TECHNICAL DATA SHEET

VALSIR® RADIANT SYSTEMS

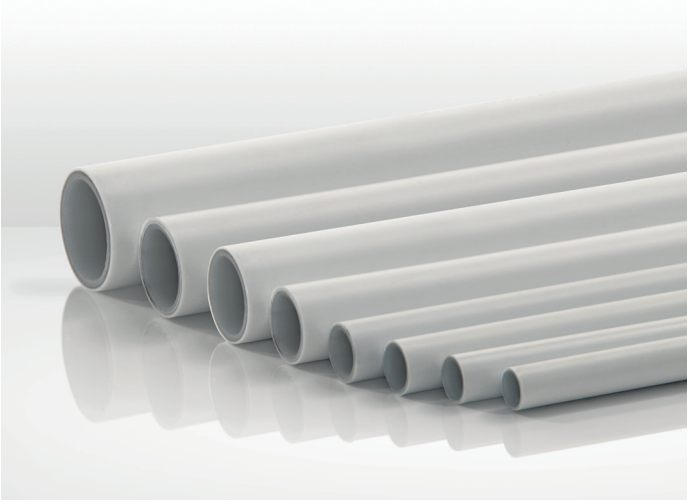
RADIANT SYSTEMS

valsir®
QUALITY FOR PLUMBING

MIXAL

The product

Mixal® is an extremely flexible multilayer pipe and is therefore ideal for the creation of floor, wall and ceiling radiant heating and cooling systems. Thanks to its excellent performances it can also be used for hot and cold potable water supply, for convector and radiator heating systems, in industrial plants as well as for compressed air distribution systems.
Mixal® combines the advantages of synthetic materials (crosslinked polyethylene and high density polyethylene) such as resistance to abrasion and corrosion, chemical resistance and hygiene with those of the aluminium such as resistance to high temperatures and pressures, dimensional stability, impermeability to oxygen and light, and low thermal expansion.

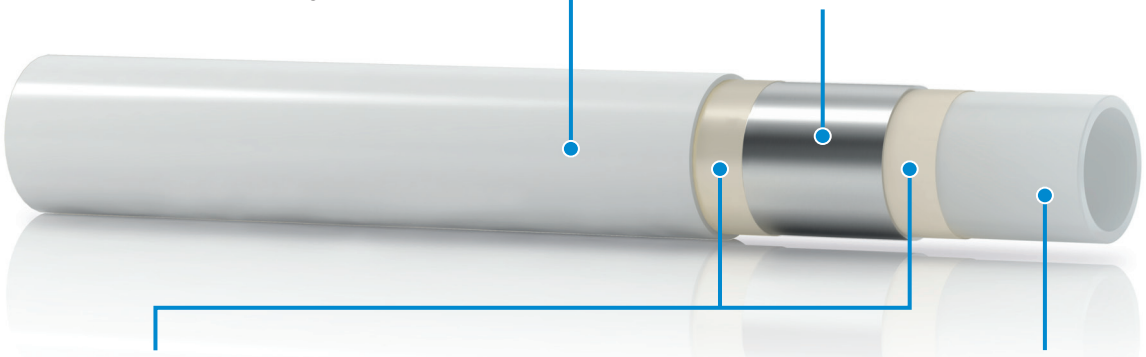


The result is a product consisting of different layers of materials that combined together allow excellent properties to be obtained which can not be reached by a pipe made of only one material.

Figure Layering of the pipe.

External layer
Produced with high density polyethylene, it provides a mechanical, electrical and chemical protection for the aluminium layer, thus shielding it from knocks, scratches or the electrochemical aggression of water, cement and other substances contained in the ground.

Intermediate layer
This is made up of an aluminium alloy with longitudinal butt welding that guarantees a **total barrier to the passage of oxygen and light** and provides excellent mechanical resistance and flexibility during installation.



Bonding layers
These are made up of a powerful adhesive that bonds the intermediate aluminium layer with the internal and external layers.

Internal layer
The internal layer of the pipe is made up of a crosslinked polyethylene PE-Xb pipe that has been approved for the transport of consumable liquids and drinking water. It is also characterised by an **extremely smooth surface** that reduces pressure loss.

Hygiene
Non-toxic materials are used for the pipes and fittings and the system is certified for drinkable water distribution.

Ecology
Mixal® is manufactured with fully recyclable materials, the production processes are energy efficient in order to have a low impact on the environment. Valsir adopts Green Building principles, with an eye on environmental protection and the conservation of resources.

Technical data

Table Typical technical data.

Features	Values	Testing methods
Material	Crosslinked polyethylene PE-Xb internal layer, internal bonding layer, intermediate aluminium layer, external bonding layer, high density polyethylene HDPE external layer.	-
Colour	RAL white 9003	-
Dimensions	14÷32 mm	-
Application	Hot and cold potable water distribution, convector and radiator heating systems, radiant heating and air cooling systems, compressed air distribution systems, industrial installations.	-
Fittings	Pexal® Brass, Bravopress® and Pexal® Twist	-
Minimum operating temperature(1)	-60°C	-
Maximum temperature(2)	+95°C/+100°C	EN ISO 21003-1
Maximum pressure	+10 bar	EN ISO 21003-1
Density at 23°C	> 0.950 g/cm^3 (crosslinked polyethylene)	-
Softening temperature	135°C	-
Thermal expansion coefficient	0.026 mm/m·K	-
Thermal conductivity	0.42÷0.52 W/m·K	-
Internal roughness	0.007 mm	-
Oxygen permeability	0 mg/l	-
UV Resistance	Yes, if protected with UV-resistant paint	-
Halogen levels	Halogen-free	-
Fire resistance class	B-s2,d0	EN 13501-1

(1) At any rate above the freezing temperature of the transported fluid.
(2) For more details see the “Application fields” section.

Application fields

The conditions of use of Mixal® pipes are shown in the technical data tables outlined above, however, according to the international standard EN ISO 21003-1 there are four classes of application that need to be laboratory tested in combination with the operating pressure p_D chosen by the producer, which can be 4, 6, 8, 10 bar. These application classes are given in the table below. **The Mixal® pipes are certified for all four classes of application for pressures up to 10 bar.**

Table Application fields and operating conditions in compliance with EN ISO 21003-1.

