

## Atrium – Plasterboard Integration

### General

- The project will utilise Frenger Atrium water-driven radiant heating panels. Panels are constructed with an integral access hatch and perimeter trim to integrate within an 'MF' type plasterboard ceiling system.
- The Atrium heating panel warms the room by both radiation and by convection. The radiation is to the surrounding colder surfaces, and the convection to the passing room air.
- The Atrium heating panel is comprised of copper tube pathways fully encapsulated within formed Aluminium plate. Each modular panel is complete with 15mm OD vertical flow and return tails as required.
- Warm water is passed through the copper tube pathways at a sufficiently turbulent flow rate ensuring heat transfer that warms the Aluminium faceplate, so creating radiant and convective heat output.

### Material

- Atrium panel sections to be manufactured from 0.52mm Aluminium GA 5050-02, (AA1050-A), forming an overall panel depth of 60mm.
- Access hatch door to be manufactured from 1.2mm aluminium and to be secured with compartment locks and identical keys.
- Copper pipe-work coil SS 5015-02, ISO CY-DHF, BS C106 – 0.3mm thick, nominally 10mm OD formed into a rhomboid shape. Each coil has 15mm OD connection tails.

### Finish

- Atrium panels are powder coated as standard in NCS 0502-Y/RAL 9010.
- Gable end joints are sealed with a hygienic silicone compound sealant.

### Insulation

- Reverse of panel will be insulated with extruded polystyrene cellular plastic, finished white.

### Air Venting

- Arrange for venting through the circulating system.

### Access

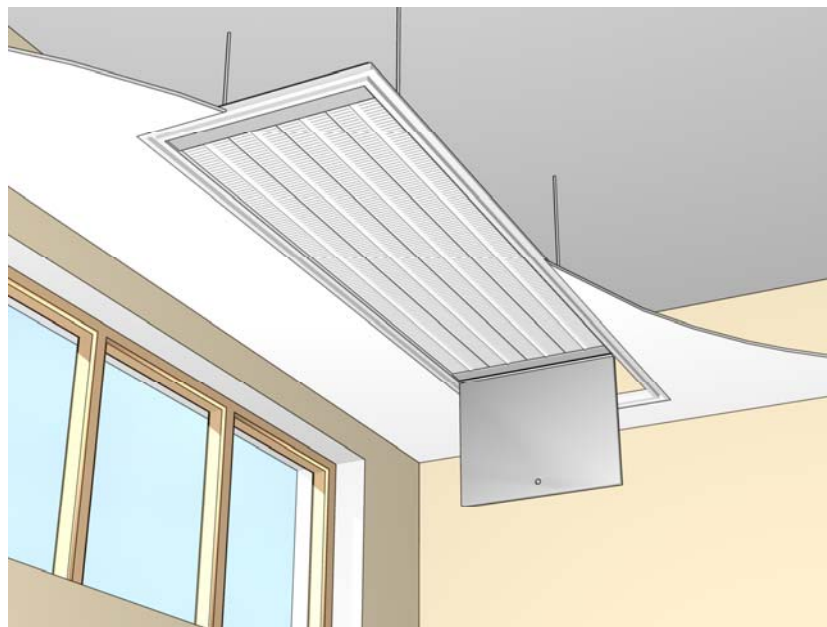
- Access provided through integral lockable access hatch.

### Connection

- Water connections to the Atrium panel should be made with compression or 'push-fit' fittings. Connections should **never** be soldered.
- Pipework inner sleeve reinforcement should be used when making connection to prevent possibility pipework crushing.

**Support**

- Atrium panel and access hatch arrangement is supplied pre-assembled. The unit is to be independently supported back to the structural soffit using rigid hangers connected to the panel's perimeter extrusion. The abutting plasterboard must **not** be fixed to the Atrium panel in any way as allowance must be made for the expansion of the heating panel within the plasterboard ceiling.



**Sizes**

- Nominal product sizes can be summarised as follows. Refer to product drawings for exact dimensions.

panel length (mm)	panel width (mm)	hatch size (mm)
1200	870	870 x 300
1800	870	870 x 300
2400	870	870 x 300
3000	870	870 x 300
3600	870	870 x 600

panel length (mm)	panel width (mm)	hatch size (mm)
600	600	600 x 300
900	600	600 x 300
1200	600	600 x 300
1800	600	600 x 300
2400	600	600 x 300
3000	600	600 x 300
3600	600	600 x 600

panel length (mm)	panel width (mm)	hatch size (mm)
1200	330	330 x 300
1800	330	330 x 300
2400	330	330 x 300
3000	330	330 x 300
3600	330	330 x 600

**Panel Capacity**

- Products tested in accordance with Scandinavian V-method. Testing details available upon request.

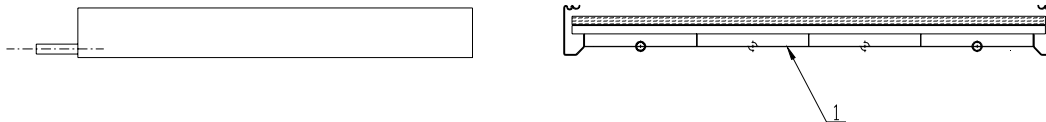
Room $\Delta t$ k	W/m <sup>2</sup>
50	600
55	677
55.5	684
60	755

**Minimum Flow Rates**

It is most important that minimum water mass flow rates are observed in order that product heating capacity is realised.

Min. Permitted Flow (l/s)	Width 33	Width 60	Width 87
Manifold conn. 10	0.011	0.011	0.011
Manifold conn. 12	0.022	0.022	-
Manifold conn. 15	-	0.044	0.033
Manifold conn. 22	-	-	0.066
Maximum Working Pressure (bar)	10		
Maximum Test Pressure (bar)	16		

**Maintenance**



- Atrium should be cleaned at regular intervals. How often depends on the relevant indoor environment.
- Cleaning means removal of dust. It is recommended to use a vacuum cleaner and a clean damp cloth.
- Vacuum clean the casing, and then dry the casing with a soft clean cloth.
- If there are any spots on the casing, clean these with diluted mild detergent and dry as above.