# *VLo* Ultra-12
## Low Build System

### Low Profile Floor Finish
At 18 mm thick VLo Ultra-12 has minimal impact on floor levels when used with any floor covering - ideal for Retrofits and Off-Plan sales into new builds.

### High System Performance
150µm aluminium foil combined with double serpentine piping ensures there is even and efficient heat output across the floor using low water temperatures.

### Robust and Efficient Panels
The 18 mm thick panels are manufactured from 500 kPa XPS with a declared long term thermal conductivity of 0.034 W/mK - reducing both heat up times and heat loss.

### Quick and Easy Installation
Lightweight panels with snap lines for easy shape alteration, paired with built-in pipe channels ensures quick and easy installation.

SAFETYNet™ Installation-Guarantee

LIFETIME WARRANTY Warmup

# Overview

The VLo Ultra-12 is the next generation lightweight and robust underfloor heating system from Warmup. The range comprises of 5 panels maximising usabilty for the installer, with each panel purposely designed to hold the pipe securely across the entire floor.

Designed for use with Warmup's 12mm PE-RT pipe that inserts directly into the board channels for quick and easy installation, the system has been created with speed and efficency in mind.

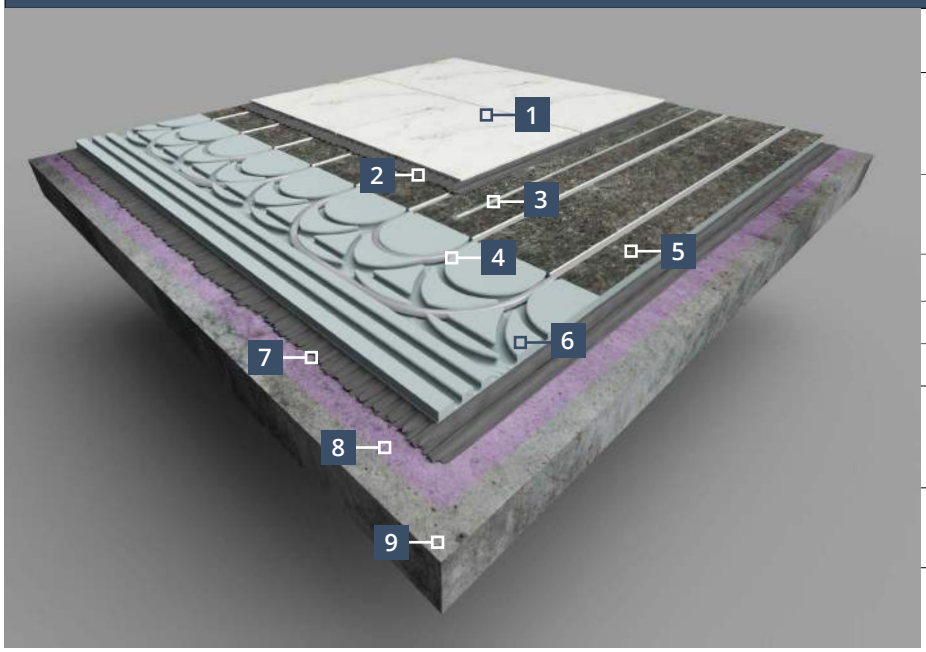
The straight panel with omega profiled 150µm aluminium diffuser channels ensures maximum surface contact between the aluminum diffuser and PE-RT pipe; optimising heat output, reducing heat up times whilst also minimising heat loss through increased insulation.

The aluminium surface of the heating panels is covered with a securely bonded, fibreglass reinforced fleece, providing an ideal surface for tiling, removing the need for specialist primers.

