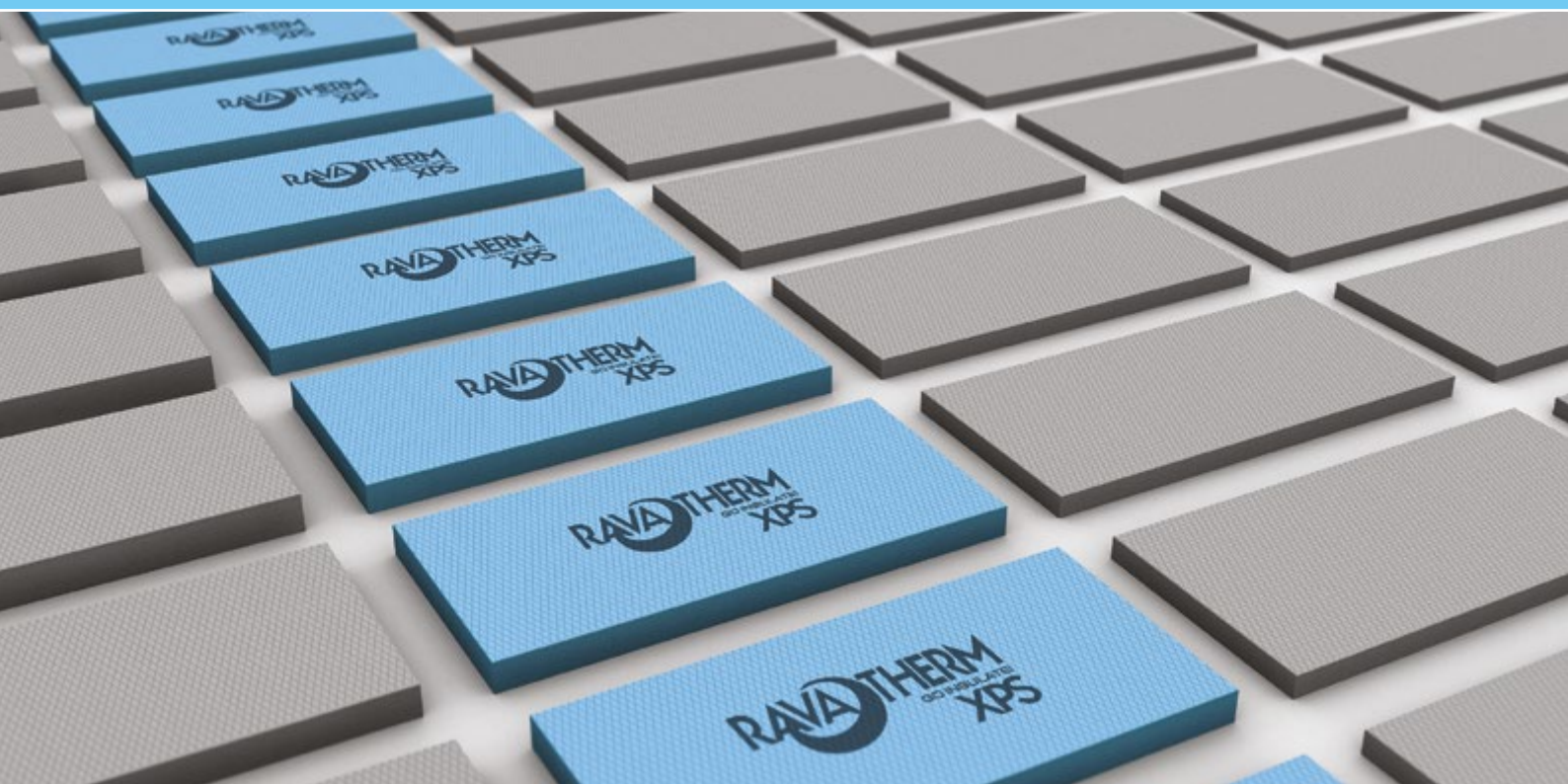


RAVA THERM™

GO INSULATE!

XPS



Product Overview

RAVATHERM XPS thermal insulation is a closed cell polystyrene foam produced using the latest technology. The “blue foam” is made exclusively from quality materials, significantly reduces heat loss from buildings.

The unique material structure guarantees effective thermal insulation. Due to its closed “crystal cell structure”, **RAVATHERM XPS** is

- Excellent long-term thermal insulation
- Water-tight
- Frost-resisting
- High load bearing capacity
- Form & dimension stability
- Rot-proof
- Durable

Application of **RAVATHERM XPS** thermal insulation benefits all users:

From an environmental protection point of view it contributes reducing CO² emissions due to its continuous energy-savings, and because no harmful emissions occur during its production.

