

## Company

KEBE SA, pioneer in the production of ceramic building products, is responding to the needs of the modern times for energy saving materials in buildings. After the great response of the customers to the building systems,



Following a course of progress and growth, for even greater thermal insulation and energy saving, KEBE SA offers new innovative products and building systems with the use of extruded polystyrene, **KEBE xps+**, **KEBE grey xps** and KEBE LINKER XPS system, the ideal thermal insulated façade by KEBE.



## Technical Characteristics

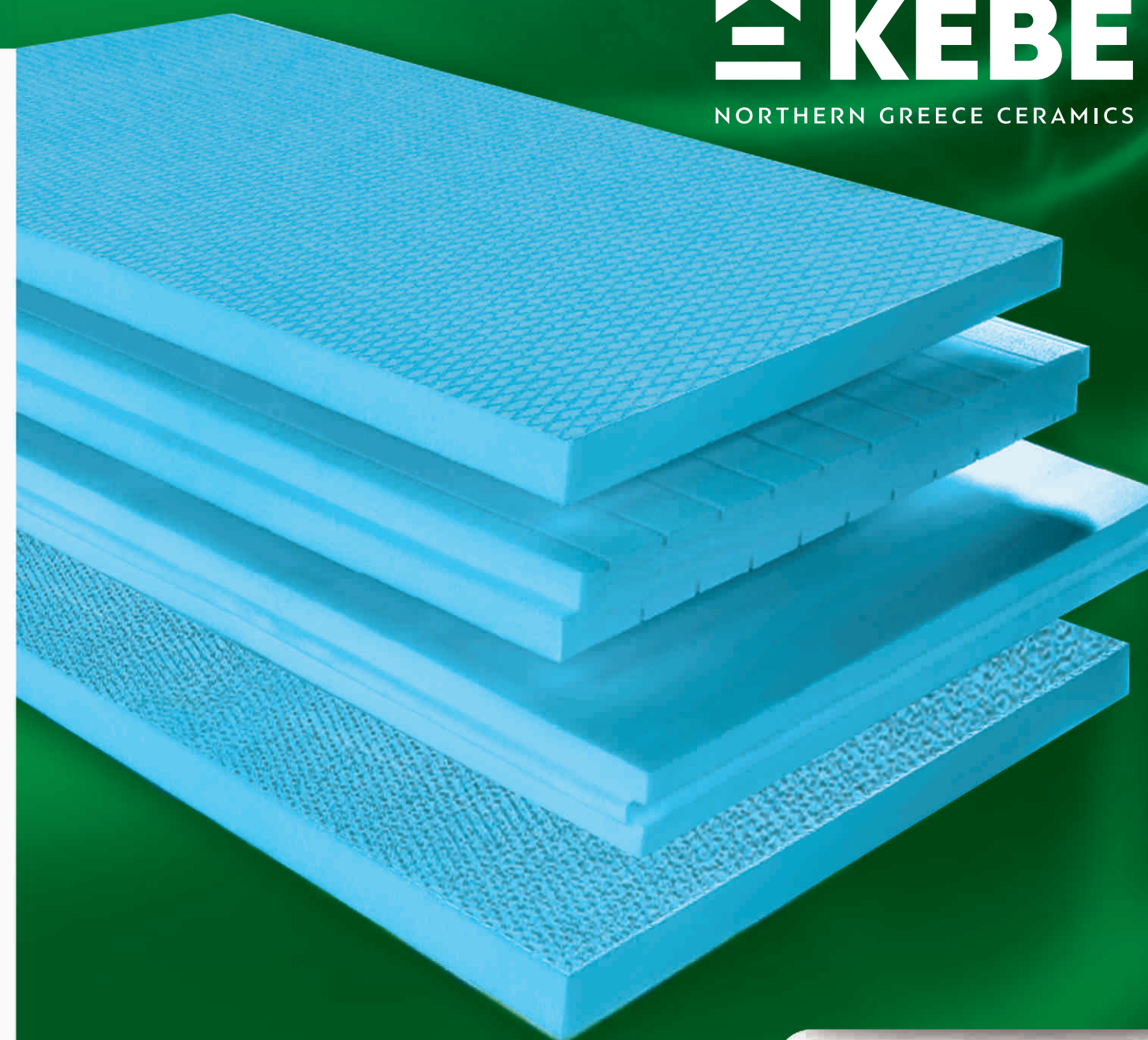


Properties	Units	Standard of Measurement	KEBE WL Wall	KEBE RF Roof	KEBE BT Shape	KEBE FL Floor	KEBE GF Embossed-Goirated	KEBE WRS Wall Respiring Surface			
<b>KEBE xps</b> Thermal conductivity coefficient* λD (max)	W/ (m k)	EN 12667	20 mm 0,0304	20 mm 0,0304	20 mm 0,0304	40-60mm 0,033	20 mm 0,0304	20 mm 0,0304			
			30 mm 0,0318	30 mm 0,0318	30 mm 0,0318	40-60mm 0,033	30 mm 0,0318	30 mm 0,0318			
			40-60mm 0,033	40-60mm 0,033	40-60mm 0,033	40-60mm 0,033	40-60mm 0,033	40-60mm 0,033			
			70-120mm 0,034	70-120mm 0,034	70-120mm 0,034	70-120mm 0,034	70-120mm 0,034	70-120mm 0,034			
<b>KEBE grey xps</b> Thermal conductivity coefficient* λD (max)	W/ (m k)	EN 12667	20 mm 0,030	20 mm 0,030	20 mm 0,030	20 mm 0,030	20 mm 0,030	20 mm 0,030			
			30-40mm 0,031	30-40mm 0,031	30-40mm 0,031	30-40mm 0,031	30-40mm 0,031	30-40mm 0,031			
