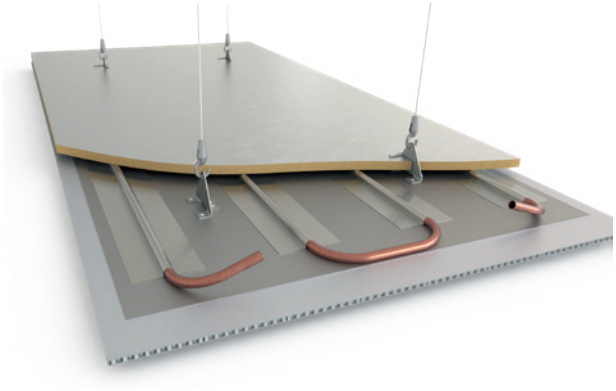
Thermatile TEN-TWELVE

The new SPC Thermatile TEN-TWELVE is the result of a development process aimed at optimising the performance, availability, value and quality of radiant heating panels for suspended ceilings.

As the name implies the Thermatile TEN-TWELVE consists of two different heating elements used on the panels (one using 10mm diameter copper tube and the other 12mm diameter). This allows the panel selection to be tuned to the water flowrate and panel run length while maintaining almost constant rates of heat transfer for each version.

While the upper side of the panel may use various tube diameters and arrangements the visible underside of the panels all have the identical smooth, plain, white finish allowing individual panels and continuous runs to be mixed and matched within single spaces.

The panel itself is of superior design and exhibits enhanced rigidity, strength and resistance to deflection as well as being from lightweight aluminium construction. The secret is the 3 layer composite design with internal and external skins sandwiching a thicker expanded/corrugated aluminium layer. Panel thickness is no greater than 5.5mm.



Standard panel widths are a nominal 600mm. Single panels up to a nominal 3600mm in length would normally be supplied as Thermatile TEN type while longer runs would be made up of a number of individual Thermatile TWELVE type panels (actual sizes less than nominal to allow installation in grid and expansion). Other widths are available on request.

The type of panel required will automatically be selected by SPC using in-house selection software to give the best solution for your application.

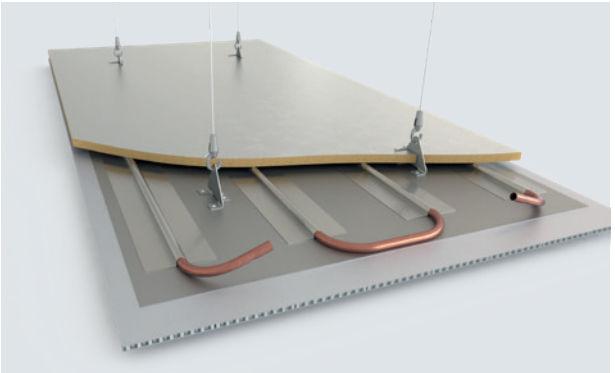
Why specify the SPC Thermatile TEN-TWELVE

- Proven quality.
- Short lead times and competitive pricing.
- Rigid 3 layer panel resists deflection even at high temperature.
- Smooth, plain room facing surface common across range.
- Rigid panel requires no edge profile – easily drop into grids.
- Lightweight aluminium panel – easily handled.
- Panels can be simply joined to form longer runs.
- Flexible waterway design to optimise velocity, pressure drop and capacity.
- Low water content and fast response to heating requirements leading to energy savings.
- Options for most ceiling types.
- Special finishes available.
- Auxiliary equipment available with panels; hoses, hanging systems, control systems.

Installation Options

The standard Thermatile TEN-TWELVE product is supplied in nominal sizes designed to sit comfortably within exposed T-Bar grid systems. Other installation options are shown below.

Thermatile TEN-TWELVE TB (T-Bar)



The Thermatile TEN-TWELVE radiant panel fits into the aperture made available once a single or a number of tiles have been omitted.

Thermatile TEN-TWELVE radiant panels are installed using independent wire hangers

Thermatile TEN-TWELVE PB (Plasterboard)

Inserting radiant panels into a finished plasterboard ceiling is a frequent requirement and SPC are able to offer two solutions. The product uses an addition frame pre-fitted to the panel and is installed by screwing the frame into a supported aperture.