Application class	Operating temperature T_D	Duration of T_D	Maximum operating temperature T_{max}	Duration of T_{max}	Malfunctioning temperature T_{mal}	Duration of T_{mal}	Typical application
	[°C]	[years]	[°C]	[years]	[°C]	[hours]	
1[a]	60	49	80	1	95	100	Domestic hot water (60°C)
2[a]	70	49	80	1	95	100	Domestic hot water (70°C)
4[a]	20 + 40 + 60	2,5 + 20 + 25	70	2,5	100	100	Floor heating and low temperature systems
5[a]	20 + 60 + 80	14 + 25 + 10	90	1	100	100	High temperature heating systems

Range

The Mixal® pipes are available in coils or straight lengths from a 14 mm diameter to a 32 mm diameter, with a 6 and 10 mm insulating sheath or with a corrugated protective sheath.

Pipe dimensions	Mixal® pipe in coils	Mixal® pipe in straight lengths	Mixal® pipe with 6 mm insulating sheath	Mixal® pipe with 10 mm insulating sheath	Mixal® pipe with corrugated protective sheath
14x2	100 m	5 m	50 m (grey)	-	50 m (red, blue)
16x2	100, 120, 200, 240, 500 m	5 m	50 m (grey, red, blue)	50 m (blue)	50 m (red, blue)
18x2	100 m	5 m	50 m (grey)	-	50 m (red, blue)
20x2	100, 120, 240, 400 m	5 m	50 m (grey, red, blue)	50 m (blue)	50 m (red, blue)
20x2.25	100 m	5 m	50 m (grey)	-	-
25x2.5	50 m	5 m	50 m (grey)	-	-
26x3	50 m	5 m	50 m (grey, red, blue)	50 m (blue)	-
32x3	50 m	5 m	-	25 m (grey)	-

Mixal® pipe features

Mixal® pipes without insulation are suitable for a multitude of applications and if necessary can be suitably insulated once installation has been completed.

Table Mixal® pipe features.

External diameter	**[mm]**	14	16	18	20	20	25	26	32
Thickness	**[mm]**	2	2	2	2	2.25	2.5	3	3
Internal diameter	**[mm]**	10	12	14	16	15.5	20.5	20	26
Water volume	**[l/m]**	0.078	0.113	0.154	0.201	0.188	0.329	0.314	0.53
Weight	**[g/m]**	90	105	120	141	147	223	256	332
Weight with water	**[g/m]**	168	218	274	342	335	551	569	861
Operating temperature	**[°C]**	0÷80	0÷80	0÷80	0÷80	0÷80	0÷80	0÷80	0÷80
Maximum operating temperature	**[°C]**	95	95	95	95	95	95	95	95
Maximum operating pressure	**[bar]**	10	10	10	10	10	10	10	10
Thermal expansion coefficient	**[mm/m·K]**	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026
Thermal conductivity	**[W/m·K]**	0.42	0.42	0.42	0.43	0.42	0.44	0.43	0.44
Internal roughness	**[mm]**	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
Oxygen permeability	**[mg/l]**	0	0	0	0	0	0	0	0

Connection systems

The Mixal® pipes can be combined with the different types of Valsir fittings.

Mixal® pipe	Pexal® Brass Brass press fittings	Bravopress® Multi-press PPSU fittings	Pexal Easy® Full bore PPSU fittings	Pexal® Twist Brass compression fittings
14x2	•			•
16x2	•	•		•
18x2	•			•
20x2	•	•		•
20x2.25	•	•		
25x2.5	•	•		
26x3	•	•		•
32x3	•	•		•

Approvals:

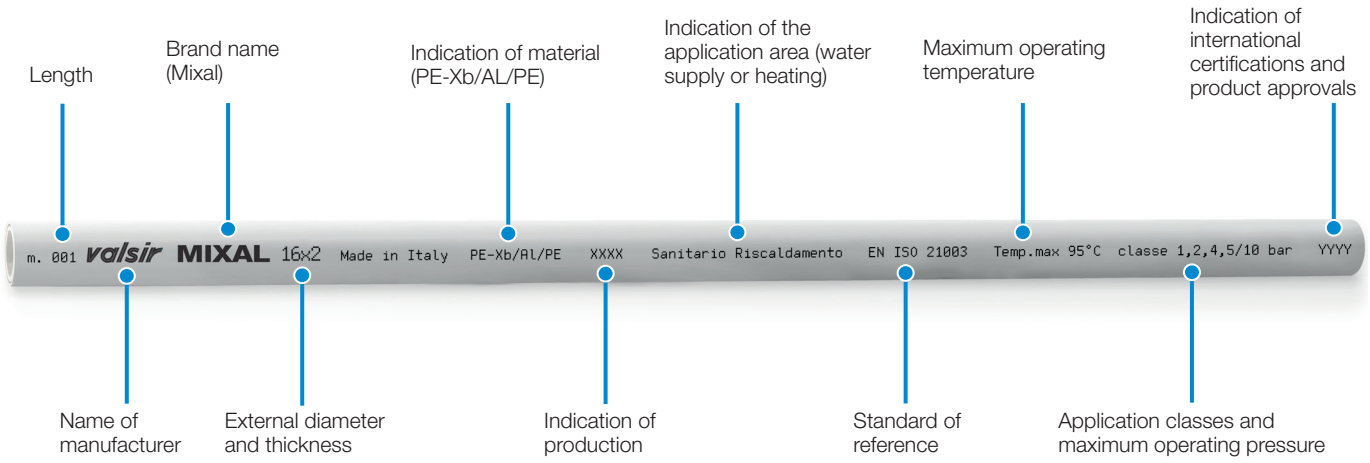
The approvals of Valsir® supply systems are available on the website: www.valsir.com

Potability

The Mixal® system is suitable and has been certified by international institutes for applications in water supply distribution systems: Belarus, France, Hungary, Italy, Poland, Romania, Serbia, Russia, and Ukraine.

Marking

The marking of the Mixal® pipes contains all the information required by current regulations as well as all the data necessary to trace the product.



