JUPITER

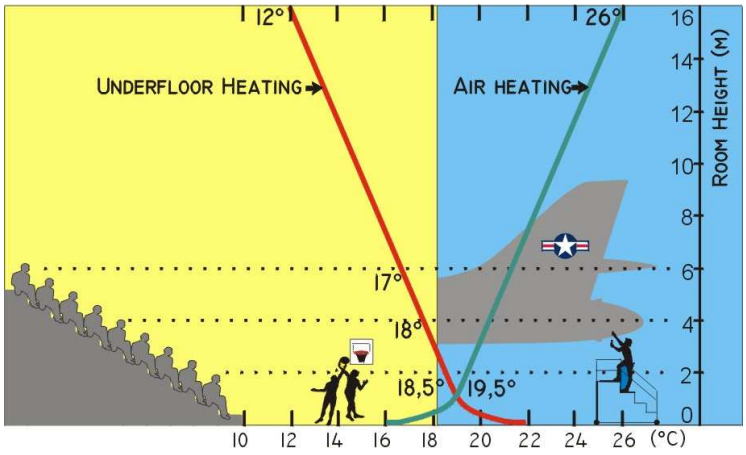
System INDUSTRY

Application

System INDUSTRY is the heavy duty underfloor heating solution from JUPITER suitable for a wide range of industrial applications. As is commonly known, underfloor heating radiates heat from the floor up and is perfect for use in large, open plan buildings by keeping the immediate area warm where the workforce operate. Savings with underfloor heating can be up to 30% over traditional high level warm air systems, not only by using less energy but by dramatically reducing maintenance costs.

Temperature profile

The difference in temperature profile between an underfloor heating system and traditional high level warm air system is clear to see. The congregation of warm air just below the ceiling is demonstrated in this diagram.



The advantages

Reduced energy costs
Space saving
Lower initial capital outlay
Meets minimum floor temperature requirements (18°)
Ideal temperature profile
Lower temperature water supply (i.e. heat pump)
Completely maintenance free
No dust created – no major warm air circulation

Installation

JUPITER System INDUSTRY is integrated within the concrete floor slab. The various options are:

- Concrete slab reinforced with lower and upper steel mesh reinforcement
- Pre-stressed concrete with mesh reinforcement
- Steel fibre concrete without mesh reinforcement
- Vacuum concrete (steel, pre-stressed or steel fibre in conjunction with specific vacuum process)

If insulation is to be incorporated beneath the slab, a product with high compressive strength and moisture resistance should be used. i.e. XPS or Foamglass

Typically the mesh reinforcement is used to fix the underfloor heating pipe work. Using 3 cable ties per linear metre the pipe is fixed to the lower of the two steel meshes. Pipe work within slabs without steel reinforcing mesh can be fixed down using traditional pipe clip rail.

Pipe dimension

JUPITER System INDUSTRY is based on the proven 20 x 2.25mm multi layer pipe PERT aluminium core pipe.

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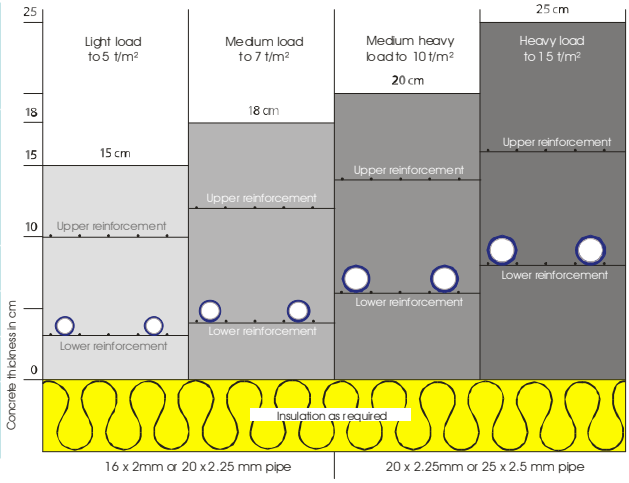
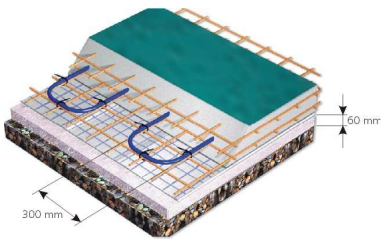
As a rule the pipe layout is fixed to the lower steel reinforcement mesh, so that the drilling depth (for the fixing of machinery or storage systems) does not come in contact with the pipe work.

Slab Thickness	Mesh Type	Distance: Upper mesh to top of slab	Application	Max. static Load /m²	Max. moving load with = axle load
150mm	Q131 Single layer	80 mm	Workshops and vehicle showrooms (limited to cars)	30 kN/1,5t	12 kN/1,2t
150mm	Q131 Double layer	80 mm	Workshops and vehicle showrooms (limited to 7.5t)	50 kN/5,0t	16 kN/1,6t
180mm	Q131 Double layer	110 mm	Warehouses with Fork lifts & trucks to 5t	70 kN/7,0t	50 kN/5,0t
200mm	Q188 Double layer	130 mm	Machinery factory with Rolling traffic <=7,5t	100 kN/10,0t	70 kN/7,0t
250mm	Q131	80 mm	High level shelving storage Accessible for large trucks	150 kN/15,0t	100 kN/10,0t

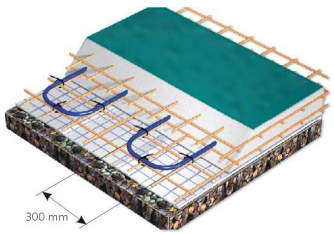
Minimum construction height	150mm 2 x Q131 mesh
Pipe distances	15 45 cm Type SI 1: 15cm = 6,67 lm/m² Type SI 2: 30cm = 3,33 lm/m² Type SI 3: 45cm = 2,22 lm/m²
Maximum pipe length	110 mm
Distance pipe – floor surface	40 - 100 mm
Pipe dimension	20 x 2,25mm
Typical performance	80W/m² with Type SI 2 & flow temp. of 45-50℃



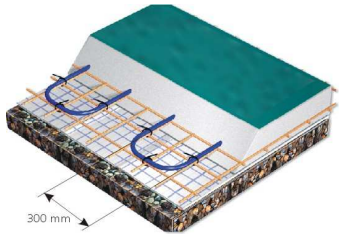
Construction variations



B1
with insulation
Double mesh reinforcement



B2
without insulation
Double mesh reinforcement



B3
without insulation
Single mesh reinforcement

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