



Insulation for a better tomorrow

URSA XPS



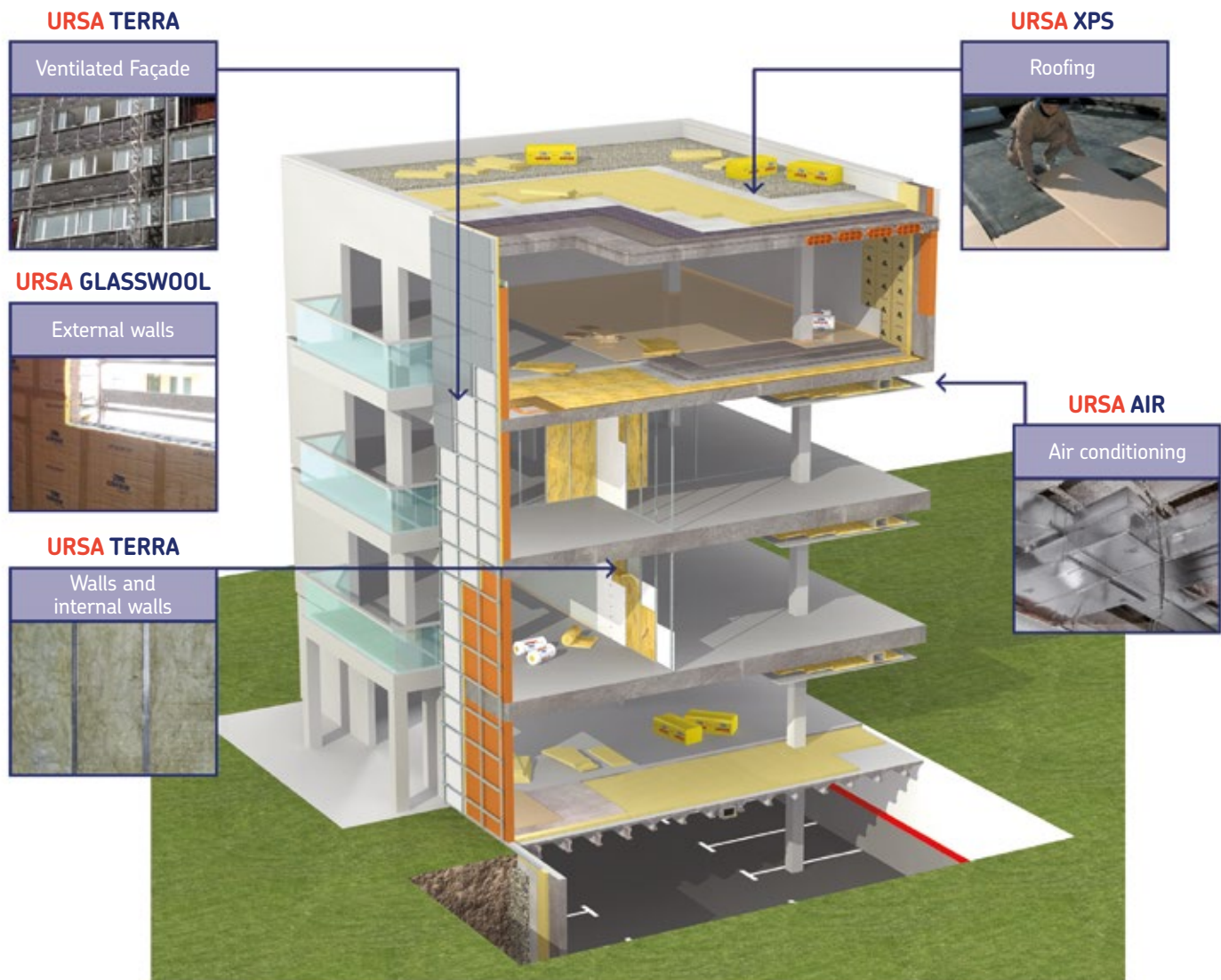
Extruded polystyrene for thermal insulation of buildings

Extruded polystyrene **URSA XPS** is an excellent thermal insulator that offers the following advantages:

- Its closed cellular structure means very low thermal conductivity and high thermal insulation levels.
- URSA XPS has excellent mechanical properties, with a resistance to compression of 300 kPa (up to 500 kPa in case of some products).
- Zero water absorption makes URSA XPS a superior choice for roof insulation – flat or pitched.

