



# ROCKAL FOAM XPS INSULATION BOARDS

[www.rockal.org](http://www.rockal.org)

## ABOUT ROCKAL

**ROCKAL** Is a leading Egyptian producer of building insulation materials:

**ROCKAL** offers reliable and effective insulation products for construction companies, contractors in Egypt, Gulf & Europe.

**ROCKAL** was founded in 2003 and since then has accumulated considerable experience in manufacturing, import and export the insulation building materials and considered as the leader producer and supplier for insulation building materials.

As well as developing and promoting materials and systems that minimize energy-loss in the industrial sector and public utilities.

With experience of more than 20 years in the insulation business by our founders and 15 years of experience as manufacturers and distributors of different insulation materials we have good overview of the market needs and requirements which by years of experience, we managed to deliver with maximum efficiency.

**ROCKAL** is proud to offer up-to-date state of the art manufacturing technologies that support the construction revolution and mega projects all over the world and reflect on

price as well.

**ROCKAL** provides Wide range of insulation materials and reliable solutions that facilitate making a choice that is best for the project in both in price and in quality.

**ROCKAL** materials are used in the construction of houses, plants, HVAC systems, infrastructure and many applications. We are proud of **ROCKAL** products.

Our high-quality insulation materials are produced from plain raw components taking into consideration the environmental impact and practice the latest sustainability measures while producing our products.

We care about our environment, energy efficiency of buildings & cutting down operational and construction costs as well as our consumption of energy in **ROCKAL** plants. We enjoy seeing our production accredited and Complying with European, American and International standards, and introducing **ROCKAL** as a global brand.

## ROCKAL PRODUCTION

**ROCKAL** is planning to invest in new production lines to increase cost efficiency and enhance competitiveness in both local and foreign markets, and making it the most innovative plant in middle east.

Improving customer service is also one of our priority principles. Leadership of **ROCKAL** insulation is focused on the Egyptian and foreign markets to achieve not only the best quality of products we produce, but also high level of technical support. All products developed and supplied by **ROCKAL** meet environmental standards and are safe for humans and the environment.

We are always researching and innovating in our industry to recycle and reuse as much materials and waste as possible.

Our production lines and equipment give us the ability to supply insulation materials for large construction projects and to develop unique products.

Competence of **ROCKAL** employees, technical consultancy from International providers, development of new insulation materials in our R&D division, all of these factors allow **ROCKAL** to approach each client individually and help us to meet every customer's needs.

## RESEARCH & DEVELOPMENT

Al Alamia for insulation has fully equipped scientific research and development center located close to the production site and number of devices to test new materials. Our scientists are focused on the study of performance of building materials, prevention of their aging, increasing the possibilities of application by expanding the operating temperature range, developing additional functions, such as air purification, resistance to moss growth or increasing energy-effectiveness.

Al Alamia for Insulation has invested in the biggest Laboratories in Egypt with continuous improvement strategy and establishing learning center and academy for engineers and chemists to gain

knowledge and experience in XPS insulation boards. **ROCKAL's** facilities are equipped with latest technologies that will offer better quality thermal insulation.

Laboratory on the factory operate on the base of modern equipment, which is used to study the physical and mechanical characteristics of materials in a wide temperature range, determine the structure and composition of raw materials, test the durability of materials.

Research and implementation of advanced technologies allow us to bring new products and many product variations

depending on needs of customer

In cooperation with research and development centers, factories have obtained a number of product certificates issued by many prestigious institutes around the world.



## ROCKAL FOAM XPS EXTRUDED POLYSTYRENE THERMAL INSULATION PANELS

**ROCKAL FOAM XPS** extruded polystyrene panels are manufactured for demanding applications, where other thermal insulation materials fail.

**ROCKAL FOAM XPS** extruded polystyrene panels are produced with various physical characteristics, surface and edge formations to be suitable for different applications. They are the only boards capable of withstanding high levels of humidity and heavy loads.

## ROCKAL FOAM XPS IN A HUMID ENVIRONMENT

Extruded polystyrene solved the problem of thermal insulation in environments with a high humidity index or presence of water. **ROCKAL FOAM XPS** extruded polystyrene boards with their closed-cell structure are excellent for insulation of environments with high humidity (basements, inverted roofs, indoor swimming pools, façades, etc.)