			50-100mm 0,032	50-100mm 0,032	50-100mm 0,032	50-100mm 0,032	50-100mm 0,032	50-100mm 0,032			
			20 mm 0,030	20 mm 0,030	20 mm 0,030	20 mm 0,030	20 mm 0,030	20 mm 0,030			
<b>KEBE xps</b> Thermal conductivity coefficient λ (max)	kPa	EN 826	20 mm 180	20 mm 180	20 mm 180	400	20 mm 200	20 mm 180			
			30 mm 200	30 mm 200	30 mm 200		30 mm 250	30 mm 200			
			40-50mm 250	40-50mm 250	40-120mm 300		40-50mm 300	40-120mm 300			
			60-120mm 300	60-120mm 300	60-120mm 300		60-120mm 300	60-120mm 300			
<b>KEBE grey xps</b> Thermal conductivity coefficient λ (max)	kPa	EN 826	20 mm 180	20 mm 180	20 mm 180	20 mm 180	20 mm 200	20 mm 180			
			30-40mm 200	30-40mm 200	30-40mm 200	30-40mm 200	30-40mm 250	30-40mm 200			
			50-100mm 250	50-100mm 250	50-100mm 300	50-100mm 250	50-100mm 300	50-100mm 300			
<b>KEBE xps</b> +	W/ (m k)	EN 12667	0,029	0,029	0,029	0,029	0,029	0,029			
			Reaction to fire	-	EN 13501-1 EN ISO 11925-2	E	E	E	E	E	E
			Long term water absorption by total immersion	% per volume	EN 12088	≤3	≤3	-	3	-	-
			Short term water absorption by total immersion	% per volume	EN 12087		≤0,7	≤1,5	≤0,7	≤0,7	≤1,5
			Water vapor diffusion resistance factor	-	EN 12086	≥100	≥120	≥80	≥120	≥120	≥50
			Capillary vessels	-		None	None	None	None	None	None
			Dimension stability	-	EN 1604	≤5%	≤5%	≤5%	≤5%	≤5%	≤5%
			Service temperature	°C	-	-50/+ 70	-50/+ 70	-50/+ 70	-50/+ 70	-50/+ 70	-50/+ 70

\* Thermal conductivity after artificial aging of material after ±25 years of exposure.