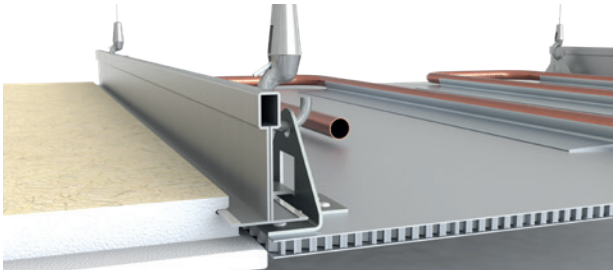
For those needing a more aesthetic recessed solution SPC are able to offer a two part frame incorporating push fit locking and repeatable access.

For further information on these technical solutions please contact our sales department on 0116 249 0044

Thermatile TEN-TWELVE TR (Tile Replacement)

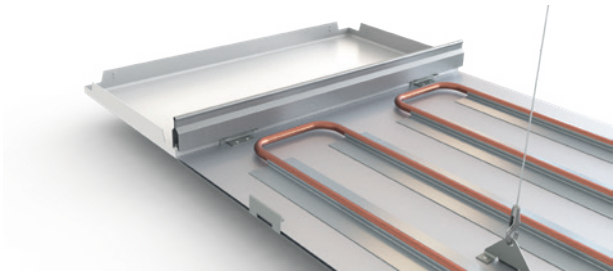
Both metal and fibre tiled ceiling systems with concealed grids are becoming increasingly popular and SPC are able to offer heated tile solutions using the TR (tile replacement) version of the product.

The Thermatile TR incorporates bespoke dimensions and additional alignment fittings to offer heated independent solutions when using these types of ceiling systems



Fiber tiles, concealed grid systems

Metal tiled corridors



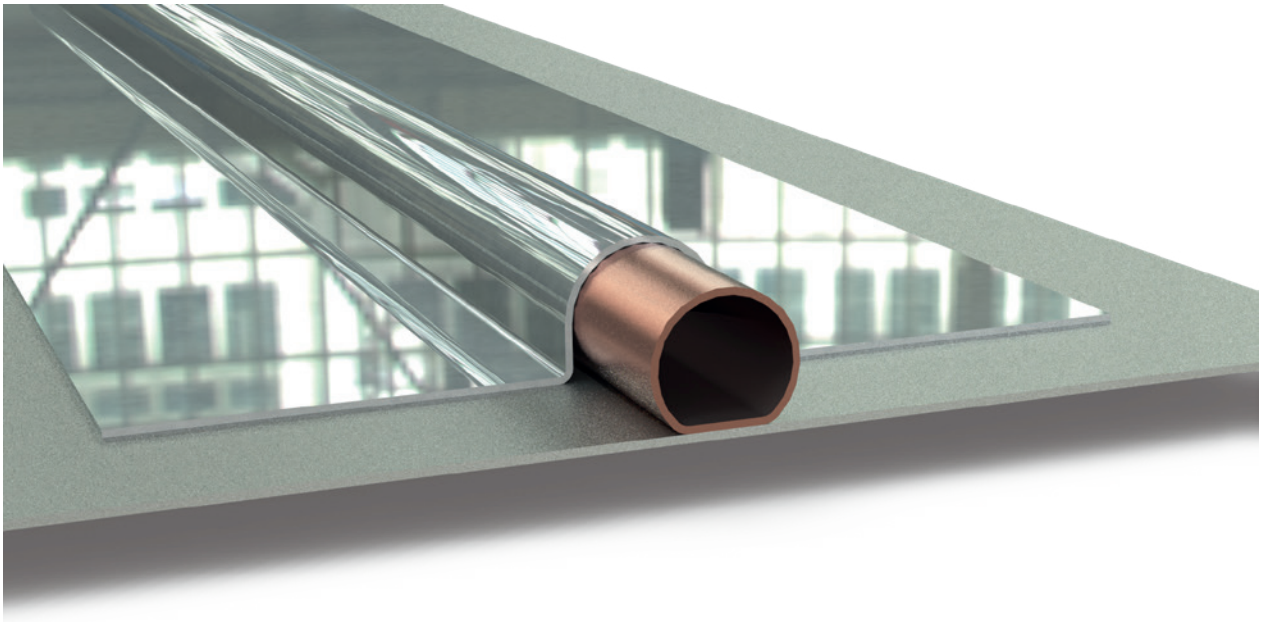
Metal tiles, concealed grid systems

Thermatile TEN

The Thermatile TEN is intended for use as a single panel with flow and return connections at the same end.