- Headquarters
- Branch
- Production site mineral wool
- Production site extruded polystyrene
- ▲ Distributors





URSA

URSA is a leading European insulation provider with the headquarters in the heart of Madrid.

With approximately 500 Million Euros turnover, URSA is one of the major insulation players in Europe, focused on glass mineral wool and extruded polystyrene (XPS) as solutions for insulating residential and non-residential buildings, both new and being renovated.

With 13 production sites in 8 countries and a commercial presence in around 50 markets on all continents. URSA employs around 2.000 people in countries such as Germany, France, Russia, Poland, Slovenia, Austria, Czech Republic, Italy, Spain, Belgium, UK, etc.

60 years of insulation expertise

URSA's history dates back to 1949, when POLIGLAS began producing insulation materials in Spain. In 1988 POLIGLAS was acquired by Uralita. The German firm Pfeiderer AG also entered the insulation business in 1991.

The lives of these two companies run parallel. POLIGLAS growing predominantly in Western Europe through the construction of new factories while Pfeiderer grew business

particularly in Eastern Europe. In 2002, Pfeiderer's insulation division and POLIGLAS merged: URSA was officially born in 2004 and since then we have not stopped expanding within Europe and beyond, launching innovative and award winning insulation products.

Since our beginning we have been entirely dedicated to the production and sales of building insulation materials that reduce energy consumption and CO₂ emissions while improving acoustic and thermal comfort.




Over the last decade we have engaged with sustainability on a different level and with a much higher intensity, making sure we are a partner to rely on in the long run. This has involved looking hard at our performance in the different areas of sustainability – social, economic and environmental.

Since 2006 we have implemented an action plan to reduce the level of accidents that has yielded very positive and promising results. We have improved the efficiency of our factories and reduced energy use and CO₂ emissions. Over the last decade we have significantly improved our products, reaching very low levels of thermal conductivity and higher thicknesses and enabling our customers to save more energy in their homes and offices.

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Edges and typology

THERMAL CONDUCTIVITY		MECHANICAL PROPERTIES			FINISHING / MECHANING		
N	HR	III	V	W	I	L	E
0,034 W/m·K	0,029 W/m·K	300 kPa	500 kPa	250 kPa			

Example: URSA XPS N III L

URSA XPS, the advantages

Because of its nature, technical characteristics and performance, extruded polystyrene URSA XPS is the most technologically advanced answer in the field of thermal insulation, as it offers noticeable benefits to the constructive elements in which it is installed.



Quality products which ensure the best results

Both for the floors, inverted roofs and under tile roof insulation, URSA has the appropriate extruded polystyrene rigid foam panels with specific characteristics suitable for each application.

As a result of the 100% closed cells structure, URSA XPS panels have a long list of advantages. Those advantages are adding up until offering as a result a product which meets the greater demands:

- Very good heat insulation
- Very high resistance to moisture penetration
- Very low vapor permeability
- Very high resistance to freeze thaw cycles
- Very high compressive strength
- Very easy to use and install
- Proven long term performance
- Resistant to mold and corrosion

URSA XPS, thermal comfort

URSA XPS offers a top performance with regard to thermal insulation. Furthermore, the material maintains this characteristic under extreme conditions of compression, humidity and temperature

This will reduce HVAC needs in any season, getting:

- Energy savings
- Economical savings
- Thermal comfort
- Contribution to the environment protection
- Reduction of air pollutants
- Maximum use of available floor space

URSA XPS, mechanical resistance

The unique production process of extruded polystyrene URSA XPS provides a high mechanical performance to the product, allowing the panels to withstand high compressive loads and minimize the flow of the material in the case of permanent loads. This makes the extruded polystyrene URSA XPS the indispensable product in the thermal insulation of:

- Heavy flat roofs
- Floor insulation under pavement
- Industrial floor insulation or cold storage

Compressive strength and compressive creep are important building material characteristics. They indicate the limits of the material for short and long term load:

Compressive strength (also compressive stress) indicates the capacity of XPS to withstand short term load pressure at 10% deformation. URSA XPS has a compressive strength enabling it to easily absorb several tons/m² downward pressure.