## Instructions of Good Storage & Use

KEBE XPS is practically unaffected by rain, snow, and frost. Therefore, outdoors storage without protection for a period of several weeks is safe. However, extensive exposure to sunlight can cause deterioration. For this reason it is recommended to store in piles or under cover. Although KEBE XPS products contain flame retardant. It is not allowed to store near flammable materials. Maximum service temperature of 75 °C.



perfect thermal insulation for ever!

## >>> Extruded polystyrene

KEBE xps is an extruded polystyrene foam insulation material with closed cells, produced from thermoplastic polystyrene, which with a polymerization process and continuous extrusion takes the form of plates. 88% to 93% of its weight consists of crystalline polystyrene, polymer of carbon and hydrogen. It also contains in a smaller percentage additives such as improvement admixtures, pigments and flame retardants. During the production process are added up to 8% of its weight, propellants totally environment friendly. From the extrusion process a homogeneous structural material is produced with closed polyhedral cells of foam structure, with a diameter of 0,05 to 0,5 mm. The cell walls have a thickness of only 0,1 mm. It is striking that an extruded polystyrene plate, composed by 3% of its volume from the walls of the cells and 97% from the spaces of the cells with inert gas.

In the production process the raw material mix is fluidized and homogenized under controlled conditions of high temperatures and pressures at in special extruders. The warm and viscous plastic mixture takes the form of continuous foam slab that is led to the downstream line for the surface and the edge formation.

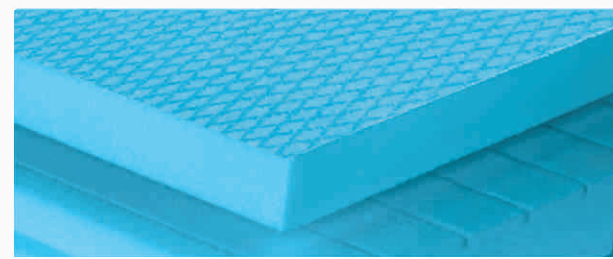
In this way uniform and stable boards are produced, consistently, with high quality and adapted to the needs of each application.



## >>> KEBE xps

The tough extruded polystyrene foam plates KEBE XPS with characteristic blue color, are modern technology thermal insulating materials and they are the latest development in the field of thermal insulation. They are produced in the facilities of RAVATHERM HELLAS SA in Korino, Pieria in accordance with the international standards (ISO 9001) and under continuous quality control.

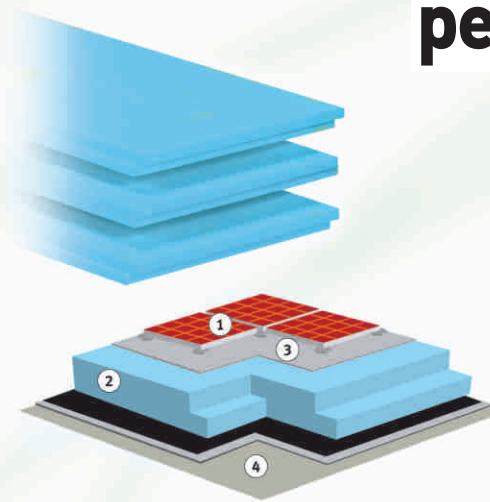
The extruded polystyrene boards KEBE XPS are characterized by high and constant efficiency thermal properties, low coefficient of thermal conductivity  $\lambda$ , zero moisture absorption, high compressive strength and they behave as self-extinguishing materials. They present uniform bulk density, dimensional stability and excellent cooperation with building materials (cement, gypsum, lime, anhydrite, sand), while the specific shaved or gofrated plates without the smooth surface offers excellent adhesion to concrete and coatings. It is perfectly safe to use and very easy to install them.