THERMOLINE

The product

Thermoline® is a plastic pipe produced with crosslinked polyethylene and is supplied with and without an oxygen barrier (EVOH). This product is widely used for the production of floor, wall and ceiling heating and cooling **radiant systems** but also for **heating systems** in general.

Thermoline® has an excellent resistance to abrasion, corrosion, and chemical agents and is characterized by excellent hygiene and exceptional elasticity.

Figure Layering of the pipe with oxygen barrier (EVOH).

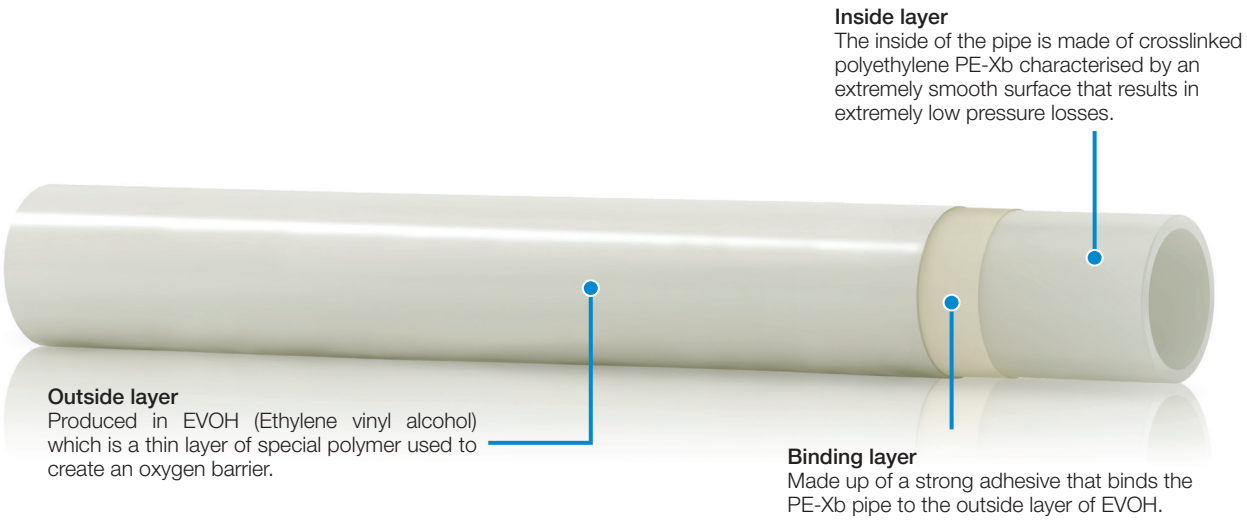


Figure Layering of the pipe without oxygen barrier (EVOH).

Technical data

Table Typical technical data.

Features	Value	Testing methods
Material	Crosslinked polyethylene PE-Xb. The pipe with an oxygen barrier also has an adhesive layer and an EVOH outer layer.	-
Colour	Translucent white	-
Dimensions	12÷25 mm	-
Application	Radiator heating systems, convector heating systems, radiant heating and cooling systems.	-
Fittings	Pexal® Brass, Bravopress® and Pexal® Twist fittings	-
Minimum operating temperature(1)	-100°C	-
Maximum temperature(2)	+100°C	EN ISO 21003-1
Maximum pressure	Differs according to the pipe diameter, see section “Application fields”	-
Density at 23°C	> 0.950 g/cm^3 (crosslinked polyethylene)	-
Softening temperature	135°C	-
Ultimate strength at 23°C	20 MPa	-
Thermal expansion coefficient	0.14÷0.20 mm/m·K	-
Thermal conductivity	0.38 W/m·K	-
Internal roughness	0.007 mm	-
Oxygen permeability	In relation to the diameter, see the “Range” chapter.	DIN 4726
UV Resistance	No	-
Halogen levels	Halogen-free	-

(1) At any rate above the freezing temperature of the transported fluid.
(2) For more details see the “Application fields” section.

Application fields

The Thermoline® pipes are manufactured and certified according to EN ISO 15875 and therefore can be used, in relation to the application class and the working pressure indicated in the technical data table outlined above, at the temperature and duration conditions specified in the following table.

Table Application fields and operating conditions in accordance with ISO 15875-1.

Application class	Operating temperature T_D	Duration of T_D	Maximum operating temperature T_{max}	Duration of T_{max}	Malfunctioning temperature T_{mal}	Duration of T_{mal}	Typical application
	[°C]	[years]	[°C]	[years]	[°C]	[hours]	
4[a]	20 + 40 + 60	2.5 + 20 + 25	70	2.5	100	100	Floor heating and low temperature systems
5[a]	20 + 60 + 80	14 + 25 + 10	90	1	100	100	High temperature heating system

DIN 16893 suggests another method to evaluate the operating conditions of crosslinked polyethylene pipes; with this standard it is possible to calculate the maximum operating pressure of the pipes at different temperatures as indicated in the following table.

Table Maximum operating pressures calculated in accordance with DIN 16893.

External diameter	**[mm]**	12	14	15	16	17	18	20	20	25
Thickness	**[mm]**	2	2	2.5	2	2	2	2	2.8	2.3
Maximum pressure at 20°C	**[bar]**	25.2	21.0	25.2	18.0	16.8	15.8	14.0	20.5	12.5
Maximum pressure at 50°C	**[bar]**	17.6	14.7	17.6	12.6	11.8	11.0	9.8	14.4	8.8
Maximum pressure at 70°C	**[bar]**	14.1	11.8	14.1	10.1	9.4	8.8	7.8	11.5	7.0

Note. The maximum mechanical stress of crosslinked polyethylene at 50 years and a safety factor SF of 1.5 were taken into consideration.

Range

The Thermoline® pipes are available in coils from diameter 12 mm to diameter 25 mm, with or without an oxygen barrier (EVOH) and with a corrugated protective sheath

Pipe dimensions	Thermoline® EVOH pipe (with oxygen barrier)	Thermoline® pipe (without oxygen barrier)	Thermoline® pipe (without oxygen barrier) with corrugated protective sheath
12x2	200 m	-	-
14x2	200, 240, 600 m	-	-
15x2.5	200 m	-	20 m (red, blue)
16x2	120, 200, 240, 480, 600 m	100 m	50 m (red, blue)
17x2	120, 200, 240, 480, 600 m	-	-
18x2	200 m	100 m	50 m (red, blue)
20x2	120, 200, 240, 480, 600 m	100 m	50 m (red, blue)
20x2.8	200, 500 m	-	50 m (red, blue)
25x2.3	50 m	50 m	-

Thermoline® pipe features

Thermoline® pipes without insulation are used mainly for the construction of floor heating and cooling systems. If necessary, they can be insulated after the installation.