Among all common insulation materials, XPS presents the highest compressive strength.

Moreover, XPS has an elastic behavior at uneven or non-homogenous grounds. It has no brittle fracture tendencies. Local loadings are therefore absorbed via local deformations.

URSA XPS, water resistance

Part of a building may be subject to moisture through precipitation, absorption of ground moisture or leakage. Furthermore, during the time of building, the construction may also be subject to great amounts of water, known as building moisture.

The lower the absorption of moisture, the less the thermal insulation performance is degraded XPS has a 100% closed cells structure of millions of cells that trap the air inside, thereby impeding thermal transmission and water introduction.

The extruded polystyrene URSA XPS presents practically zero water absorption, either by dipping or by diffusion. For certain applications, it's vital to choose a moisture-resistant insulation material, so the products range XPS URSA is particularly suitable for:

- Pitched roof insulation
- Construction of false ceilings for agribusiness that can be washable

URSA XPS is resistant to temperature and strain

During its time of service, the materials can be exposed to various freezing and thawing cycles. This has an impact on the performance depending on the material in terms of reduction in compression strength and an increase of water absorption.

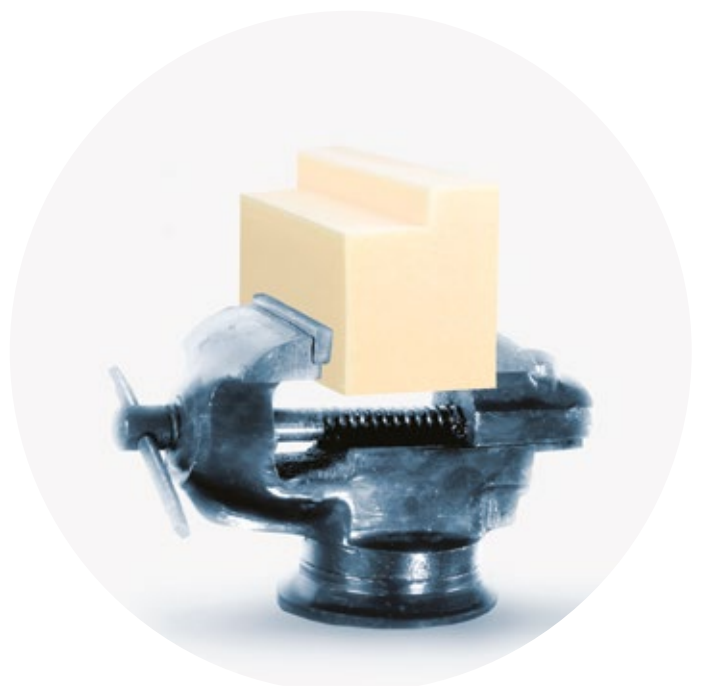
Freeze/thaw (FT): Describes the durability of XPS under extreme weather conditions. Freeze/thaw is the freezing of a material followed by thawing (water to ice and back to water).

URSA XPS reaches level 2 (FT2) which means a reduction in compression strength < 10% and an increase of water absorption < 1% after 300 freeze/thaw cycles.

URSA XPS is temperature resistant and form retentive. It will function within temperatures stretching from -50°C to +75°C.

Summary of properties of XPS

- URSA XPS offers a top performance with regard to thermal insulation. Furthermore, the material maintains this characteristic under extreme conditions of compression, humidity and temperature.
- Among all common insulation materials, XPS presents the highest compressive strength.
- The closed-cell structure and lack of voids in XPS help the foam to resist moisture penetration much better than all other types of insulation materials.
- XPS offers a better performance than EPS, EPS and PUR in terms of freeze/thaw behavior.



Benefits on its applications

Due to its thermal performance combined with its superior water and moisture behavior and its mechanical properties, XPS is the best option when we are talking about flat roofs.

On inverted roofs, XPS offers many advantages such as excellent thermal and mechanical protection of the waterproofing membrane, improving its durability.