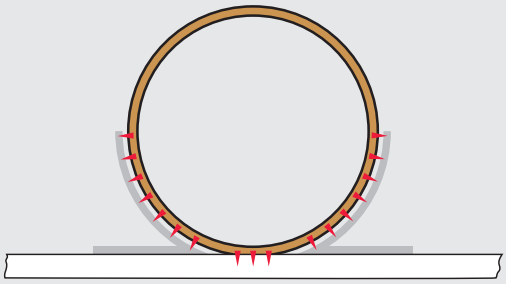
It is supplied in a standard nominal width of 600mm to suit a suspended ceiling grid and is available in 6 nominal lengths from 600mm to 3600mm in 600mm increments. Actual sizes are slightly less than nominal to allow for fitting between T bars and to cater for any expansion.

The Thermatile TEN is constructed from a cartridge type heating element bonded to the back of the standard aluminium panel. The cartridge is constructed from 10mm copper **D TUBES** with aluminium upper cover sheets. The 10mm tube is ideal for ensuring that water flows are turbulent for smaller/medium length panels.

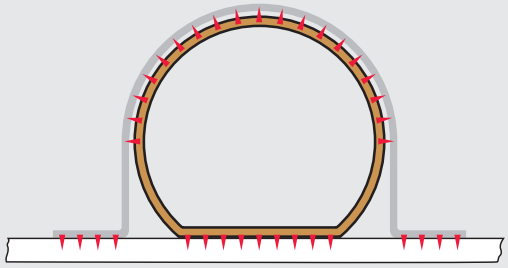


D TUBE technology involves the flattening of a circular tube so as to enhance the contact between tube and panel. When combined with the upper aluminium cover this results in 360° contact between panel and tube and high heat transfer performance not normally associated with this small tube diameter.

The Thermatile TEN type panel will be selected by default for individual panels which are not formed into longer runs.



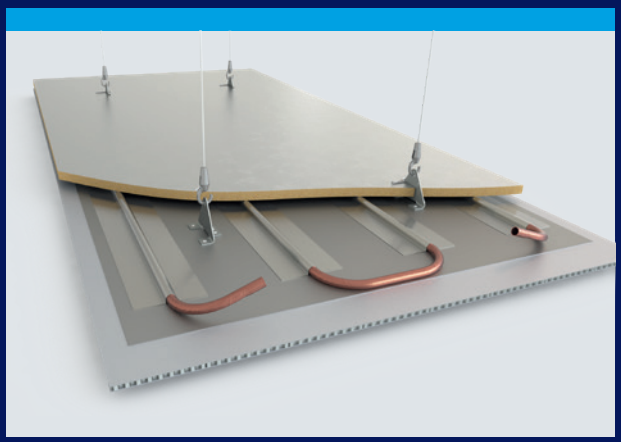
Traditional Tube Carrier

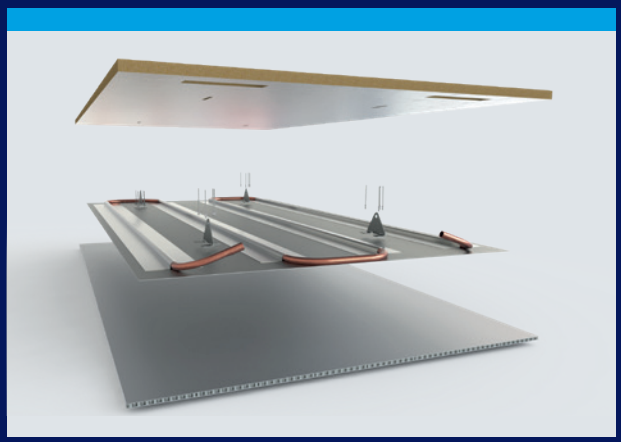


D-Tube Carrier - Increased heat transfer surface area.

Technical specification - Thermatile TEN

- 3 layer composite aluminium panel. 5.5mm maximum thickness.
- Standard matt white finish. Digital imagery and perforations available on request.
- Heating cartridge from single piece 10mm diameter D TUBE sandwiched between aluminium sheet and profiled upper aluminium cover.
- Minimum tube wall thickness of 0.35mm.
- 10mm round strengthened flow and return pipes at same end to suit push-fit or compression type fittings.
- Panels supplied with wire hanging brackets as standard (rod hanging bracket optional).
- Wire hanging kits available from SPC.
- Zone control kits available from SPC.
- Connecting hoses available from SPC.
- Panels supplied by default with rigid, non-fibrous insulation fixed to upper side of panel. Class 0 fire rated. Anti-Convective seal, both to BS476-7 Class 1.
- Outputs independently tested to EN14037.
- Maximum operating temperature 85°C.
- Maximum operating pressure 10 bar, tested to minimum of 16 bar.
- Minimum water flowrate of 0.006 litres/s to ensure turbulent flow.
- Ball guards can be supplied on request - a rigid plastic board fitted over the top of the panel forming a dome to prevent balls/ shuttlecocks from becoming trapped