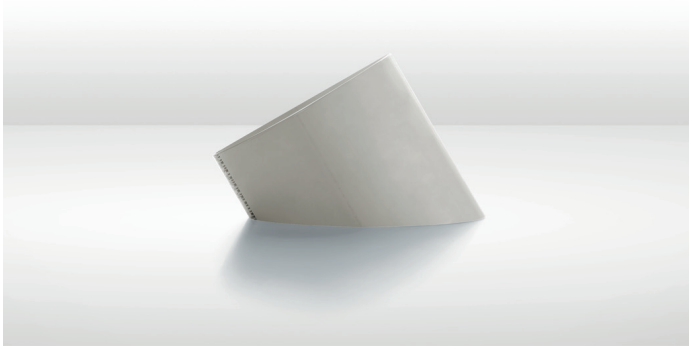


Table Thermoline® pipe features.

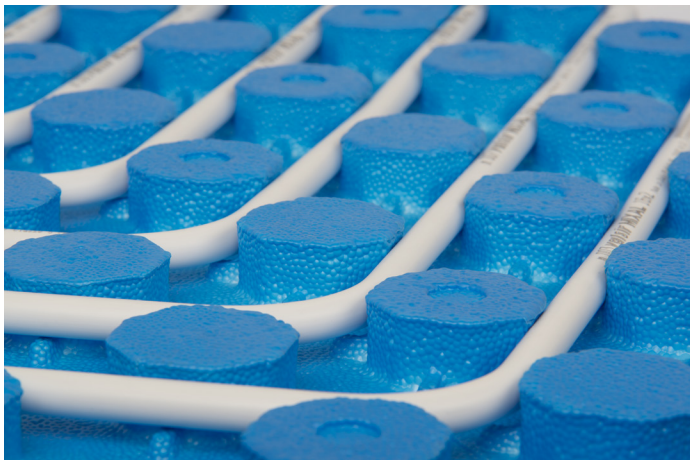
External diameter	**[mm]**	12	14	15	16	17	18	20	20	25
Thickness	**[mm]**	2	2	2.5	2	2	2	2	2.8	2.3
Internal diameter	**[mm]**	8	10	10	12	13	14	16	14.4	20.4
Water volume	**[l/m]**	0.050	0.079	0.079	0.113	0.133	0.154	0.201	0.163	0.327
Weight	**[g/m]**	65	78	100	91	97	103	116	153	206
Weight with water	**[g/m]**	115	156	179	203	229	256	317	316	532
Calculated series S_{calc}	**-**	2.5	3.0	2.5	3.5	3.8	4	4.5	3.1	4.9
Application class and operating pressure[1]	**[bar]**	Class 5/10	Class 5/10	Class 5/10	Class 4/10 Class 5/8	Class 4/10 Class 5/8	Class 4/10 Class 5/8	Class 4/8	Class 5/10	Class 4/8 Class 5/6
Thermal expansion coefficient at 20°C	**[mm/m·K]**	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Thermal expansion coefficient at 100°C	**[mm/m·K]**	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Thermal conductivity	**[W/m·K]**	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Internal roughness	**[mm]**	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
Oxygen permeability[2]	**[mg /m²·day]**	≤3.6 at 80°C	≤3.6 at 80°C	≤3.6 at 80°C	≤3.6 at 80°C	≤3.6 at 80°C	≤3.6 at 80°C	≤0.32 at 40°C	≤3.6 at 80°C	≤3.6 at 80°C

(1) In accordance with EN ISO 15875, for details, see the “Application fields” section.
(2) Requirements contained in DIN 4726.

V-ESSESYSTEM

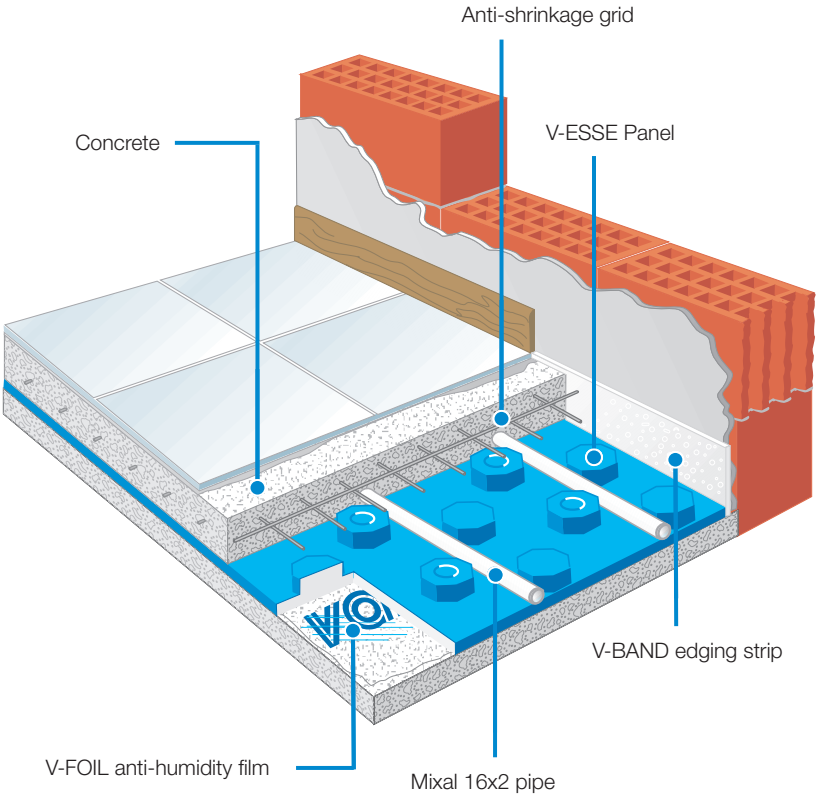
V-ESSE Panel

The V-ESSE panel is a polystyrene shaped panel with a blue EPS film that gives a good surface resistance to wear. It is a panel studied and designed for domestic, commercial areas or warehouses where the load on the floor is not too high. The density of the panel is in fact of 30 kg / mc with a compressive strength of 150 kPa.
The distance of the pipes in the installation are available in multiples of 75 mm and the panel is available in two thicknesses.