The investor or operator can count on long life, low operating/maintenance costs, operational reliability and quick return on investment via energy saving.

The constructor is able to work with high quality, simple-to-install building material, therefore saving time, money and calculating a shorter completion time.

A **RAVATHERM XPS** products were developed in accordance with and manufactured according to EN 13164 product standards and requirements.

The **RAVATHERM XPS** product family:

- **RAVATHERM XPS 300 WB**
- **RAVATHERM XPS 300 SL**
- **RAVATHERM XPS 300 STG**
- **RAVATHERM XPS 500 SL**
- **RAVATHERM XPS 700 SL**



Applications



Flat roofs

RAVATHERM™ XPS 300 SL, RAVATHERM XPS 500 SL, RAVATHERM XPS 700 SL are excellent thermal insulation for

- INVERTED ROOF
- GREEN ROOF
- TERRACE ROOF
- PARKING ROOF
- DUO ROOF
- REFURBISHMENT – PLUS ROOF

Inverted roof

The thermal insulation of flat roofs is a particularly important issue both in winter chills and summer heat. Due to its numerous advantages for flat roofing one of the best solution is the inverted roof construction. The closed cell structure design of **RAVATHERM XPS** thermal insulation is perfect for inverted flat roofs.

Reliability and long lifetime

The major evidence for long-term reliability and durability of insulated waterproofing, i.e. the inverted flat roof, are the tens of millions of square metres that have been built, and are still operating, in some places for 35-40 years, without renovation. **RAVATHERM XPS** can multiply the life of built-in waterproofing on a flat roof, postpone the necessary renovation period, increase the operating safety of the building and provide significant long-term sustainability benefits for the owner or facility manager.

Safety during construction

The advantages of inverted roof structure can be utilized even during construction. The built-in insulation provides thermal protection for not only the building structure, but for the waterproofing, which ensures protection against any mechanical damage which may occur during building and installation.

Building physical advantages

A further advantage of the inverted roof structure – except for extreme indoor climatic conditions – is that there is no condensation risk at all. Insulation with high vapour diffusion resistance is positioned on the warm side of the structure, so condensation does not occur in the thermal insulation. Under normal circumstances, an inverted roof can be designed and applied without calculating for condensation risk.

Advantages:

- Waterproofing layer protected against heat and UV rays
- Waterproofing layer mechanically protected
- Building physical advantages
- Can be applied in all weather conditions
- User-friendly
- Easy troubleshooting and repair



Applications



Wall / Thermal-bridges / Socles

RAVATHERM™ XPS 300 WB is an excellent thermal insulation for

- SOCLES PLASTERED OR COVERED WITH BRICK, STONE TILES
- REINFORCED CONCRETE SURFACES
- AVOID THERMAL BRIDGES
- CAVITY / CORE INSULATED WALLS

The application of **RAVATHERM XPS 300 WB** thermal insulation is particularly recommended for socles, reinforced concrete structures, walls with core insulation, and with stone-brick outside covering.

The rough surface of **RAVATHERM XPS 300 WB** is providing excellent adhesion to concrete, and to plaster. The product has sufficient compressive strength to withstand long-term mechanical stress. Because of its closed cell structure, it does not absorb water, therefore it is frost-proof and it has excellent long term thermal insulation capability.

Insulation of socle and other thermal bridges

The façade of the building should be built to establish with almost the same U-value, which will require extra thermal insulation at thermal bridges. The thermal insulation of reinforced concrete can be made after pouring concrete, but **RAVATHERM XPS 300 WB** can be installed already during construction. The product does not absorb moisture, so it does not influence the final strength of the concrete. The advantages of pre-placed thermal insulation are

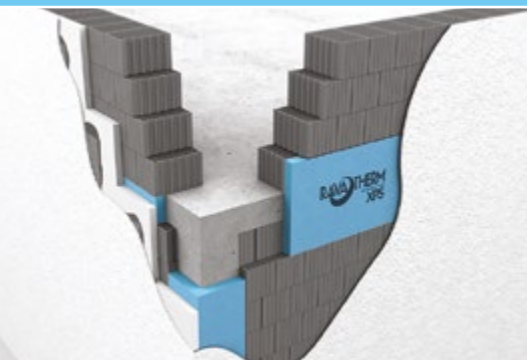
- the thermal insulation does not have to be fixed at a later date
- it protects the fresh concrete from drying or burning.