Contact:

SPC

SPC House, Evington Valley Road, Leicester, LE5 5LU,
Email: spc@spc-hvac.co.uk
Tel: 0116 2490044

SPC reserves the right to amend specification without notice, whilst pursuing a policy of continual improvements in performance and design.

Thermatile TWELVE

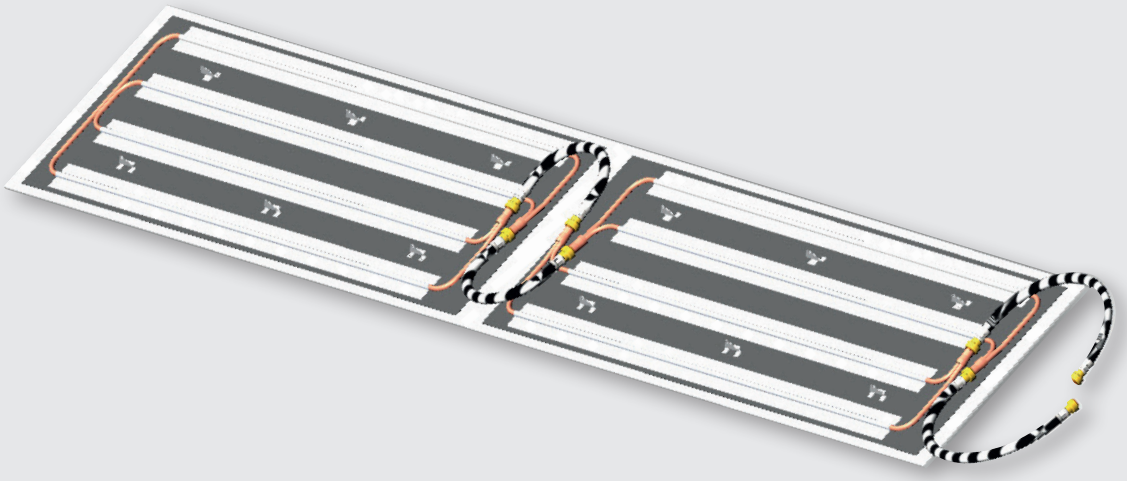
The Thermatile TWELVE is the preferred embodiment for suspended ceilings whenever the panel run exceeds 3600mm.

It is supplied in a standard nominal width of 600mm to suit a suspended ceiling grid and is available in nominal lengths from 1800mm to 3600mm in 600mm increments. Actual sizes are slightly less than nominal to allow for fitting between T bars and to cater for expansion. The individual panels will be connected together to form continuous runs with same end flow and return pipe connections.

The Thermatile TWELVE is constructed from a cartridge type heating element bonded to the back of the standard aluminium panel. The cartridge is constructed from 12mm copper D tubes with aluminium upper cover sheets. The 12mm tube is ideal for maintaining pressure drops at reasonable levels over longer panel runs.

Thermatile TWELVE panels have their tubes manifolded together in bespoke connection pieces which terminate in 22mm o/d copper. Interconnecting hoses are available from SPC to join the panel modules using specifically sized push-fit connectors by default. The first panel incorporates the flow and return pipes for the run and will be identical to the middle sections. The final, rear panel will have bends at one end rather than another pair of connectors.

Joining Thermatile TWELVE Modules



Technical specification - Thermatile TWELVE

- 3 layer composite aluminium panel 5.5mm maximum thickness.
- Standard matt white finish. Digital imagery and perforations available on request.
- Heating cartridge from 12mm diameter D tube sandwiched between aluminium sheet and profiled upper aluminium cover.
- Minimum tube wall thickness of 0.35mm.
- Panels terminate in 22mm o/d copper connectors.
- Inter-connecting and mains 22mm by 22mm push fit hoses available from SPC.
- Panels supplied with wire hanging brackets as standard (rod hanging bracket optional).
- Wire hanging kits available from SPC.
- Zone control kits available from SPC.
- Panels supplied by default with rigid, non-fibrous insulation fixed to upper side of panel. Class O fire rated. Anti-Convective seal, both to BS476-7 Class 1.
- Outputs independently tested to EN14037.
- Maximum operating temperature 85°C.
- Maximum operating pressure 10 bar, tested to minimum of 16 bar.
- Minimum water flowrate of 0.014 litres/s to ensure turbulent flow.
- Ball guards can be supplied on request - a rigid plastic board fitted over the top of the panel forming a dome to prevent balls/ shuttlecocks from becoming trapped