Warmup

# Typical floor build-ups

## Tiled floors




1 **Tile floor finish**

2 **Flexible tile adhesive**
*Tile adhesive used must be compatible with compressible panels such as Ultra-12, e.g. Warmup S2 flexible tile adhesive*

3 **Floor sensor**
*Must be recessed into the Ultra-12 panel and taped in position.*

4 **Warmup 12mm PE-RT pipe**

5 **Ultra-12 - Straight panel**

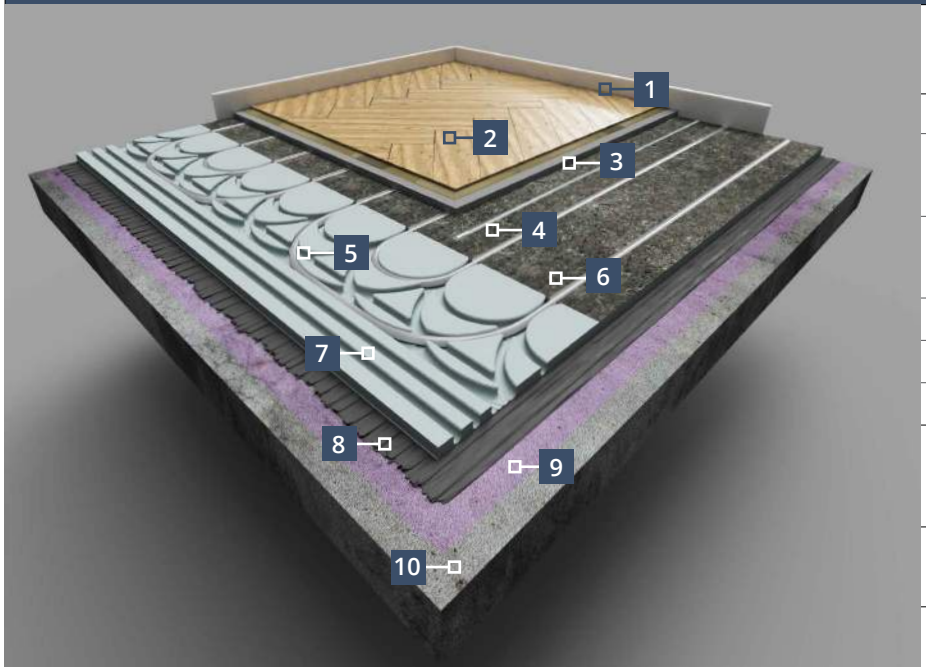
6 **Ultra-12 - Curve panel**

7 **Flexible tile adhesive**
*e.g. Warmup S1/S2 flexible tile adhesive for wet or dry areas or compatible high temperature acrylic adhesive for dry areas*

8 **Warmup primer**
*Refer to tile adhesive manufacturers instructions for priming requirements*

9 **Subfloor with surface regularity of SR1**

## All floor finishes - bonded




1 **Perimeter strip**
*To allow for differential movement between finished floor level and walls*

2 **Floor finish**

3 **Min. 12 mm layer of compatible self-levelling compound**
*e.g. Mapei Ultraplan Renovation Screed 3240*

4 **Floor sensor**
*Must be recessed into the Ultra-12 panel and taped in position.*

5 **Warmup 12mm PE-RT pipe**

6 **Ultra-12 - Straight panel**

7 **Ultra-12 - Curve panel**

8 **Flexible tile adhesive**
*e.g. Warmup S1/S2 flexible tile adhesive for wet or dry areas or compatible high temperature acrylic adhesive for dry areas*

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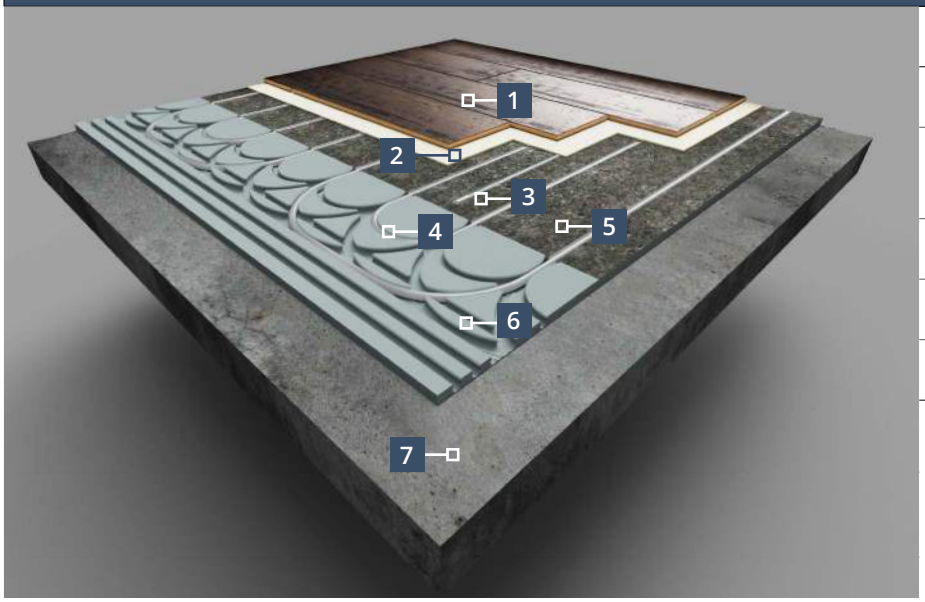
# Typical floor build-ups