- Thermal insulation reduces the day-night thermal oscillation, which leads to reduction of fatigue to which the materials are subjected due to expansion and contraction, especially waterproofing.
- Dry insulation placed above the impermeable sheet provides mechanical protection. In the case of a traditional roof, using mortars or aggregates above the waterproofing sheet can cause its puncture.

On top of that, we will avoid the risk of condensation. The waterproofing membrane is placed under the insulator, therefore on the warm side of the enclosure will act as a vapor barrier.



URSA XPS is easy to install

Another great advantage is that URSA XPS weighs little (is relatively a light product) , which greatly facilitates transport and, above all, its assembly. Panels not only can be easily cut, but can also be cut to specific uses small pieces, thus avoiding waste to the maximum.

Highly durable insulation

For technically demanding applications like perimeter or flat roofs, insulation materials have to handle high pressure loads comfortably and be resistant to moisture, water and salty or acidic soils.

In situations like these, extruded polystyrene rigid foam is the best choice. It handles easily all weather conditions and is known to be extremely durable.

Using URSA XPS also helps to protect the environment in two ways. On one hand, it is made using naturally occurring gases and on the other hand, installing URSA XPS helps guarantee a low demand for heating in buildings, helping us towards a more sustainable future.

URSA XPS NIII

Extruded polystyrene boards, of 300 kPa of compression strength, shiplap edged, and thermal conductivity of 0,034 W/mK.



Property	Value	Norm
Designation code	Thicknesses ≤ 40 : T1-CS(10/Y)300-DLT(2)5-DS(TH)-WL(T)0,7- WD(V)3-FT2 Thicknesses ≥ 50 : T1-CS(10/Y)300-DLT(2)5-DS(-TH)-WL(T)0,7- C(2/1,5/50)125-WD(V)3-FT2	
Thermal conductivity ($\lambda_{90/90}$)	0,034 W/m·K Thicknesses ≥ 70 : 0,036 W/m·K	EN 12667 EN 12939
Reaction to fire	E	EN 13501-1
Compression strength	300 kPa	EN 826
Dimensional stability	$\leq 5\%$	EN 1604
Deformation by charge and temperature	$\leq 5\%$	EN 1605
Compression fluency from 1,5% to 2% in 50 years	175 kPa	EN 826
Water absorption by immersion	$\leq 0,7\%$	EN 12087
Freeze - unfreeze resistance	FT2	EN 12088

Suggested application

Thermal insulation of flat inverted roofs and floors.



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Código	Espesor	Ancho	Alto	Facing	Resistencia Térmica R (SI)	Resistencia Térmica R (US)	Unidades/paquete	Con-tenido paquete	Estimated Packs/ Container	Estimated Load/ Container
	mm	mm	mm		m ² ·K/W	ft ² ·°F·hr/Btu		m ²		m ²
2117557	30	600	1.250	I	0,88	5,0	14	10,5	212	2.226
2117559	50	600	1.250	I	1,47	8,3	8	6,0	212	1.272
2117606	80	600	1.250	I	2,22	12,6	5	3,8	212	795
2117598	100	600	1.250	I	2,78	15,7	4	3,0	212	636
2117554	30	600	1.250	L	0,88	5,0	14	10,5	212	2.226
2117556	50	600	1.250	L	1,47	8,3	8	6,0	212	1.272
2117614	80	600	1.250	L	2,22	12,6	5	3,8	212	795
2117612	100	600	1.250	L	2,78	15,7	4	3,0	212	636

For any other requirements in thickness or board dimensions, please, contact the corresponding sales representative.

URSA XPS HR

Extruded polystyrene boards, of 300 kPa of compression strength, shiplap edged, and thermal conductivity of 0,029 W/mK.



Designation code	XPS - EN13.164 - T1 - CS(10/Y)300 - DLT(2)5 - DS(TH) - WL(T)0,7 - CC(2/1,5/50)125 - WD(V)3 - FTw2
Thermal conductivity ($\lambda_{90/90}$)	0,029 W/m·K
Reaction to fire	E
Compression strength	< 5%
Dimensional stability	< 5%
Compression fluency from 1,5% to 2% in 50 years	125 kPa
Water absorption by immersion	≤0,7%
Freeze - unfreeze resistance	FT2

Suggested applications

Thermal insulation of flat inverted roofs.