Thermal insulation behind thin and non-vapour permeable covering

Due to the high vapour diffusion resistance of **RAVATHERM XPS 300 WB** closed cell polystyrene foam - used with frost-proof flexible adhesive - is suitable for thin, non-vapour-permeable (laminated stone, brick, ceramic etc.) wall finishes. Compared to other normal thermal insulation materials there is no condensation risk in the structure therefore in case of standard interior climatic conditions there is no need to calculate the condensation risk. **RAVATHERM XPS 300 WB** can be applied for thermal insulation of structures with core insulation too.

Advantages:

- Rough, well adhering surface
- Persistent high insulating capability
- High strength, flexibility
- Frost-resisting, water-tight
- High vapour diffusion resistance
- User-friendly



Applications



Perimeter / Floor

RAVATHERM™ XPS XPS 300 SL, RAVATHERM XPS 500 SL, RAVATHERM XPS 700 SL are excellent thermal insulation for

- PERIMETER CELLAR WALLS
- PERIMETER WALLS IN SUBSOIL WATER
- BASEMENT, BASE SLABS
- FROST PROTECTION
- INDUSTRIAL FLOOR
- STANDARD BUILDING FLOOR
- COLD STORAGE FLOOR
- SWIMMING POOL

Thermal insulation of perimeters

RAVATHERM XPS 300 SL is an indispensable accessory for underground thermal insulation:

- closed-cell structure
- excellent thermal insulation capability
- water resistance
- high compressive strength

The excellent properties allow to install as the outermost layer of wall structure, even in direct contact with the soil. Apart of numerous advantages, the heat storing capacity of the structure will be preserved behind the outside thermal insulation. **RAVATHERM XPS 300 SL** is glued to waterproofing as its, thermal protection and protection from mechanical damages. **RAVATHERM XPS 300 SL** can be applied not only in soil moisture but in ground water too. In this case thermal insulation slabs have to be fixed on the water insulation by bonding on the whole surface.

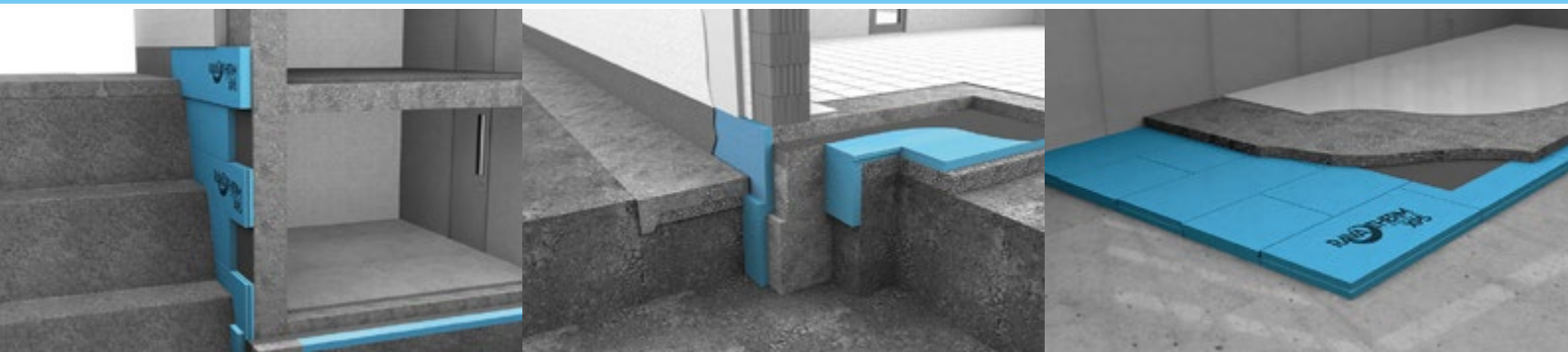
Thermal insulation of floors, ground-bearing floors

Depending on loads there are three high compressive strength products: **RAVATHERM XPS 300/500/700 SL** as excellent solution for floor insulation. **RAVATHERM XPS** products can be applied not only above the reinforced concrete floor slab, but even underneath, laid directly onto compressed gravel-ballast, when you can directly fix the reinforcement on top of the thermal insulation, or prepare the insulation of the building against soil moisture and humidity. Such a structural solution allows to save with all additional costs of one blind concrete layer.