## ROCKAL FOAM XPS UNDER HEAVY LOADS

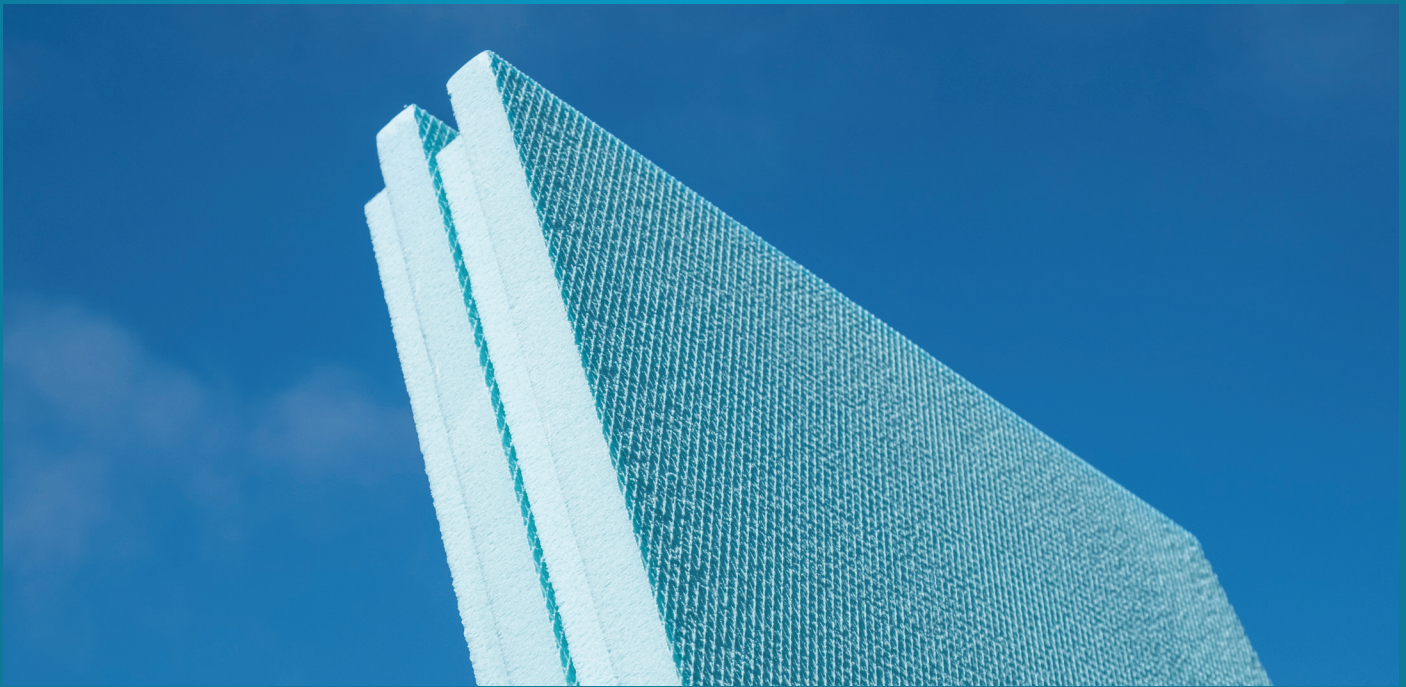
The closed-cell structure of extruded polystyrene boards gives the material a very high compressive strength. It can thus, be used in insulated floors which have to carry heavy permanent loads.

## ROCKAL FOAM XPS WITH PROCESSED SURFACE

Is specially designed for applications combined with coatings (plasters, adhesives, etc.), glue and concrete. The advantages are high vapour permeability, adherence to coatings and concrete, maintenance of low water absorption, high compression and tensile strength.

**ROCKAL FOAM XPS** extruded polystyrene products have obtained European Technical Approval for External Thermal Insulating Composite Systems - ETICS.

# WHY EXTRUDED POLYSTYRENE FOR THERMAL INSULATION



The process of extruding foamed polystyrene results in a material with uniformly small, closed cells, a smooth 'skin' and an unrivalled set of properties which make it the choice of consultants in a wide range of demanding insulation applications.

