

Underfloor Pipe Work Product Specification



Multitubo Composite Pipe Features

- BRANZ Appraised Multitubo Composite Pipe System (Appraisal No 740)
- Output calculated in accordance with EN1264
- Manufactured to DIN 4102
- Maximum working pressure 10 Bar
- Maximum operating temperature 95°C @ 7 Bar
- Aluminium Oxygen Barrier Diffusion tight to DIN 4726/29 standard



Multitubo PE-RT Pipe Features

- BRANZ Appraised Multitubo Composite Pipe System (Appraisal No 916)
- Output calculated in accordance with EN1264
- Manufactured to DIN 4102
- Maximum Operating Pressure 6 Bar
- Maximum working temperature up to 70°C @ 4 Bar
- PE-RT with EVOH Oxygen Barrier



Product Range

Multitubo Composite Pipe
Multitubo PE-RT Pipe

Product Specification – Multitubo Composite Pipe



Pipe work must have a lifetime in excess of 50 years, have a maximum operating temperature of 95°C @ 7 Bar and a maximum operating pressure of 10 Bar. The pipe work must be installed in accordance with the manufacturer's guidelines. Pipe joints to be avoided within the slab at all times.

The installer shall provide installation details and layout drawings for approval 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. The maximum loop length shall be confirmed with the designer prior to beginning the installation and is typically 110-120m.

All fittings must suit Multitubo pipe work in the form of Nickel plated Brass or PE-RT Fusion Fittings. The floor slab shall be formed to a minimum thickness of 100mm and underfloor pipe work laid in accordance with Central Heating New Zealand underfloor design layout. Minimum 100mm Polystyrene or 50mm Extruded Polystyrene Insulation (XPS) laid below the concrete slab. BRANZ edge insulation details should be considered and strongly advised to be installed.

{Or the screed topping slab shall be formed to a minimum thickness of 50mm or as per the specialist screed supplier's specifications, 30mm

XPS insulation shall be fitted to the structural slab and 10mm XPS fitted to the edge of the slab/frame that the screed is to be poured up against.}

The builder shall mark out all walls, doors, cupboards, benches, and any permanent fixtures in dazzle spray prior to the installation of the underfloor pipe. The pipe work shall as standard be run through doorways and open floor areas and avoid running pipe underneath walls or permanent fixtures. Where pipe must be run under a wall or permanent fixture care shall be taken by the builder and heating installer to ensure the pipe is not damaged in the construction of the building. The 16mm Multitubo pipe work must be clipped to the insulation layer at the bottom of the slab/screed, the insulation shall support the pipe over the entire area of the installation. Ensure the pipe is securely fixed to the insulation, the builder and concrete placer will need to take care when pouring the slab/screed to ensure the pipe clips are not removed as the concrete is poured.

{Or tied to the top of the reinforcing mesh. If the pipe is to be tied to the reinforcing mesh saw cuts are to be replaced with crack inducers (Canzac or similar). Alternatively, a saw cut layout plan must be produced by the builder illustrating proposed locations of all joints and issued to the heating installer for information. The builder and heating installer are to work together to establish a suitable installation/construction method that prevents the pipe being damaged from saw cuts. The reinforcing mesh shall be positioned to ensure the concrete cover over the pipe is a minimum of 35mm. Should a saw cut be necessary, depending on the quantity of saw cuts, the pipe layout should be arranged to ensure the pipe has minimal crossings of the cut lines. When installing the pipe the builder would remove a section of the mesh along the cut line, the pipe would be dipped below the mesh in these sections with the mesh being reinstated once the pipe was laid.}

Where pipe work passes through an expansion joint a flexible convoluted split conduit should be placed over

the pipe extending at least 200mm either side of the expansion joint. The conduit should be sealed at each end to prevent concrete entering the conduit.

On completion of laying the pipe work it is essential that each loop is flow tested with air. This ensures each loop has no blockages or kinks present. The system is then placed on pressure test and this test is to remain in place throughout the construction of the slab and thereafter until the manifold is to be installed. The pipe work should be pressure tested with air to at least 6 bar and should remain on pressure test during the construction of the building until it is deemed all works that could cause damage to the pipe are completed. Ensure pipe work is pressure and flow tested with air only to prevent any damage from freezing water during construction over winter periods.

Where pipes terminate at manifold locations they should be covered with plastic wrap or similar to be protected from UV damage/discolouration during extended building programmes. Where applicable protection from mechanical damage via a temporary structure shall also be considered.