### Floor FL Extruded Polystyrene XPS - EN 13164 - T1 - DS (TH) - 400

KEBE xps (FL) Floor boards, can be applied to roof or floor insulation with high mechanical loads.

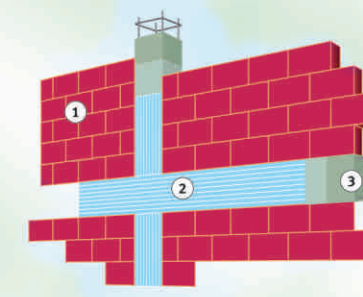
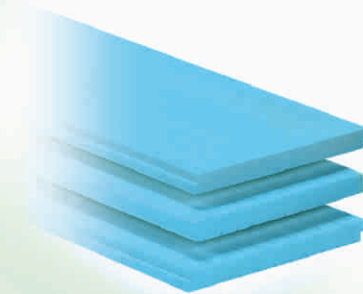
1. Tiles
2. KEBE XPS
3. Waterproofing
4. Geotextile



### Shape BT Extruded Polystyrene XPS - EN 13164 - T2 - DS (TH)

KEBE xps (BT) Shape boards, can be applied for the thermal insulation of perimeter concrete elements (walls, beams, columns and roofs). Also, during the tile roof thermal insulation in sloped concrete slab (applicable to the formwork). Finally, it is used in thermal insulation system for external thermal insulation in buildings.

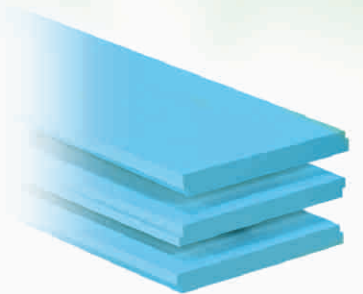
1. Exterior masonry
2. KEBE XPS
3. Beam



### Wall WL Extruded Polystyrene XPS - EN 13164 - T1 - DS (TH)

KEBE xps (WL) Wall boards, can be applied to the core of masonry, internally on thermal insulation facades (marble decorations - aluminum panels).

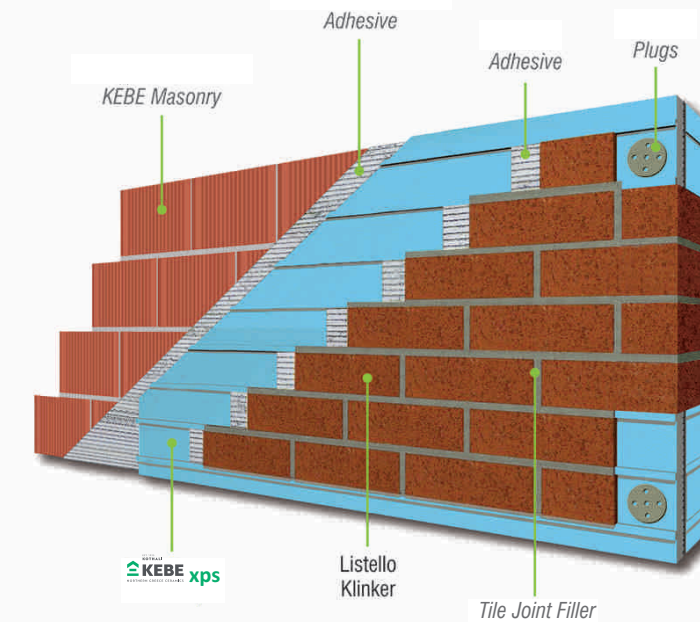
1. Exterior masonry
2. KEBE XPS
3. Internal masonry
4. Mortar



## perfect thermal insulation for ever!

### KEBEKLINKER® xps

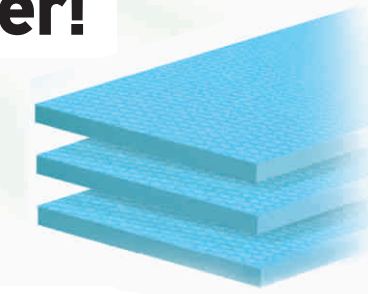
System of external thermal insulation with XPS with grouting guides and final external surface with ceramic listello klinker. It offers excellent thermal insulation, ease and speed in placement, zero maintenance requirement and high aesthetics.