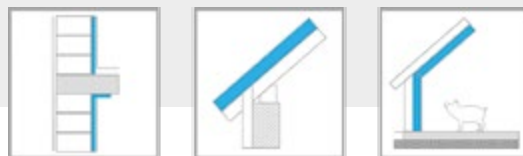
RAVATHERM XPS products can be laid on traditional floors, as well as ground-bearing floors with multilayer installation.

Advantages:

- “Built-in” insulation-protection
- High compressive strength
- Consistent high insulation-capability
- Frost-resisting, water-tight
- Rot-proof, age-resistant
- Simple structural design / userfriendly



Applications



Pitched roof

RAVATHERM™ XPS 300 STG is excellent thermal insulation for

- OUTSIDE INSULATION ABOVE RAFTERS
- OUTSIDE INSULATION ON REINFORCED CONCRETE
- COMPLEMENTARY INSULATION ABOVE RAFTERS
- RENOVATION - ADDITIONAL INSULATION BELOW RAFTERS

RAVATHERM XPS 300 STG provides several alternative solutions for new-buildings or renovated attics. This thermal bridge free solution is an easy alternative of this complicated built-up roof structure hiding several sub-tasks and opportunities for errors, while it provides high thermal protection for the loft and other related constructional components, even during building time. In case of future loft extensions, or renovation of attic the **RAVATHERM XPS 300 STG** is an excellent technical solution from the inside. The dimensions of **RAVATHERM XPS 300 STG** are 60x240 cm (1,44 m²), with tongue & groove edges to avoid thermal bridge free and for quick assembly.

Advantages:

- “Thermal bridge-free” assembly
- Consist high insulation-capability
- Big slab size & tongue and groove slabs
- Shrink-proof, age-resistant
- High compressive strength
- User-friendly

Other applications

RAVATHERM XPS insulations are excellent thermal insulation for

- INSIDE WALLS AT
 - RENOVATION
 - VISIBLE CONCRETE WALLS
 - HISTORIC BUILDINGS
- INSIDE CEILING INSULATION OF
 - SMALL INDUSTRIAL BUILDINGS
 - AGRICULTURAL BUILDINGS
- OTHER, SPECIAL APPLICATIONS*

Inside insulation

Due to its high vapour diffusion resistance and compressive strength **RAVATHERM XPS 300 WB** can be used for inside thermal insulation. (preferred thickness: 3-5 cm)*

Advantages:

- Easy to install
- Safe solution from building physics point of

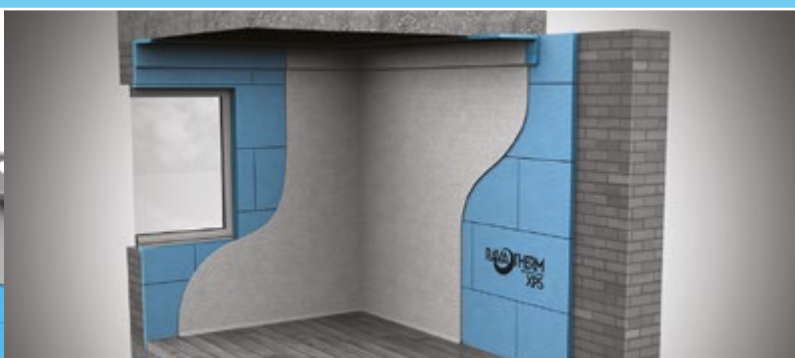
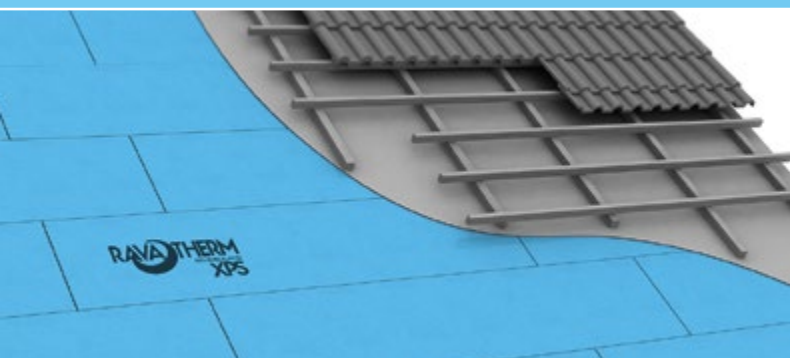
Inside ceiling insulation of industrial-agricultural buildings

RAVATHERM XPS 300 STG is applicable for thermal insulation of agricultural livestock buildings, grain storage units and other industrial buildings– generally single storey buildings.*

Advantages:

- Easy to apply
- Quick installation

* for further information get in contact with our sales representative

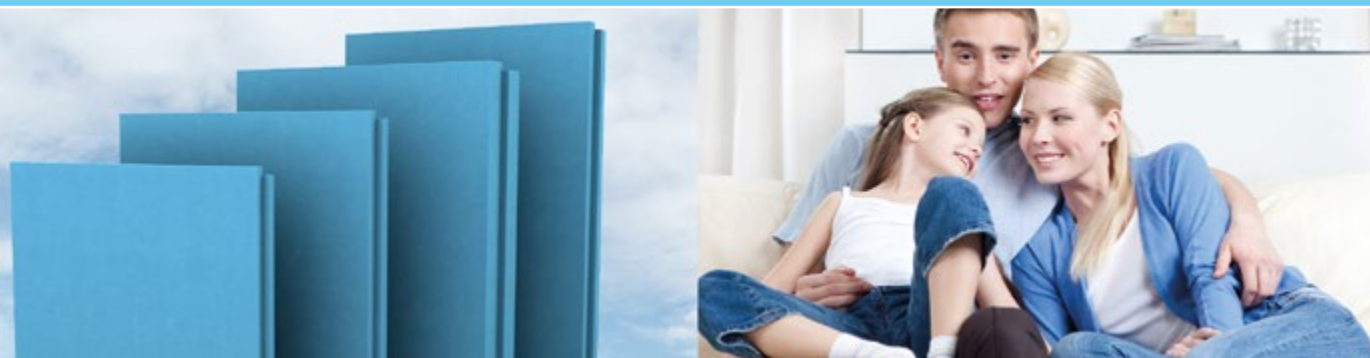


Applications / Products

				RAVATHERM XPS 300WB	RAVATHERM XPS 300SL	RAVATHERM XPS 300STG	RAVATHERM XPS 500SL	RAVATHERM XPS 700SL
Application field								
Roof	Inverted roof	with gravel			●		○	
		roof terrace			●		●	○
		parking roof			○		●	●
		green roof			●		●	○
		duo roof			●		○	
		refurbishment - plus roof			●		○	
Wall	Reinforced concrete surfaces		●					
		Socles - plastered or covered with brick, stone tiles	●					
		Avoiding thermal bridges	●					
		Cavity/core insulated walls	●					
		Perimeter application on the cellar wall		○		○		
Floor	Standard building floor			●		○		
		Industrial floor			○		●	●
		Cold storage floor			○		●	●
		Basement, base slabs			○		●	●
Pitched roof	Outside insulation above rafters					●		
		Outside insulation on reinforced concrete			○		●	
		Complementary insulation above rafters					●	
		Refurbishment - additional insulation below rafters			○		●	
Inside	Inside wall insulation		●					
		agricultural building					●	
	Inside ceiling insulation							
industrial buildings						●		
Technical parameters								
Board size	Properties	Standard	Unit					
	thickness		(mm)	20-200	30-200	40-100	40-120*	40-100
	width		(mm)	600	600	600	600	600
	length		(mm)	1250	1250	2400	1250	1250
	λ Value		(W/mK)	20**60 mm λ ≤ 0,033 80-200 mm λ ≤ 0,035	30-60 mm λ ≤ 0,033 80-200 mm λ ≤ 0,035	40-60 mm λ ≤ 0,033 80-100 mm λ ≤ 0,035	40-60 mm λ ≤ 0,033 80-120 mm λ ≤ 0,035	40-60 mm λ ≤ 0,033 80-100 mm λ ≤ 0,035
Compressive strength (CS 10/Y)	EN 826	(kPa)	300	300	300	500	700	
Water absorption								
by diffusion	EN 12088	(vol%)	-				WD(V) 3	
by immersion	EN12087	(vol%)	d ≤ 50 mm WL(T) 1,5 d > 50 mm WL(T) 0,7				WL(T) 0,7	
freeze-thaw	EN12091	(vol%)	-				FTCD1	
Capilarity								
							0	
Dimensional stability 48 to 23 °C / 90% RH	EN 1604	(vol%)				DS (70,90)		
	EN 1605	(vol%)				DLT(2)5		
Reaction to fire	EN 13501-1					E		

*higher thicknesses available upon request
**20mm product with planed surface

This publication has been prepared based on available information according to our best knowledge. However the producer reserves the right to change the specifications, and states that he does not assume any responsibility for the recommendation herein. During the planning and installation all standards of directive laws and regulations and professional guidelines should be observed. (incl.national fire protection regulations).





www.ravatherm.com