## Floating floor finishes




1 **Floating floor finish**

2 **UFH compatible underlay**

3 **Floor sensor**
*Must be recessed into the Ultra-12 panel and taped in position.*

4 **Warmup 12mm PE-RT pipe**

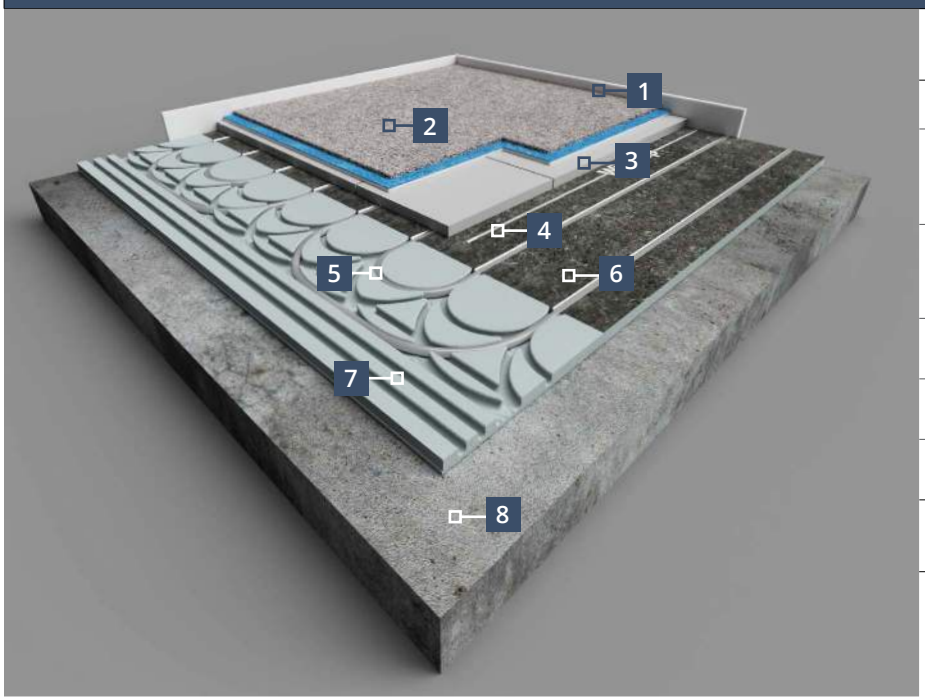
5 **Ultra-12 - Straight panel***

6 **Ultra-12 - Curve panel***

7 **Subfloor with surface regularity of SR1**

** Ultra-12 panels can also be adhered to the subfloor to improve stability*

## All floor finishes - floating




1 **Perimeter strip**
*DCM-E-25*

2 **Floor finish**

3 **Floating floor deck**
*Such as HiDECK 18 or 18 mm P5 T&G chip-board. Install referring to their instructions*

4 **Floor sensor**
*Must be recessed into the Ultra-12 panel and taped in position.*