The V-ESSE20 has a base thickness of 20 mm for a total of 50 mm, the V-ESSE30 has a base thickness of 30 mm for a total of 60 mm. The V-ESSE panel is characterized by a L-profile battens that allows a stable coupling.

Figure Stratigraphy.



Installation

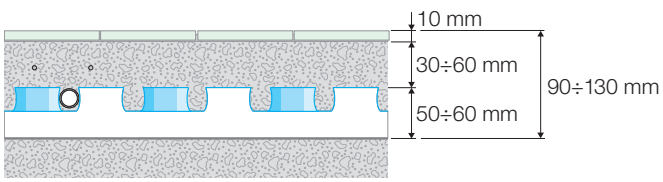


Table Characteristics of V-ESSE Panel.

Panel characteristics	Unit of measurement	V-ESSE20	V-ESSE30	Standards
Class of resistence	-	Class 150	Class 150	UNI EN ISO 13163
Use		Residential systems or commercial areas such as offices and shops or warehouses with load on the average density floor.		
Panel raw material	-	Expanded polystyrene with blue EPS film.	Expanded polystyrene with blue EPS film.	-
Type of surface	-	Preformed	Preformed	-
Panel dimentions HxL	mm x mm	1350x750	1350x750	-
Total panel dimentions H_1xL_1	mm x mm	1370x770	1370x770	-
Panel surface	m^2	1,012	1,012	-
Distance between pipes	mm	75	75	-
Insulation thickness s_1	mm	20	30	-
Total height of the panel s	mm	50	60	-
Density	kg/m^3	30	30	UNI EN ISO 845
Loading resistance	kPa	150	150	UNI EN ISO 13163
Flexural resistance	kPa	250	250	UNI EN ISO 13163
Fire resistance	-	Euroclass E	Euroclass E	EN 13501-1
Dimentional stability at 70°C for 48 h	%	±0,5	±0,5	UNI EN ISO 13163
Thermal conduction	W/mK	0,034	0,034	UNI EN ISO 13163
Thermal resistivity	m^2K/W	0,8	1,1	-
Packaging	-	Carton box	Carton box	-
Number of panels for each packaging	-	12	10	-
Packaging surface	m^2	12,14	10,12	-
Number of packaging each pallet		5	5	
Mark		CE	CE	

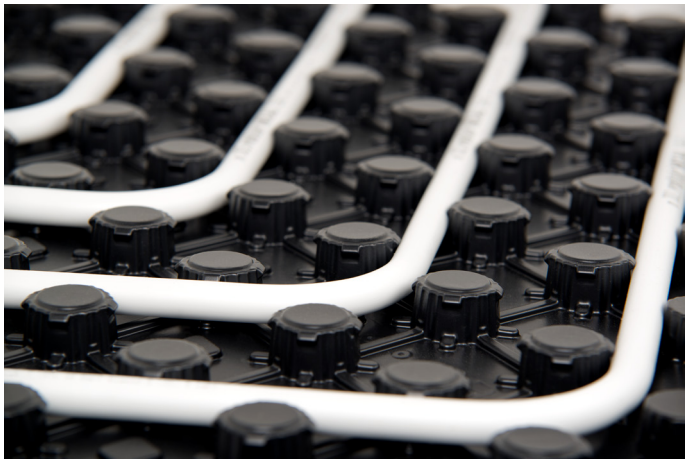
Approvals:

The approvals of Valsir® radiant systems are available on the website: www.valsir.com

V-ERRESYSTEM

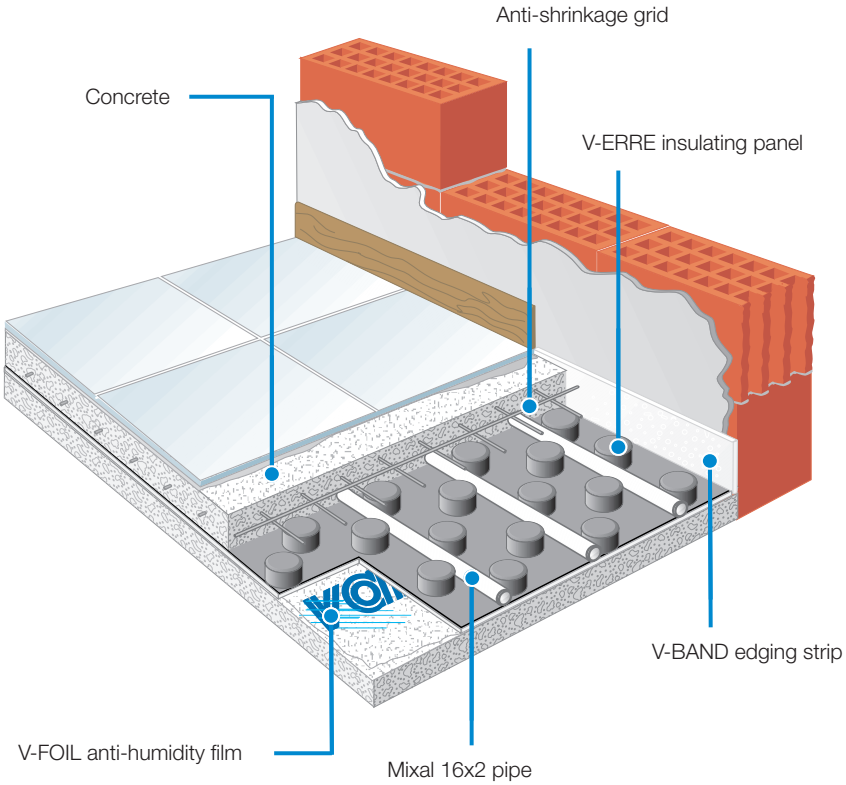
V-ERRE Panel

The V-ERRE panel is the ideal solution for buildings where the installation space is reduced and the installation has to be done without loosing the advantages of a underfloor heating and cooling systems.
V-ERRE is a panel with excellent mechanical characteristics, ideal for any application of new buildings and renovations where the available thickness is less than 70 mm.



