

Variocomp

Specification

Product Features

Pipe work

- ✓ High quality 11.6x1.5mm composite PE-RT/AL/PE-RT pipe work
- ✓ Tested as per EN 21003
- ✓ Maximum working pressure 10 Bar.
- ✓ Maximum operating temperature 95°C
- ✓ Aluminium Oxygen Barrier Diffusion tight to DIN 4726/29 standard.

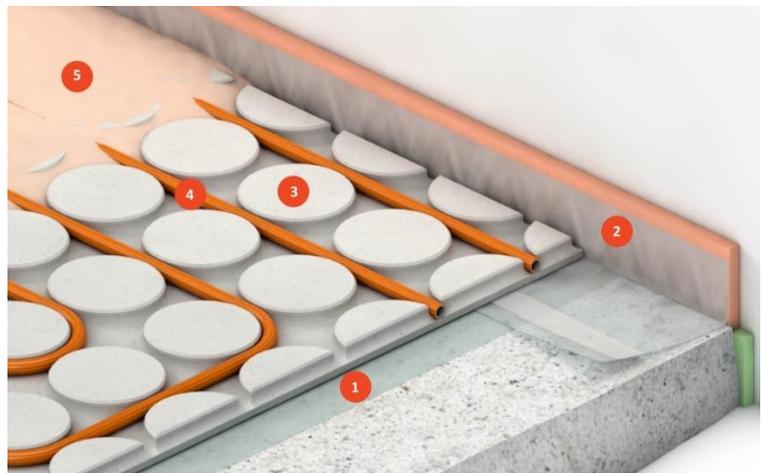
Variocomp system

- ✓ Low construction height at 20mm
- ✓ Low weight of 25kg/m²
- ✓ Short curing time – floor coverings can be laid after 24hrs
- ✓ Gypsum fibre boards pre-milled for accurate pipe placement
- ✓ Low thermal mass for a fast reaction time
- ✓ High thermal conductivity Calcium Sulphate levelling compound
- ✓ Thermal output calculations to EN 1264

Product Specification

The Variotherm Variocomp underfloor heating system is an efficient complete floor heating system comprising of the following equipment;

1. Plastic membrane (0.1mm)
2. Edge insulation strip (75mm)
3. Variocomp panel (18mm)
4. Variotherm 11.6mm pipe
5. Filling compound



The Variocomp system is a floor covering system that is to be installed over a suitable structural floor system (concrete or timber construction) with floor coverings installed directly over the system.

The installer shall provide installation details and layout drawings for approval by the project engineer prior to commencing any installation work. The layout and spacing of the pipe shall ensure even heat distribution over the area and the required output in each space should be confirmed in accordance with EN1264. Flow and pressure drop calculations are to be included to show suitability with the primary delivery system. The system design shall be completed by a suitably qualified engineer, Central Heating New Zealand's engineering team can provide this service including detailed installation drawings and complete performance calculations.

The installation of the Variocomp system should be completed once the building is weathertight to prevent draughts from too rapidly curing the levelling compound and ingress of moisture. The Variocomp system must not have direct point loads applied to it, so all work that requires scaffolding is best completed prior to the installation of the Variocomp system, alternatively load spreading plates will need to be laid down after the system is installed to allow scaffolding or similar to be used that would result in point loading of the Variocomp system. All other trades must not be working in the areas the Variocomp is being installed in to allow a rapid and successful installation. Internal wall linings must either not yet be installed or be run down to the level of the structural floor, and internal doors shall be removed.

Access and space for storage of the materials close to the installation site along with the provision of water and power for the mixing of the filling compound will be required.

The structural floor must be dry and clean with a suitable level and load deflection requirements as per the installation guide. If required high compressive strength insulation can be installed on the structural floor prior to the installation of the Variocomp system, refer to the Install Guide for insulation product requirements.



