The Warmup Total-16 Low Profile System is perfect for renovation projects and off-plan installations of underfloor heating adding only 16mm to the floor build up. Once installed a variety of floor finishes can be laid over the system including tiles which can be bonded directly to the system.

The boards are lightweight yet heavy duty and are comprised of three components: straight, multi-feed and return boards.

The boards are made from high density EPS, able to withstand 40 Tonnes/m² and come with aluminium heat diffusion plates as an integral part of the board. Total-16 significantly speeds up installation time for both, new-build and refurbishment projects, where floor height is at a premium.

### FLOOR CONSTRUCTION

1. Ceramic tiles/stone  
   (for residential areas)
2. Warmup adhesive  
   (WHS-X-SEAL25)*
3. Warmup primer  
   (WHS-X-PRIMER)*
4. Warmup PEX-A 12mm pipe
5. Warmup Total-16 includes:  
   - Pre-installed aluminium diffusion plates  
   - Insulation (0.034 W/m K @10°C)
6. Warmup Glue
7. Subfloor
Features

- Low profile system, only 16mm, with no screeding required. Perfect for use over either pre-insulated floors, intermediate floors or those where it is impractical to lay a thicker system
- Aluminium heat diffusion plates come pre-installed, reducing installation time
- Suitable for almost any floor finish, including tiles which can be bonded directly to the system
- Ultra low weight - only 1.7kg for the straight, multifeed and return boards
- Can be supplied with or without return ends
- Lifetime Warranty when PEX-A pipe is used / 50yr Warranty for PE-RT or AL/PE-RT pipes

WARMUP COMPONENTS

Total-16 Boards

The Warmup Total-16 boards are made of high density EPS with a 400Kpa compressive strength; providing extremely high resistance for short and long term loads.

The straight boards come with aluminium heat diffusion plates as an integral part of the board. Return boards and the multifeed boards, which are used to transit pipes to other heating circuits from the manifold, do not have the aluminium heat diffusion plates

| TOTAL-16 STRAIGHT BOARD - TECHNICAL SPECIFICATIONS |
|-----------------|--------------------------|---------------------|--------------------------|--------------------------|
| CODE            | DIMENSIONS               | THICKNESS           | COMPRESSION STRENGTH @10% (kPa) | THERMAL CONDUCTIVITY @ 10°C | R-VALUE (m² K/W) |
| WHS-TOTAL16-BOARD | 1200 x 600mm          | 16mm                 | 400kPA                        | 0.034                     | 0.47            |

| TOTAL-16 RETURN BOARD - TECHNICAL SPECIFICATIONS |
|-----------------|--------------------------|---------------------|--------------------------|--------------------------|
| WHS-TOTAL16-RETURN | 600 x 300mm          | 16mm                 | 400kPA                        | 0.034                     | 0.47            |

| TOTAL-16 MULTIFEED BOARD - TECHNICAL SPECIFICATIONS |
|-----------------|--------------------------|---------------------|--------------------------|--------------------------|
| WHS-TOTAL16-FEED | 600 x 30mm          | 16mm                 | 400kPA                        | 0.034                     | 0.47            |

Warmup Insulation Boards have zero Ozone Depletion Potential (ODP) and a Global Warming Potential (GWP) of less than 5
The Warmup PEX-A pipe is formed as a single extrusion with an adhesive layer and EVOH oxygen barrier. The EVOH layer restricts the ingress of oxygen into the heating system, reducing oxidation of critical components in the primary system and extending their service life.

The minimum 70% cross linking within the PE material provides superior mechanical properties to the pipe, with a maximum working temperature and pressure of 95°C and 6 bar respectively. The PEX-A pipe has a high thermal conductivity of 0.41W/mK, substantially greater than an equivalent polybutylene pipe at 0.22W/mK. This enables our systems to emit between 3% and 6% more heat from the same water temperature as equivalent systems using PB pipe.