The shaped panel V-ERRE is achieved by coupling a preformed slab of expanded polystyrene having a 10 mm base thickness with a black rigid EPS sheet equipped with indentations for the installation of the pipes. The overall height is of 32 mm. Manufactured in compliance with the UNI EN ISO 13163 and CE mark and in accordance with European directives,the panel allows 50 mm of minimum distance between the pipes and it is characterized by a load resistance of 200 kPa.

Figure Stratigraphy.



Installation.

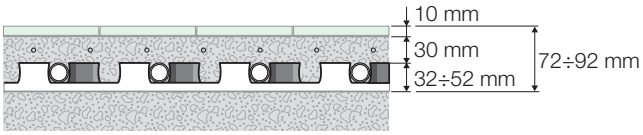


Table Characteristics of V-ERRE Panels.

Panel characteristics	Unit of measurement	V-ERRE10	V-ERRE20	V-ERRE30	Standards
Class of resistence	-	Class 200	Class 150	Class 150	UNI EN ISO 13163
Use	-	Residential systems or commercial areas such as offices and shopi.	Residential systems or commercial areas such as offices and shopi.	Residential systems or commercial areas such as offices and shopi.	-
Panel raw material	-	Expanded polystyrene with black EPS film.	Expanded polystyrene with black EPS film.	Expanded polystyrene with black EPS film.	-
Type of surface	-	Preformed	Preformed	Preformed	-
Panel dimentions HxL	mm x mm	1200x800	1200x800	1200x800	-
Total panel dimentions H_1xL_1	mm x mm	1250x850	1250x850	1250x850	-
Panel surface	m^2	0,96	0,96	0,96	-
Distance between pipes	mm	50	50	50	-
Insulation thickness s_1	mm	10	20	30	-
Total height of the panel s	mm	32	42	52	-
Density	kg/m^3	30	25	25	-
Loading resistance	kPa	200	150	150	EN 826
Flexural resistance	kPa	250	200	200	EN 12089
Fire resistance	-	Euroclass E	Euroclass E	Euroclass E	EN 13501-1
Thermal conduction	W/mK	0,035	0,035	0,035	UNI EN ISO 13163
Thermal resistivity	m^2K/W	0,45	0,75	1,0	-
Packaging	-	Carton box	Carton box	Carton box	-
Number of panels for each packaging	-	19	14	10	-
Packaging surface	m^2	18.24	13.44	9.60	-
Number of packaging each pallet		6	6	6	
Mark		CE	CE	CE	

Approvals:

The approvals of Valsir® radiant systems are available on the website: www.valsir.com

V-ZETASYSTEM

V-ZETA Panel

The V-ZETA panel is the economical solution to realise underfloor heating and cooling systems for industrial, civil and commercial buildings.
It is a shaped panel of expanded polystyrene with compressive resistance of 200 kPa equipped with joints for fixing the pipes.
The V-ZETA panel complies with the UNI EN ISO 13163 and it is CE marked.
The size of panel is 1200x750 mm and it has a 20 mm base thickness for a total of 50 mm.
The distance between the pipes is 75 mm.

Figure Stratigraphy.

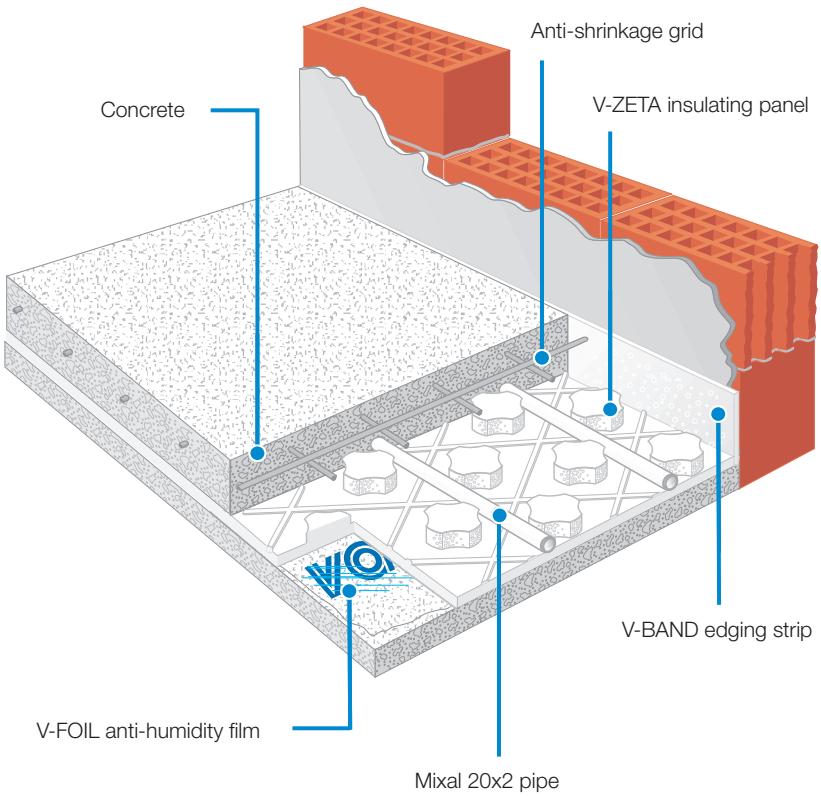


Figure Installation.

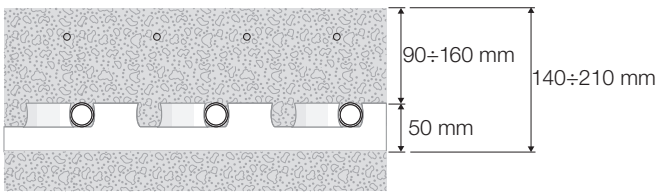


Table Characteristics of V-ZETA panel.