5 **Warmup 12mm PE-RT pipe**

6 **Ultra-12 - Straight panel***

7 **Ultra-12 - Curve panel***

8 **Subfloor with surface regularity of SR1**

** Ultra-12 panels can also be adhered to the subfloor to improve stability*

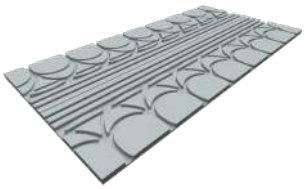
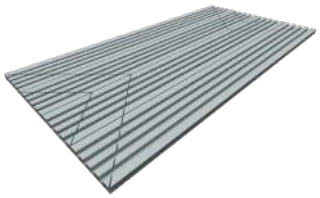
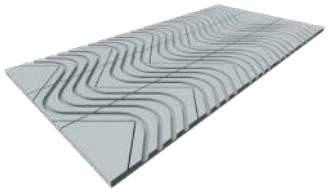
# Technical specifications

| Ultra-12 panels - Foam component | |
|---|---|
| **Density** | 50 kg/m³ |
| **Thermal Conductivity** | 0.034W/mK |
| **Compressive Strength** (10% deflection) | 500kN/m² |
| **Water Absorption** (2-day immersion) | <1.0% by volume |
| **Water Absorption** (Capillary) | Zero |
| **Coefficient of linear expansion** | 0.07 mm/mK |
| **Water Vapour Diffusion Resistivity factor (μ)** | 110 – 225 |
| **Fire Behaviour** | Euroclass E |
| **Acoustic Performance** | *See Page 5* |
| **ODP** (Ozone Depleting Potential) | Zero |
| **GWP** (Global Warming Potential) | < 0.29 |

## Ultra-12 - Straight Panel

| | |
|---|---|
| **Product Code** | U12-SP-PANEL |
| **Composition** | Extruded polystyrene with 150μm thick aluminium foil layer on top, with a fibreglass reinforcement mesh and a 100% recycled polyester fleece on top and bottom |
| **Pipe centres** | 150 mm |
| **Dimensions** | 600 x 1200 x 18 mm |
| **Weight of the Panel** | 1 kg |

## Ultra-12 - Curve Panel, Straight Service Panel, Curve Service Panel

| | | | |
|---|---|---|---|
| **Product Code** |  |  |  |
| | U12-CP-PANEL | U12-SS-PANEL | U12-CS-PANEL |
| **Composition** | Extruded polystyrene with a fibreglass reinforcement mesh and a 100% recycled polyester fleece on bottom | | |
| **Dimensions** | 600 x 1200 x 18 mm | | |
| **Weight of the Panel** | 0.5 kg | | |

## Ultra-12 - Plain Panel

| | |
|---|---|
| **Product Code** | U12-PP-PANEL |
| **Composition** | Extruded polystyrene with a fibreglass reinforcement mesh and a 100% recycled polyester fleece on top and bottom |
| **Dimensions** | 600 x 1200 x 18 mm |
| **Weight of the Panel** | 0.7 kg |

# Acoustic Performance

Warmup VLo Ultra-12 is tested and rated for its acoustic performance by Intertek Building & Construction in accordance with ISO 10140-2 and ISO 10140-3. Results obtained are tested values and were obtained by using the designated test methods in test chambers that satisfy the lab requirements specified in ISO 10140-5.

Each tested construction included a 1/2" (12mm) layer of self-levelling compound installed over VLo Ultra-12 installed in accordance with its manual. These installation layers are common to and cover all floor constructions* detailed below.

| |
|---|
| 1/2" (12mm) Self-Levelling Compound |
| 11/16" (18mm) Warmup VLo Ultra-12 |
| 1/8" (3mm) Cementitious Tile Adhesive |

| ***Floor Construction**** | ***Standards*** | ***Result*** | ***Report No.*** |
|---|---|---|---|
| 3/4" (19mm) OSB board<br>18" (450mm) Open Web Joists<br>3.5" (90mm) Fibreglass Insulation<br>1/2" (12.7mm) RC Deluxe Resilient Channel<br>5/8" (15.9mm) Gypsum Panel | ISO 717-1<br>ISO 10140-2<br>ISO 10140-3 | Rw 58 dB<br>$L_{n,w}$ 58 dB | Q5049.02-113-11R0 |
| 75 lb/ft² (350 kg/m²) Concrete Slab | ISO 717-1<br>ISO 10140-2<br>ISO 10140-3 | Rw 56 dB<br>$L_{n,w}$ 59 dB<br>$\Delta L_{n,w}$ 15 dB | Q5049.01-113-11-R0 |