<table>
<thead>
<tr>
<th>PEX-A PIPE - TECHNICAL SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CODE</strong></td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>WHS-P-PEXA-12x70</td>
</tr>
<tr>
<td>WHS-P-PEXA-12x140</td>
</tr>
</tbody>
</table>

**WHS-X-SEAL25**

WHS-X-SEAL25 mixed with WHS-X-BIND is used to adhere the Total-16 boards to the subfloor when you intend to have a tile floor finish or a vinyl floor finish in a wet area. To be used in situations where rising damp is an issue.

WHS-X-SEAL25 MUST also be used to adhere tiles to the primed Total-16 boards.

**WHS-X-GLUE**

WHS-X-GLUE is used to adhere the Total-16 boards to the subfloor when you intend to have a tile floor finish. To be used when looking to minimise floor height.

**WHS-X-PRIMER**

The topside of the Total-16 must be primed if the intention is to apply tiles directly to the boards or you plan to self level over the boards. For this, you should only use Warmup’s WHS-X-PRIMER. WHS-X-PRIMER has outstanding qualities as a primer for expanded polystyrene and aluminium.

**Pipework**

The Warmup PEX-A pipe is formed as a single extrusion with an adhesive layer and EVOH oxygen barrier. The EVOH layer restricts the ingress of oxygen into the heating system, reducing oxidation of critical components in the primary system and extending their service life.

The minimum 70% cross linking within the PE material provides superior mechanical properties to the pipe, with a maximum working temperature and pressure of 95°C and 6 bar respectively. The PEX-A pipe has a high thermal conductivity of 0.41W/mK, substantially greater than an equivalent polybutylene pipe at 0.22W/mK. This enables our systems to emit between 3% and 6% more heat from the same water temperature as equivalent systems using PB pipe.
For Central Heating and Underfloor Heating Systems

The Warmup Stainless Steel Manifold range provides flexible zoning and water regulation for 2 to 12 underfloor heating circuits. Supplied complete with Taconova TopMeters, Fill/Drain Valves, Air Vents and a Thermomanometer, it is equipped with all the features needed to commission an underfloor heating system quickly and confidently.

### MANIFOLD - TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>304 Stainless Steel</td>
</tr>
<tr>
<td>Ports Available</td>
<td>2 - 12</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>-5°C to +60°C</td>
</tr>
<tr>
<td>Maximum Operating Pressure</td>
<td>6 Bar</td>
</tr>
<tr>
<td>Maximum Test Pressure</td>
<td>10 Bar</td>
</tr>
<tr>
<td>Adjustment Range</td>
<td>0 - 5 l/min</td>
</tr>
<tr>
<td>Measuring Accuracy</td>
<td>±10% (of highest nominal value)</td>
</tr>
<tr>
<td>Manifold Arm Dimensions</td>
<td>40 mm X 40 mm</td>
</tr>
<tr>
<td>Pipe Fitting Centres</td>
<td>50 mm / 55 mm</td>
</tr>
<tr>
<td>Pipe Fitting Diameters</td>
<td>G-1/2” (20X1.5)</td>
</tr>
</tbody>
</table>

### MANIFOLD & MIXING UNIT

1. Mounting Bracket
2. Flow Gauge
3. Thermometer - secondary
4. Thermomanometer
5. Grundfos UPM3 Circulator
6. Secondary - Flow
7. Electrothermic Actuator
8. Manual Air Vent
9. Capillary Thermostat
10. Mixing Unit
11. Fill/Drain Valve
12. Primary Isolation Valve
13. Secondary - Return
14. Primary pipework

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**Thermostat**

4iE™ SMART WIFI THERMOSTAT

For Central Heating and Underfloor Heating Systems

Connected to the internet by WiFi, it can be controlled from a smart phone, tablet or computer as well as its own touchscreen interface. It learns how homeowners use their heating and the unique way each zone reacts. It uses this knowledge to suggest ways to save energy, such as what temperature should be set when the area is not in use and when the heating can be turned off earlier with no noticeable impact on comfort.

Personalise your 4iE with uploadable photo backgrounds and changeable, textured overlays.

**SmartGeo™**

Always at the right temperature automatically, and up to 25% lower energy usage. Just like magic.

**EasySwitch™**


**Easy to use**

Simple and secure set up using WiFi, with 24/7 technical support.