**The following properties makes Extruded Polystyrene an ideal choice for thermal insulation:**

## MOISTURE RESISTANCE



The superior moisture resistance and very low vapour permeability of extruded polystyrene insulation provides outstanding benefits for most construction and engineering applications

## CHEMICAL RESISTANCE

XPS is resistant to many common chemicals such as: acids, bases, water and water-based paints, alcohol and alcohol-based paints, brine or salt water, cement and mortars, asphalt, etc

## R-VALUE

The ability of an insulation to resist heat flow. The higher the R-value, the greater the insulating power. XPS has excellent long term R-value and proven

## MECHANICAL PROPERTIES

High and uniform compressive strength.

## ENVIRONMENTAL

High and uniform compressive strength.

## TECHNICAL

### Hot Climate:

In hot conditions, the greatest source of heat flow is solar radiation.

The aim is to reduce the flow of heat inside the building.

### Cold Climate:

In cold conditions, the main aim is to reduce heat flow out of the building, to keep living space warm.

## APPLICATION FIELDS

All construction requirements should be taken into account during the application of **ROCKAL FOAM XPS** panels.

**ROCKAL FOAM XPS** panels should be placed on flat and clean surfaces. They can easily be cut using a sharp knife or heated wire.

to avoid the consequent formation of thermal bridges at the joins.

Thermal insulation in the reversed rooftop application should be installed in a single layer.

No naked flames should be used during the installation of **ROCKAL FOAM XPS** extruded polystyrene panels.

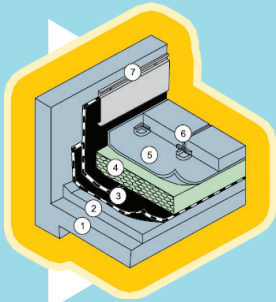
Whenever **ROCKAL FOAM XPS** panels are to be applied over **ROCKAL** waterproofing film on basement walls, stick adhesive tape should also be used. In the event of basements with a high water table, the damp proofing

product (e.g. tar)

**ROCKAL FOAM XPS** is utilized for the thermal insulations of:

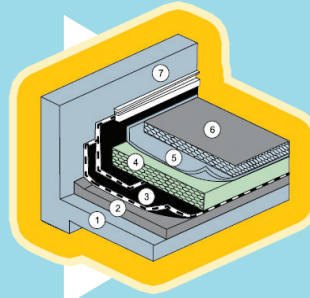
- Flat roofs, either accessible or non-utilizable, as inverted roof construction.
- Roof Gardens.
- Parking decks.
- Exterior walls of buildings insulated on outer surfaces
- Below-grade exterior walls of basements (Perimeter insulation).
- On-grade floors of buildings.
- Cold store Insulations. Should be applied to the entire wall surface.

### 1- ACCESSIBLE FLAT ROOF INSULATION



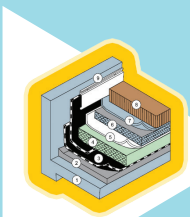
- 1 Reinforced concrete slab
- 2 Sloping screed
- 3 Modified **ROCKAL** waterproofing membrane
- 4 **ROCKAL FOAM XPS** panels Insulation Board
- 5 Geo textile separation Layer
- 6 Paving slabs/ Tiles
- 7 Parapet with Aluminum Skirting

### 2- NON-UTILIZABLE FLAT ROOF INSULATION



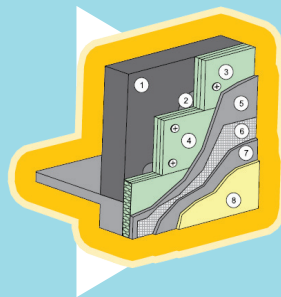
- 1 Reinforced concrete slab
- 2 Sloping screed
- 3 Modified **ROCKAL** waterproofing membrane
- 4 **ROCKAL FOAM XPS** panels Insulation Board
- 5 Geotextile Separation Layer
- 6 Ballast
- 7 Parapet with Aluminum Skirting

### 3- ROOF GARDEN INSULATION



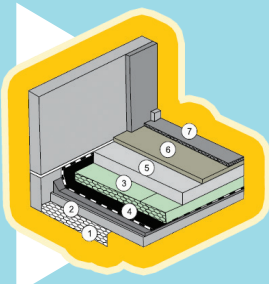
- 1 Reinforced concrete slab
- 2 Sloping screed
- 3 Modified **ROCKAL** waterproofing membrane
- 4 **ROCKAL FOAM XPS** panels Insulation Board
- 5 Geo textile separation Layer
- 6 Ballast
- 7 Geo textile separation Layer
- 8 Soil
- 9 Parapet with Aluminum Skirting