### Gofre GF Extruded Polystyrene XPS - EN 13164 - T2 - DS (TH)

KEBE xps (GF) Gofre boards, can be applied to thermal insulation of existing structures and exterior renovations, while allowing the breathing of the building. This is achieved by the specific composition and structure of the cells, in combination with the shaved surface.

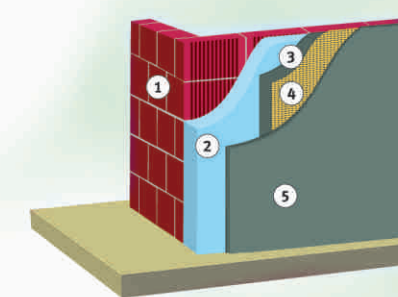
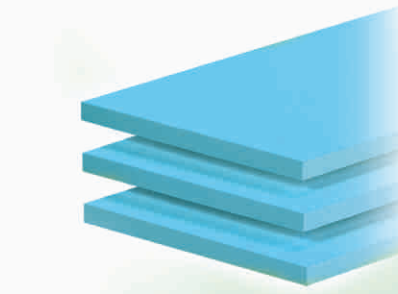
1. Internal masonry
2. KEBE XPS
3. First layer of mortar
4. Fiberglass mesh mortar
5. Second layer of mortar



### Wall Respiring Surface WRS Extruded Polystyrene XPS - EN 13164 - T2 - DS (TH)

KEBE xps (WRS) Wall Respiring Surface boards, can be applied to thermal insulation of existing structures and exterior renovations, while allowing the breathing of the building. This is achieved by the specific composition and structure of the cells, in combination with the shaved surface.

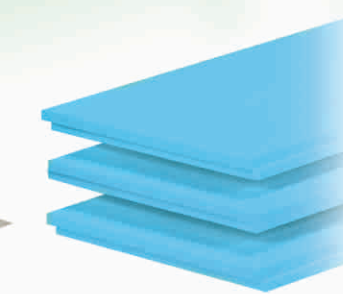
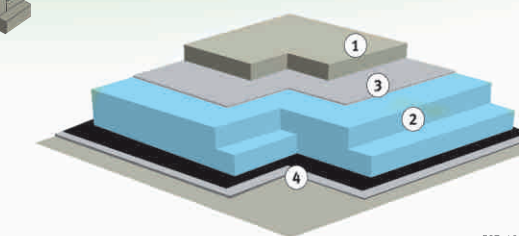
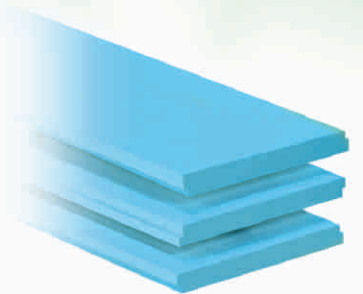
1. Internal masonry
2. KEBE XPS
3. First layer of mortar
4. Fiberglass mesh mortar
5. Second layer of mortar



### Roof RF Extruded Polystyrene XPS - EN 13164 - T1 - DS (TH) - 300

KEBE xps (RF) Roof boards, can be applied to thermal insulation of roofs, floors and industrial floors where high mechanical strength is required.

1. Gross Concrete
2. KEBE XPS
3. Separator layer
4. Protective layer



For even greater thermal insulation...