Panel characteristics	Unit of measurement	V-ZETA	Standards
Class of resistence	-	Class 200	UNI EN ISO 13163
Use	-	Residential plants or commercial areas as offices or shops, and industrial plants	-
Panel raw material	-	White expanded polystyrene	-
Type of surface	-	Preformed	-
Panel dimentions HxL	mm x mm	1200x750	-
Total panel dimentions H_1xL_1	mm x mm	1220x770	-
Panel surface	m^2	0,9	-
Distance between pipes	mm	75	-
Insulation thickness s_1	mm	20	-
Total height of the panel s	mm	50	-
Density	kg/m^3	30	-
Loading resistance	kPa	200	EN 826
Flexural resistance	kPa	250	EN 12089
Fire resistance	-	Euroclass E	EN 13501-1
Thermal conduction	W/mK	0,035	UNI EN ISO 13163
Thermal resistivity	m^2K/W	0,8	-
Packaging	-	Carton box	-
Number of panels for each packaging	-	12	-
Packaging surface	m^2	10,8	-
Number of packaging each pallet		5	
Mark		CE	

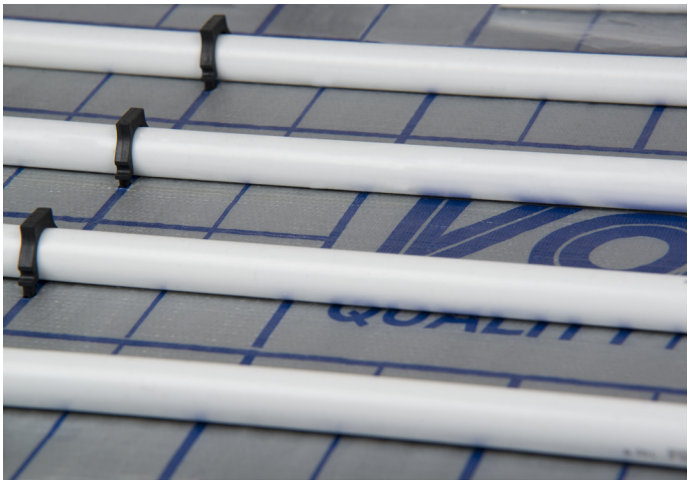
Approvals:

The approvals of Valsir® radiant systems are available on the website: www.valsir.com

V-ELLESYSTEM

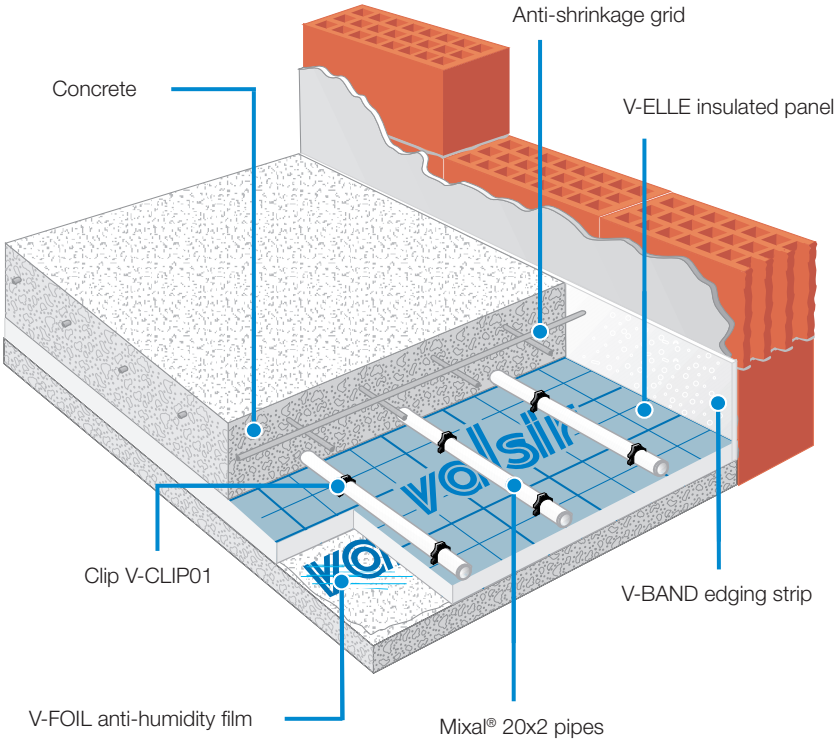
V-ELLE Panel

The V-ELLE panel is a smooth panel made of expanded polystyrene with gray aluminized polyester film on which a red grid is obtained having a pitch of 50 mm to facilitate the installation.
It is supplied in rolls that are placed very easily by simply unrolling the panel on the floor. It comes in two versions with different thickness and compressive resistance; these structural differences make them suitable for different applications.
The V-ELLE20 / 200 panel has a thickness of 20 mm, has a density of 30 kg / m3 and a compressive strength of 200 kPa.



These characteristics make it suitable for residential or commercial heating systems but especially for those areas where the available height for the installation must be less than 100 mm.
The panel V-ELLE30 / 250 has thickness of 30 mm and a density of 40 kg / m3. Because of its high compressive resistance of 250 kPa it can be used in both residential and industrial applications, where the load resistance required is very high. It is also ideal for snow and ice melting systems (access ramps, parking, etc.).

Figure Stratigraphy.



Installation.