### 4- OUTSIDE INSULATION OF EXTERIOR WALL



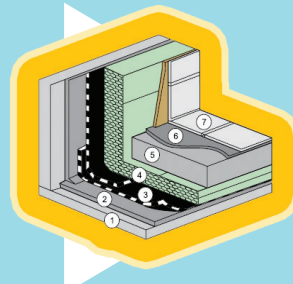
- 1 Exterior Wall
- 2 Fixing Mortar
- 3 Plastic Anchor
- 4 **ROCKAL FOAM XPS** panels Insulation Board
- 5 Undercoat Plaster
- 6 Reinforcement Mesh
- 7 Undercoat Plaster
- 8 Plaster Finish

### 5- FLOOR INSULATION



- 1 Stone fill hardcore
- 2 Leveling Concrete
- 3 **ROCKAL FOAM XPS** Insulation Board
- 4 Modified **ROCKAL** waterproofing membrane
- 5 Concrete Floor
- 6 Leveling Concrete
- 7 Floor Finish

### 6- COLD STORE FLOOR INSULATION



- 1 Reinforced Concrete Floor
- 2 Leveling Concrete
- 3 Modified **ROCKAL** waterproofing membrane
- 4 **ROCKAL FOAM XPS** Insulation Board
- 5 Reinforced Concrete Slab
- 6 Mortar
- 7 Ceramic Tile

# ROCKAL XPS

## ITS DIVIDED ACCORDING ITS SHAPE TO:

### A – NORMAL (N)



Length = 1235 mm - 1250 mm (±3)  
 Width = 600 mm (±3)  
 Thickness = ( 20 ,25 , 30 , 40 , 50 , 60 .....up to 100 ) mm

### B – SHIPLAP (SL)



Length = 1235 mm - 1250 mm (±3)  
 Width = 600 mm (±3)  
 Thickness = (30 , 40 , 50.....up to 100 ) mm

**FLAMMABILITY:** All items can be produced by using Non-flammable gas as blowing agent and Flame Retardant Additives.

## TYPICAL DATA SHEET – ROCKAL XPS FOAM INSULATION BOARDS

NO.	Properties	Test Method	ROCKAL FOAM	ROCKAL FOAM Plus	ROCKAL FOAM Pro
1	الكثافة Density, (Kg/m <sup>3</sup> )	ASTM D 1622	28-31	32-36	36-40
2	الموصلية الحرارية Thermal Conductivity (K), max. (W/m.K)	ASTM C 518	0.031	0.029	0.028
3	اجهاد الضغط عند 10% ترخيم Compressive Strength at 10 % deflection, min. (kPa)	ASTM D 1621 ASTM C 165	150 : 200	200:300	300:450
4	قوة الانحناء Flexural Strength, min. (kPa)	ASTM C203, Method I, Procedure B	250	300	400
5	امتصاص الماء Water Absorption by Submersion, min. (Volume %)	ASTM D 2842	0.3		
6	نفاذية بخار الماء Water Vapor Permeance, max. (Perm/inch)	ASTM C 355 ASTM E 96	1.1		
7	ثبات الأبعاد Dimensional Stability (Change in dimension), max. (%)	ASTM D 2126	2		
8	مؤشر الأوكسجين Oxygen Index, min. (Volume %)	ASTM D 2863	24		

## HANDLING, STORAGE & USAGE CONDITIONS.

Don't load heavy objects on the stacked product.  
 XPS Foam Board should be stored in a cool, dry and well-ventilated place.  
 The shelf life of unopened XPS board is six months, while in the rainy season it is only three months.  
 Keep Fire (source of ignition), heat source, chemical solvent far away from XPS Foam Board.  
 Avoid exposure to sunlight, rain, wind and avoid any other mechanical damage. XPS Foam Board is not resistant to UV, so it can't be exposed in especially not to be exposed to sunlight.

XPS Foam Board should not be left on the site to be exposed to UV -rays prolonged sunlight (more than 1 hour specially on higher than 35°C) as this will result in surface degradation. When stored more than a month, it needs to regularly flip boards to prevent caking.  
 Using reflective light-coloured canvas to cover XPS boards is recommended when the storage time is long.



## ROCKAL XPS IS FOLLOWING THE ASTM C 578.

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