Other possible applications

Thermal insulation of floors.



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Code	Thickness	Width	Length	Edge	Thermal resistance R (SI)	Thermal resistance R (US)	Units/ pack	Content pack	Estimated Packs/ Container	Estimated Load/ Container
	mm	mm	mm		m ² ·K/W	ft ² ·°F·hr/Btu		m ²		m ²
2108605	30	600	1.250	E	1,03	5,9	14	10,5	212	2.226
2108708	50	600	1.250	E	1,72	9,8	8	6,0	212	1.272
2108499	30	600	1.250	L	1,03	5,9	14	10,5	212	2.226
2139661	50	600	1.250	L	1,72	9,8	8	6,0	212	1.272
2117636	80	600	1.250	L	2,76	15,6	5	3,8	212	795
2117637	100	600	1.250	L	3,45	19,5	4	3,0	212	636

For any other requirements in thickness or board dimensions, please, contact the corresponding sales representative.

URSA XPS NW I

Extruded polystyrene boards, of 250 kPa of compression strength, tongue and groove edged, and thermal conductivity of 0,034 W/mK.



Designation code	XPS - EN13.164 - T1 - CS(10/Y)250 - DLT(2)5 - DS(TH) - WL(T)0,7 - TR100
Thermal conductivity ($\lambda_{90/90}$)	Thicknesses ≤ 60 mm - 0,034 W/m·K Thicknesses ≤ 60 mm - 0,036 W/m·K
Reaction to fire	E
Compression strength	250 kPa
Dimensional stability	<5%
Compression fluency from 1,5% to 2% in 50 years	<5%
Water absorption by immersion	$\leq 0,7\%$

Suggested applications
Thermal insulation of external walls.



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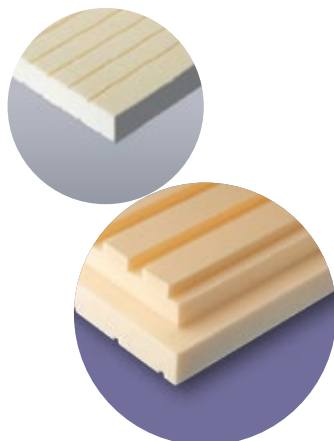


Code	Thickness	Width	Length	Edge	Thermal resistance R (SI)	Thermal resistance R (US)	Units/ pack	Content pack	Estimated Packs/ Container	Estimated Load/ Container
	mm	mm	mm		m ² ·K/W	ft ² ·°F·hr/Btu		m ²		m ²
2108182	30	600	1.250	E	0,88	5,0	14	10,5	212	2.226
2108498	50	600	1.250	E	1,47	8,3	8	6,0	212	1.272
2111613	80	600	1.250	E	2,22	12,6	5	3,8	213	799
2139190	50	600	1.250	I	1,47	8,3	8	6,0	212	1.272

For any other requirements in thickness or board dimensions, please, contact the corresponding sales representative.

URSA XPS CTG-300 / VIB-500

Extruded polystyrene boards for industrial applications of 300-300 kPa, straight cut edge and thermal conductivity of 0,029 W/mK.



Property	Value URSA XPS CTG - 300	Value URSA XPS VIB - 500	Norm
Thickness	20 - 100 mm	25 - 100 mm	EN 823
Compressive stress or compressive strength at 10% deformation	>300 kPa	> 500* kPa	EN 826
Compression modulus	10.000-18.000 kPa	16.000 kPa	EN 826
Thermal conductivity (ID)	0,029 W/(m·K)	0.029 W/(m·K)	EN 12667 EN 12939
Water vapour resistance	1,2 - 3,5 ng / Pa m s	1.2 - 3.5 ng / Pa m s	EN 12086
Water absorption	≤ 1 % Volume	<1 % Volume	EN 12087
Resistencia a la tracción	500 kPa	600 kPa	EN 1607
Tensile modulus	10.000-18.000 kPa	16.000 kPa	EN 1607
Shear strength	300 - 400 kPa	300 - 400 kPa	EN 12090
Shear modulus	4.000 - 5.000 kPa	4.000 - 5.000 kPa	EN 12090
Reaction to fire	E Euroclase	E Euroclase	13501-1
Squareness	< 2 mm	< 2 mm	EN 824
Application temperature	-50 / +75 C°	-50 / +75 C°	
Capillarity	null	null	
Surface	without skin, slotted	planed / grooved	
Dimensions (length x width)	(2000-5000)x(600-1250) mm	(2100-3000)x(600-1196) mm	EN 822
Thickness tolerance	+0.5 / -0.5 mm	+0.5 / -0.5 mm	EN 13164
Width tolerance	+3 / -0 mm	+3 / -0 mm	EN 822
Length tolerance	+10 / -0 mm	+10 / -0 mm	EN 822
Edge profile	straight cut edge	straight cut edge	