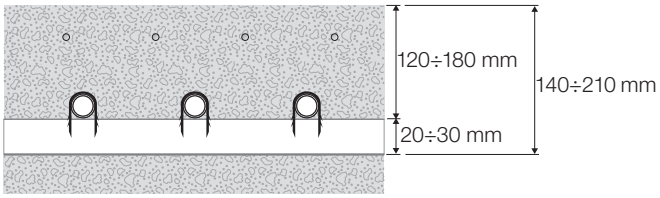


Table Characteristics of V-ELLE. panel

Panel characteristics	Unit of measurement	V-ELLE20/200	V-ELLE30/250	Standards
Class of resistence	-	Class 200	Class 250	UNI EN ISO 13163
Use		Residential systems or commercial areas such as offices and shops or warehouses with medium intensity loading on the floor. Specifically designed for installations where the installation height is limited.	Residential or commercial areas but is especially suitable for industrial installations thanks to its high compressive strength. It is suitable for snow melting systems.	
Panel raw material		Polystyrene foam with multilayer aluminized film gray with blue grid		
Type of surface	-	Smooth	Smooth	-
Panel dimentions HxL	mm x m	1000x12	1000x12	-
Panel surface	m^2	12	12	-
Insulation thickness s_1	mm	20	30	-
Density	kg/m^3	30	40	UNI EN ISO 845
Loading resistance	kPa	200	250	UNI EN ISO 13163
Flexural resistance	kPa	250	350	UNI EN ISO 13163
Fire resistance	-	Euroclass E*	Euroclass E*	EN 13501-1
Dimentional stability at 70°C for 48 h	%	±0,5	<1	UNI EN ISO 13163
Thermal conduction	W/mK	0,033	0,033	UNI EN ISO 13163
Thermal resistivity	m^2K/W	0,6	0,90	UNI EN ISO
Packaging	-	Polyethylene box	Polyethylene box	-
Number of panels for each packaging	-	1	1	
Surface of each packaging	m^2	12	10	
Number of packaging each pallet		8	6	
Mark		iiP CE	iiP CE	

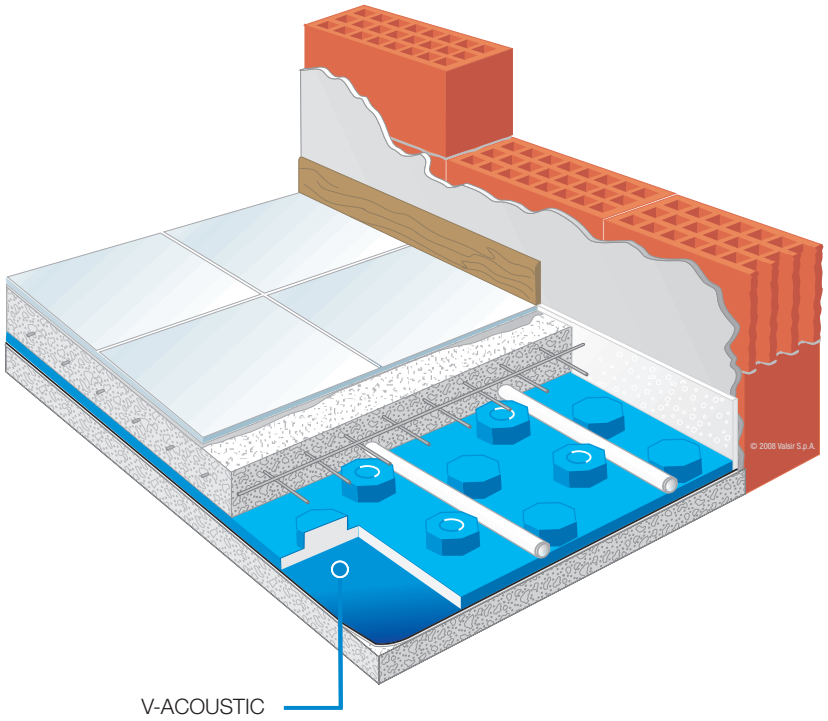
Approvals:

The approvals of Valsir® radiant systems are available on the website: www.valsir.com

V-ACOUSTIC - Acoustic membrane

The soundproofing membrane V-ACOUSTIC allows the creation of “floating floors” reducing the transmission of noise and providing maximum freedom in the choice of flooring materials. V-ACOUSTIC is an insulating product with very high characteristics which allows compliance with the acoustic requirements for footstep noise.
Thanks to the layer of non-woven and to its “Velcro effect fabric” it does not move during installation and prevents the unintended formation of acoustic bridges. ACOUSTIC-V must be installed on all floors, and immediately under the insulating panel; any Valsir insulation panel is compatible with the V-ACOUSTIC layer which can be used in different types of applications.
Due to the high water proofing characteristic, V-ACOUSTIC replaces the anti-humidity film.

Figure Stratigraphy of system with V-ACOUSTIC.



Technical data

Figure V-ACOUSTIC - Acoustic membrane

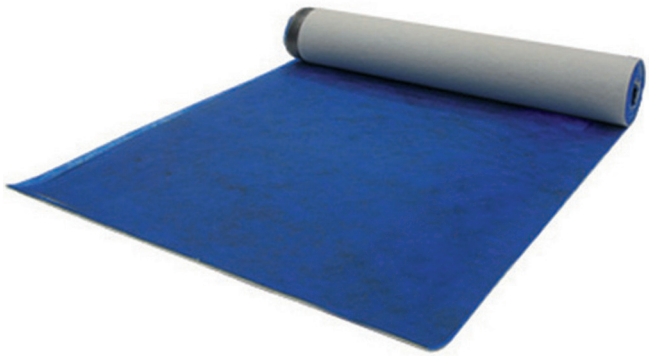


Figure V-ACOUSTIC - Acoustic membrane (detail).

Table Characteristic of V-ACOUSTIC.

Panel characteristics	Unit of measurement	V-ACOUSTIC	Standards
Total thickness before installation	mm	8,0	-
Thickness of soundproof layer	mm	1,5	-
Thickness of non-woven fabric layer	mm	6,5	-
Overlapping lenght	mm	50	-
Coil dimentions HxL	mm x m	1050x10	-
Specific weight	kg/m^2	1,6	-
Water proofing	-	Water proof	-
Improvement sound insulation to footstep Δl_r (1)	dB	33,5	ISO 717/82, UNI 8270/7
Improvement sound insulation to footstep ΔL_w (2)	dB	28,0	EN 12354-2
Thermal conduction of soundproof layer	W/m·K	0,170	
Thermal conduction of non-woven fabric layer	W/m·K	0,045	
Thikness compressibility with load of 200 kg/m^2	mm	≤1	EN 1606
Thikness compressibility	mm	≤2 (CP2)	EN 12431
Fire resistance	-	Class 1	
Packaging	-	Polyethylene box	
Number of coils for each packaging	nr.	1	
Surface of each packaging	m^2	10	
Number of packaging each pallet	-	20	

(1) The improved sound insulation to trampling is 500 Hz comparing a bare slab of 240 mm thick (l = 74.0 dB) with a slab with a “floating floor” (li = 40.5 dB).
(2) The sound insulation is achieved by improving the forecasting methods in accordance with EN 12354-2.

Approvals:

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