Once a suitable substrate and site access has been confirmed, the installation steps will be as follows (more details of each aspect can be found in the Install Guide);

1. The Variocomp edge insulation strip should be run around all edges that the Variocomp system will meet (exterior and internal walls, columns, steers, penetrations, joinery) to allow at least 5mm of thermal expansion. Edge insulation strip should also be run in door ways and as required to create movement joints.
2. The plastic membrane is laid down on the floor and adhered to the edge insulation strip where it meets this. The membrane must be laid with an overlap of at least 30mm and all joints taped.
3. Installation of the Variocomp panels will commence next, starting in a corner of each room a full size panel will be laid first, the detailed design drawings from Central Heating New Zealand will show the assumed point for this first panel. Panels can be trimmed to size with a circular saw or jig saw and use of a vacuum attachment and PPE are required. Once the first row of panels have been laid the second row can be laid next to this with at least a 200mm offset of the panel joints. Small sections of pipe can be used to assist with alignment of the panels. Large areas of unheated floor (i.e. under joinery) can be fitted with blank panels. Where pipes need to be run at spacings tighter than 100mm the clamp track rails can be used allowing pipes to be run at 30mm, 60mm, or 90mm centres, the remaining large areas around the panels and clamp track can be filled up with Variocomp panels or blanks and smaller areas can be left to be filled with the filling compound. After the installation of the panels is complete, check panel grooves and floor for cleanliness and clean as required.
4. The Variocomp 11.6mm pipe shall be laid into the panels and clamp track as per the approved laying plans. Where possible pipes should run through doorways and open floor areas with walls and permanent fixtures avoided, where required pipes may run under walls or permanent fixtures these locations must be recorded with adequate protection provided to prevent damage to the pipe. The pipe shall be laid from a de-coiler with care taken to prevent twisting or kinking of the pipe, a pipe former is available to assist with tight bends. Ensure the pipe is seated into the panel grooves and a rubber mallet can be used to gently position the pipes in the panels. Record the length of each loop as laid and any large variations from the design shall be notified to the

designer for approval prior to proceeding. If required lengths of pipe can be used to create floor probe conduits and these can be run back to the manifold or to the nearest wall, prior planning of the locations of these is required and if required a path under the pipes can be chiselled out of the panel to run these conduits. Using lengths of edge insulation strip, create movement joints in larger spaces and through doorways and notch the strip to fit snugly over the pipes, see the Install Guide for the required locations for these joints and show these on the laying plans. Take pictures of the pipe layouts for future reference ensuring to capture any areas where damage is more likely to be caused clearly.

5. Pipes shall be connected into the manifold or into a temporary testing rig and charged to 6.0 bar with compressed air or nitrogen, ensure there is no reduction in pressure for 30 minutes. If any damage to the pipe is discovered remove the pressure and repair with a press joiner and wrap with Denso tape or similar as per the Install guide, after any repairs restart the pressure test until 30 minutes of no reduction in pressure has been observed, leave the system under pressure for the installation of the filling compound to ensure any damage to the pipes during this period become apparent. Record the results of the pressure test and the location of any repairs. Label each loop with a unique reference as per the laying plan on the manifold port.
6. Following the instructions in the Install Guide mix and apply the filling compound, take time to complete this aspect carefully. Screed out the filling compound to fill the panels evenly and take care to achieve a smooth surface, fill the remaining larger areas and screed to the level of the panel areas. The areas can take foot traffic with 2.5 hours and as soon as this is possible use a trowel remove any excess material to create a smooth finish.
7. After the installation of the filling compound if the desired level or finish has not been achieved, 2 options are available;
 - a. If it has been less than 3 hours since the installation of the first layer of the Variocomp filling compound, a slightly more diluted layer of the Variocomp compound can be applied directly without the need to use any primers.

- b. If it has been greater than 3 hours or a more perfect finish is required, a suitable primer and levelling compound system can be used as specified by the flooring contractor and approved by Central Heating New Zealand.

Please note: it has been the experience of Central Heating New Zealand that this additional 3rd party supplied primer and levelling compound has been required in around 90% of these installations in New Zealand, the additional height (5-10mm) and costs of this should be allowed for all projects and should only be removed/credited once the project team are selected and have confirmed the scope.

8. After the Variocomp system and any additional levelling compounds are installed the floor coverings can be installed, taking into consideration the required curing times of the relevant systems. The Variocomp installation guide includes some example details and product requirements but normal practices for flooring installations in New Zealand are acceptable. For carpet systems that use a Smoothedge system, the Smooth edge must be either glued down to the Variocomp system or a timber border be run around the edge of the room. Adhesives used for the Smoothedge, or glued floor coverings should be checked to achieve suitable adhesion to the final surface of the Variocomp system. Floor covering selections should be provided to the system designer in advance for inclusion in the system design calculations.

Any deviations from the Install Guide or the requirements above can be discussed with Central Heating New Zealand for advice/approval. Central Heating New Zealand recommend the attendance of the Underfloor Installation Training Course which includes theory and practical aspects of the Variocomp system.

Refer to “Module Floor (Variocomp) Install Guide” for further details.