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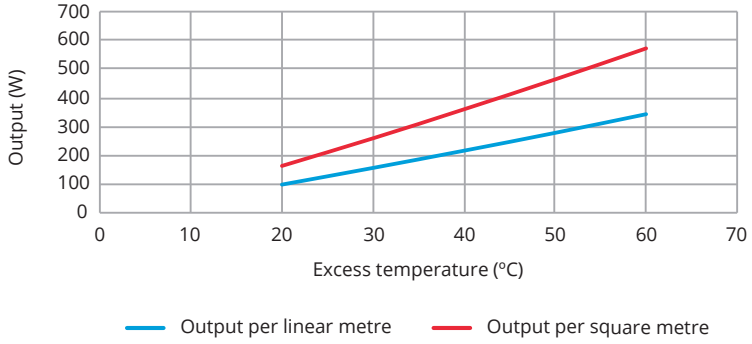
Performance Charts

The charts show the thermal outputs for the Thermatile TEN and Thermatile TWELVE panels plotted against excess temperature. Excess temperature is the difference between the mean water temperature and the space air temperature. Outputs are given in terms of both square metre of panel and linear metre of panel; the linear metre outputs assume the standard nominal panel width of 600mm.

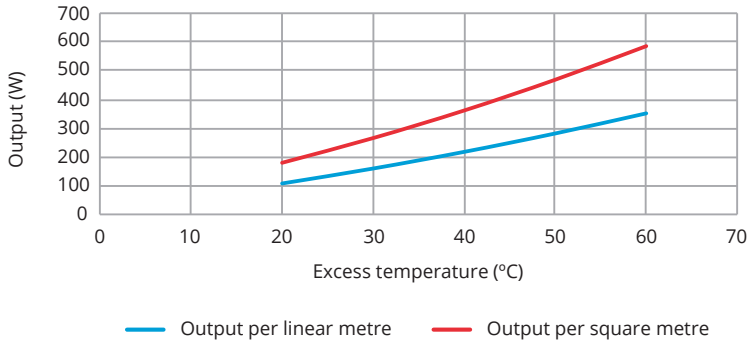
The outputs shown are based on independent testing of both panel types to EN 14037. This is the industry standard test specification allowing like to like comparison of alternative panels.

Thermatile TEN output



Excess Temperature (°C)	w/linear metre	w/square metre
20	98	163
30	156	259
40	216	360
50	278	464
60	343	572

Thermatile TWELVE output



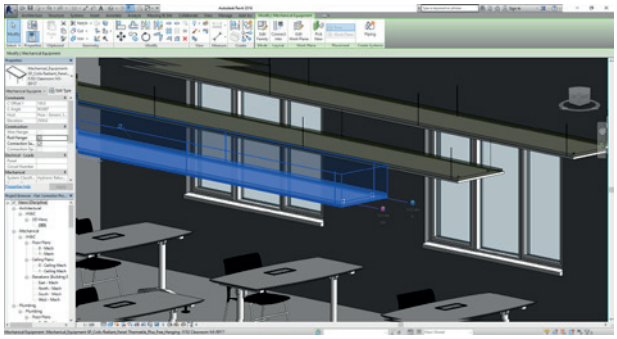
Excess Temperature (°C)	w/linear metre	w/square metre
20	107	179
30	159	265
40	217	361
50	281	468
60	351	585

Building Information Modelling (BIM)

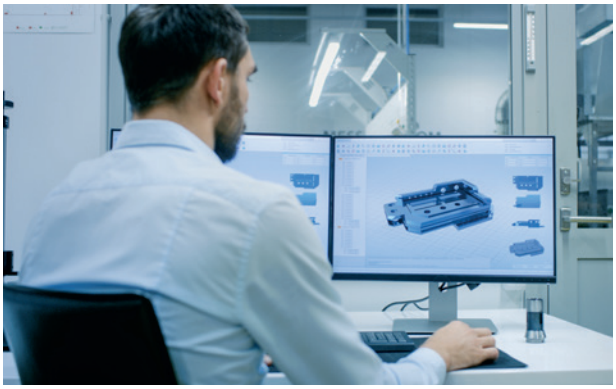
SPC's BIM objects are available to load into your Revit model using a system generated Type Catalogue holding all the project specific information configured by SPC's selection program at the design and quotation stage.