Spare lengths of pipe shall be run out to form conduits for floor probes, the conduits shall finish at the same level as the heating pipe work and evenly spaced between two pipes. The end of the conduit shall be sealed to prevent concrete entering the conduit. The conduit shall be run into a wall cavity where the future connection into the controls/thermostat is possible, replacement of the probe shall be considered and a flush box complete with dummy plate shall be fitted at low level to achieve this.

Photos shall be taken of the installation prior to slab pour and provided to the client for future reference. Particular attention should be given to complex areas, or areas with non-standard installation. The length of each loop shall be recorded and marked on the plan alongside the design length on the drawing, the designer should be alerted to any large variations (>20m) from the design. All pipe loops shall

be marked with the room or zone and loop number as per the laying plan, where required also clearly indicate the flow pipe of the loop.



Product Specification – Multitubo PE-RT Pipe

Pipe work must have a lifetime in excess of 50 years, have a maximum operating temperature of 70°C @ 4 Bar and a maximum operating pressure of 6 Bar. The pipe work must be installed in accordance with manufacturing guidelines. Pipe joints to be avoided within the slab at all times.

The installer shall provide installation details and layout drawings for approval 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. The maximum loop length shall be confirmed with the designer prior to beginning the installation and is typically 110-120m. All fittings must suit Multitubo PE-RT pipe work in the form of Brass Screw Compression.

The floor slab shall be formed to a minimum thickness of 100mm and underfloor pipe work laid in accordance with Central Heating New Zealand underfloor design layout. Minimum 100mm Polystyrene or 50mm Extruded Polystyrene Insulation (XPS) laid below the concrete slab. BRANZ edge

insulation details should be considered and strongly advised to be installed.

The builder shall mark out all walls, doors, cupboards, benches, and any permanent fixtures in dazzle spray prior to the installation of the underfloor pipe. The pipe work shall as standard be run through doorways and open floor areas and avoid running pipe underneath walls or permanent fixtures. Where pipe must be run under a wall or permanent fixture care shall be taken by the builder and heating installer to ensure the pipe is not damaged in the construction of the building.

The 16mm pipe work shall be tied to the reinforcing mesh and must be laid so that the pipes end up a minimum of 35mm below the floor slab surface. The pipe can also be tied to a sacrificial mesh (installed by the builder) that would be positioned below the structural mesh. Saw cuts are to be replaced with crack inducers (Canzac or similar).

Alternatively, a saw cut layout plan must be produced by the builder illustrating proposed locations of all joints and issue to the heating installer for information. The builder and heating installer are to work together to establish a suitable installation/construction method that prevents the pipe being damaged from saw cuts.

Should a saw cut be necessary, depending on the quantity of saw cuts, the pipe layout should be arranged to ensure the pipe has minimal crossings of the cut lines. When installing the pipe the builder would remove a section of the mesh along the cut line, the pipe would be dipped below the mesh in these sections with the mesh being reinstated once the pipe was laid.

Where pipe work passes through an expansion joint a flexible convoluted split conduit should be placed over the pipe extending at least 200mm either side of the expansion joint. The conduit should be sealed at each end to prevent concrete entering the conduit.

On completion of laying the pipe work it is essential that each loop is flow tested with air. This ensures each loop has no blockages or kinks present. The system is then placed on pressure test and this test is to remain in place throughout the construction of the slab and thereafter until the manifold is to be installed. The pipe work should be pressure tested with air to at least 6 bar and should remain on pressure test during the construction of the building until it is deemed all works that could cause damage to the pipe are completed. Ensure pipe work is pressure and flow tested with air only to prevent any damage from freezing water during construction over winter periods.

Where pipes terminate at manifold locations they should be covered with plastic wrap or similar to be protected from UV damage/discolouration during extended building programmes. Where applicable protection from mechanical damage via a temporary structure shall also be considered.

Spare lengths of pipe shall be run out to form conduits for floor probes, the conduits shall finish at the same level as the heating pipe work and evenly spaced between two pipes. The end of the conduit shall be sealed to prevent concrete entering the conduit. The conduit shall be run into a wall cavity where the future connection into the controls/thermostat is possible, replacement of the probe shall be considered and a flush box complete with dummy plate shall be fitted at low level to achieve this.

Photos shall be taken of the installation prior to slab pour and provided to the client for future reference. Particular attention should be given to complex areas, or areas with non-standard installation. The length of each loop shall be recorded and marked on the plan alongside the design length on the drawing, the designer should be alerted to any large variations (>20m) from the design. All pipe loops shall be marked with the room or zone and loop number as per the laying plan, where required also clearly indicate the flow pipe of the loop.