** Construction from Top to Bottom*

*NOTE:*
*Rw = Sound Reduction Index*
*$L_{n,w}$ = Normalised Impact Sound Pressure Level*
*$\Delta L_{n,w}$ = Improvement in impact sound insulation when VLo Ultra-12 is added*

# System performance

| $k^H$ Value - W/m²K | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Resistance of Floor Covering, tog** | **0.00** | **0.25** | **0.50** | **0.75** | **1.00** | **1.25** | **1.50** | **1.75** | **2.00** | **2.25** | **2.50** | **2.75** | **3.00** |
| 150mm Pipe Centres* | 6.96 | 5.74 | 4.90 | 4.27 | 3.79 | 3.41 | 3.09 | 2.84 | 2.62 | 2.43 | 2.27 | 2.13 | 2.00 |

* 150 mm pipe centres with no overboarding or levelling compound. If you are using a floating floor deck over Ultra-12 beneath the floor finish, you must also include its thermal resistance, for example:
  18 mm Chipboard, R = 1.25 tog
  18 mm HiDECK 18, R = 0.45 tog

| | |
|---|---|
| **q = Specific Heat Output, W/m²** | **$k_H$ = System Performance Factor, W/m²K** |
| **$T_{water}$ = Mean water Temperature** | **$T_{air}$ = Room Air Temperature** |

Using the system $k_H$ value to calculate the system heat output:

**$q = k_H \times ( T_{water} - T_{air} )$**

**Example:**
The heat output through an 18 mm thick, ≈ 1.25 tog timber floor, over Ultra-12 in a 21°C room heated with 40°C water is;

**$q = 3.41 \times ( 40 - 21 ) = 3.41 \times 19 = 65$ W/m²**

Alternatively, using the system $k_H$ value to calculate the required water temperature, knowing the required heat output:

**$T_{water} = ( q / k_H ) + T_{air}$**

**Example**:
The water temperature required to produce a heat output of 55 W/m², through a 3 mm thick LVT floor finish on HiDECK 18 (0.30 + 0.45 = 0.75 tog), over Ultra-12 panels in a 22°C room is;

**$T_{water} = ( 55 / 4.27 ) + 22 = 13 + 22 = 35$°C**

# Components

**PE-RT Pipe -** PERT-12 x XX
Warmup PE-RT (Polyethylene of Raised Temperature Resistance) pipe. The pipe guarantees leak free performance with a smooth internal structure for improved flow, reduced pressure loss and deposit formation.

**Warmup 6iE -** 6iE-01-OB-DC / 6iE-01-BP-LC
The world's first UFH thermostat with a smartphone touchscreen providing effortless control at your fingertips. Connected to the internet by WiFi, it can be controlled from a smart phone, tablet or computer as well as its own touchscreen interface. Working automatically; it learns your routines and location through background communication with your smartphone. Using this knowledge it suggests ways to save energy.

**Warmup Element -** RSW-01-WH-RG (ELM-01-WH-RG) / RSW-01-OB-DC (ELM-01-OB-DC)
Warmup's Element WiFi Thermostat has been designed with simplicity and stylish functionality in mind. It brings energy-efficient heating control to all Warmup floor heaters. Combining smart technology with simple, contemporary design, the Element WiFi Thermostat is the perfect all-rounder to control Warmup heating systems.

**Warmup Primer -** ACC-PRIMER
A ready to use, bond enhancing and solvent-free single component primer for the preparation of absorbent and non-absorbent floors and walls with or without surface heating.

**Pipe bend supports -** WHS-P-BEND12
The bend support is used for supporting pipes to make a smooth 90-degree turn where needed & provides a rigid bend which changes the pipes direction without causing excessive bending

**Pipe clips -** UK-WUK-HY-ACC-PIPECLIPS12
The robust pipe clips feature a press in to secure and press in to release design making mounting of the pipe easy. They link together to form a single rail and secure pipes at 25mm centres, neatly aligning them to the manifold ports.

# Contact

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