SPC's Active BIM objects are detailed enough for architects, designers and contractors to experiment with various sizes and types of components to make sure they are exactly right before ordering. The data provided with the Active BIM objects also reduces the time spent inserting project specific data into the Revit model saving both time and resource.

SPC offer BIM objects for Radiant Panels, Radiant Conditioning Sails, Metropolitan Trench Heaters, Belgravia Fan Convectors and Coil Heat Exchangers with various configurations and specifications included in the modelling.



Site Surveys

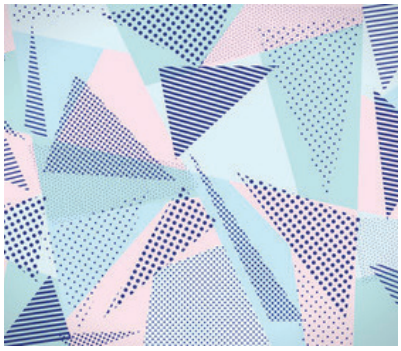


SPC's technical sales team are available to assist with site surveys and guidance on system design which includes a full technical breakdown of information such as flow rates and pressure drops.

This information is provided within each quotation and generated by SPC's radiant panel selection programme. A general arrangement of each panel run, pipe work and run configuration is also provided within your quotation.

Design possibilities

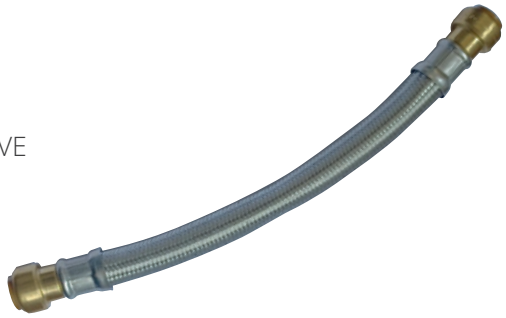
The Thermatile STYLE is the SPC solution when you are looking for a little more impact from your installation. Using either the Thermatile TEN or TWELVE product, we replace the standard white finish with a digitally printed image of your choice to enhance your project. In practice any digital image can be used, below we sample some images as examples.



For further information please contact our sales department on 0116 249 0044.

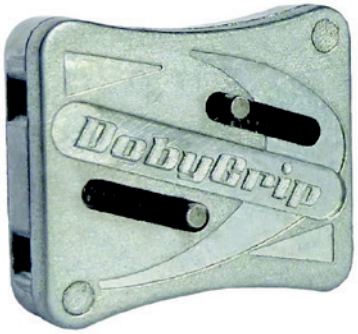
Auxiliary items

Flexible connection hoses



- EPDM rubber hoses with stainless steel braid, variety of length and end fittings available for quick and simple installation.
- Inter-connecting hoses for continuous runs of Thermatile TWELVE type panels, 22mm by 22mm. Push fit ends as standard.
- Connecting hoses for panel to pipe main, 10mm by 15mm for TEN type panels and 22mm by 22mm for Thermatile TWELVE type panels.
- Flexible hoses comply with BSRIA standard BG 4/2004.

Hanging wire kits



- SPC hanging kit specifically designed for use with radiant panels.
- Easy single-handed adjustment of wire length (hanging height).
- Thin 1.5mm wire ensures discreet hanging.
- Reduced installation times and secure fastenings.
- Contemporary design to complement the overall suspension.
- Supplied in convenient, ready-to-use kits in 3m lengths.
- Stud End fixing with drop in anchor, suitable for concrete ceilings and channel nuts.
- Additional hanging solutions available upon request.

Zone control kits

- Complete kit for local control of radiant panels or zoned collections of panels.
- Belimo rotary valve/actuator set available in sizes to suit the water flowrate.
- Digital thermostat for wall-mounting wired to valve actuator.
- Black bulb sensor wired to thermostat ensures representative measure of resultant temperature.
- 5 different sizes as standard, additional sizes available upon request.

PART OF THE CARVER GROUP

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