(*) 40mm 400KPa

Suggested applications

Cold trucks, chiller tanks and sandwich pannels.

Other possible applications

Thermal insulation of flat inverted roofs.



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Industrial product dimensions upon request.

Specific dimensions to be agreed within the predefined ranges.

Minimum order quantity per specific product dimensions: 1 full container 40' HC.

The technical information provided in this document reflects our current know-how and experience. The scenarios described here do not purport to take account of the specific circumstances of every application and all liability is therefore excluded.

Please do not hesitate to contact us if you require further information:

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Reference objects

RheinauArtOffice – Cologne, Germany

Built in 2008, the RheinauArtOffice has become one of the most modern office buildings in Germany. This unique building houses Microsoft's headquarters in the country that chose the RheinauArtOffice for its open nature and its potential for expansion. It currently holds 300 workers from the American computer company and twelve associated enterprises.

Located next to Cologne harbour on the Rhine, the offices are perfectly communicated with the city centre, the motorway, railway station and the airport.

The architects Rainer Freigeber and Stephan Schutt worked with an innovative architectural concept in which openness and free-flowing spaces were a priority. But they were also responsible for the choice of high quality materials, providing this office space with the most sustainable and energy efficient systems and solutions.

They chose geothermal energy for building air conditioning, doubleglazed windows with external solar protection and URSA materials for the insulation. In particular, **URSA XPS D N-III-L** was installed, an extruded polystyrene panel with a smooth surface, which is used to insulate roofs as it allows workloads to be placed directly on the insulation surface without damaging it.

Insulation systems with this type of panels form a continuous layer without the presence of thermal bridges and, therefore, without the risk of condensation formation. In addition, the XPS's low water absorption factor and resistance to freeze-thaw cycles (an important factor to consider in a country with a climate like Germany) guarantee durability of the insulation. The promoters of this ambitious project also selected **URSA FDP 2/Vs**, a glass mineral wool panel coated on one of its sides by a black glass mesh that acts as a water repellent, making it an ideal insulation for ventilated façades.



Airport Leipzig/Halle, Germany

In March 1986, two Concordes from the airlines Air France and British Airways landed at Leipzig/Halle (Germany), filled with passengers coming to the Leipzig Fair. This airport, also known as Schkeuditz Airport, is located between the cities of Leipzig (Saxony) and Halle (Saxony-Anhalt) and has traffic of almost two million passengers per year. It is, in addition, the headquarters of the operator DHL Aviation, which has meant a large increase in cargo traffic.

Leipzig/Halle airport was modernised when the city was nominated as a candidate to host the Olympic Games of 2012, which were finally awarded to London. All infrastructures were improved, parking, check-in facilities, the two runways and the loading docks. Furthermore, two rooms were built to accommodate the new snow ploughs, whose function is to keep the airport free of snow and ice in winter. To support the weight and pressure of these large machines, the ground of these buildings had to be reinforced; leading project team leaders to choose **URSA XPS D N-III-L**, installing it under the paving and combined with floor heating.

These extruded polystyrene panels offer great resistance and durability. Their use under foundation slabs has received the approval of the Passivhaus standard, widely used in Germany. URSA XPS D N-III-L panels have very low thermal conductivity, a high resistance to compression and an extremely low water absorption capacity owing to their non-porous, closed cell structure. In addition to its use under flooring, this material can be used as external insulation of roofs and terraces, as well as being suitable for the insulation of interior partition walls and ceilings.

More reference objects in www.ursa.com



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