

The logo features a stylized 'O' icon on the left, composed of three parallel white lines that curve to form a partial circle. To the right of this icon, the word 'OZPOR' is written in a bold, white, sans-serif font, with a registered trademark symbol (®) at the top right of the 'R'. Below 'OZPOR', the words 'Stone Wool' are written in a smaller, white, sans-serif font.

OZPOR[®]
Stone Wool

2019



**Thermal
Insulation**



**Sound
Insulation**



**Fire
Insulation**

 **OZPOR**[®]
Stone Wool



For 32 Years

We Take Our Power from Nature,
We Respect Nature.

We are reducing our carbon footprint thanks to green production process.
Ecological sustainability is ensured by insulation and the damage caused to
ecosystem is reduced.

Stone wool is an environmentally friendly material and is obtained by melting
basalt stone which is a 97% inorganic substance.

Özpor Stone wool Provides Gains...

Dear Friend of Nature and ÖZPÖR,

Today, insulation is synonymous with sustainability instead of its original meaning. In addition to leaving a habitable world to our future generations as well as not to change our consumption patterns due to economic and ecologic reasons in short time, we have to take simple but important and effective preventions like insulation.

We celebrate our 32nd year with our industrialist identity in the sector. With each product we produce, we are reducing the carbon footprint of humans on the world.

We are steadily growing with the consumers who prefer us, our colleagues and dear business partners who make ÖZPÖR valuable with their effects from production to sales as well as our distributors.

In any case, independent from the conditions; we have full thrust to our country, future and the products which we produce. Because of that we don't have take a break on our investments.

With the investment we completed in 2015, we are the only producer in Turkey to provide stone wool with pallet and stretch hood. With this feature, we can prevent up to 10% waste throughout the period from production to application which is not counted on paper.

With the technology and machinery investment we made in 2019, we will offer products with new generation fiber technology to the market as of the second half of the year.

With our latest investments, we will be able to provide have more performance products at the same density and same thickness with well packaged which have minimal impact during the process from production to application.

With a proactive management approach, we always want to achieve better. We aim to be the leading company to direct the market in Turkey and neighborcountries in terms of quality.

Multinational companies occupy the majority of the market in Turkey and neighbor countries. We continue to improve ourselves with the responsibility of being a company with 100% Turkish capital.

We believe that we can reach the level of contemporary civilizations indicated by Atatürk only by producing.

Emin Özal

DO YOU STILL BUY STONE
**WOOL IN
PACKAGES**
WITHOUT
PALLET AND STRETCH HOOD

With Pallet / Stretch Hood package,

Stone wool have min. affect from the rain, it saves time and workforce by allowing outdoor storage.

The material is less damaged during Loading / Unloading, no stock waste is created, thus provides cost advantage.



From Basalt to Stone wool

From volcanic-origin basalt stone, we get 1500oC melted material and convert it to fiber. After that forming stone wool by polymerization process. At the end of line we pack and load it by machines with pallet and stretch hood.



Basalt

1500°C melt



Polymerization



Packing



Storage



Stone Wool

Intended Use and Properties

Stone wool is made of melting inorganic raw materials created by volcanic formations and 97% available in the nature such as basalt at ~1500 degrees and converting these into fiber form.

Insulation provide by small air vesicles in microscopic sizes and at homogeneous dimensions which are not possible to see with naked eye.



Thermal Insulation

We recommend that thermal insulation of buildings to be made externally as much as possible. In this way, heat losses from heat bridges and internal surface moisture and mold caused by these bridges are also prevented. External thermal insulation also protects the structure carrier system from damage caused by expansions and contractions due to outdoor temperature differences. We recommend thermal insulation to be done externally in buildings used all day long (such as houses, hospitals). Thus, the internal comfort of the structure is maintained thanks to heat accumulation of heavy components (slabs and walls) after the heating system is switched off.

In buildings used temporarily (such as sports halls, mosques, concert halls), thermal insulation is made from the inside to provide fuel saving. Such saving occurs because the lightweight insulation components do not store heat. Therefore, the indoor environment is heated or cooled more quickly. However, we also recommend a minimum insulation externally to protect the structure from external weather conditions. The essential factor in both thermal and steam insulation is the uninterrupted application as in water insulation.



Sound Insulation

Only open porosity mineral wool materials (stone wool and glass veil) are used for sound insulation. Plastic foam materials with closed porosity (XPS, EPS, Polyurethane) do not provide sound insulation.

In sound insulation applications, it is required to prevent the sound bridges formed by solid objects and the gaps through which the sound will pass. It should be considered beforehand that the base sounds at low frequencies (125 Hz) cannot be insulated sufficiently in sound insulation and sound transmission prevention applications with mineral wools in the interior environment. (See sound absorption coefficients table)



Fire Insulation

Main principle of fire safety is to take measures before the fire occurs. This can only be achieved by using stone wool in heat or sound insulation of structures. Stone wool does not burn, and prevents spreading of fire thanks to its fire suppressing properties thus providing time for firefighters and helps people and property to be saved.

ÖZPOR STONE WOOL is produced in accordance with standard no. TS EN 13162+A1: 2015-04*.
No foreign license is used for production of ÖZPOR STONE WOOL.

General Properties

Fire Resistance

ÖZPOR Stone wool is class A noncombustible material according to TS EN 13501-1 since its raw material is inorganic basalt rock. Stone wool does not combust or burn. It melts at 1000°C

Heat Conductivity

Heat conductivity calculation value of ÖZPOR Stone wool products used in buildings as stated in our CE certificates according to TS EN 12667 standards is $0,035 \leq \lambda \leq 0,040$ W/mK dir.



Humidity
Resistance



Sound
Insulation



Fire
Resistance



Energy
Saving



Healthy
Product



Durable
Product



Recyclable



Wall Insulation

**Thermal
Insulation**



**Sound
Insulation**



**Fire
Insulation**



ÖZPOR Stone wool offers three possibilities for wall insulation; Thermal insulation, Sound insulation and Fire Protection. ÖZPOR Stone wool wall insulation boards are also available in five sorts based on the purpose and place of use.

Partition board
Exterior board
Facade board

Surface Coatings

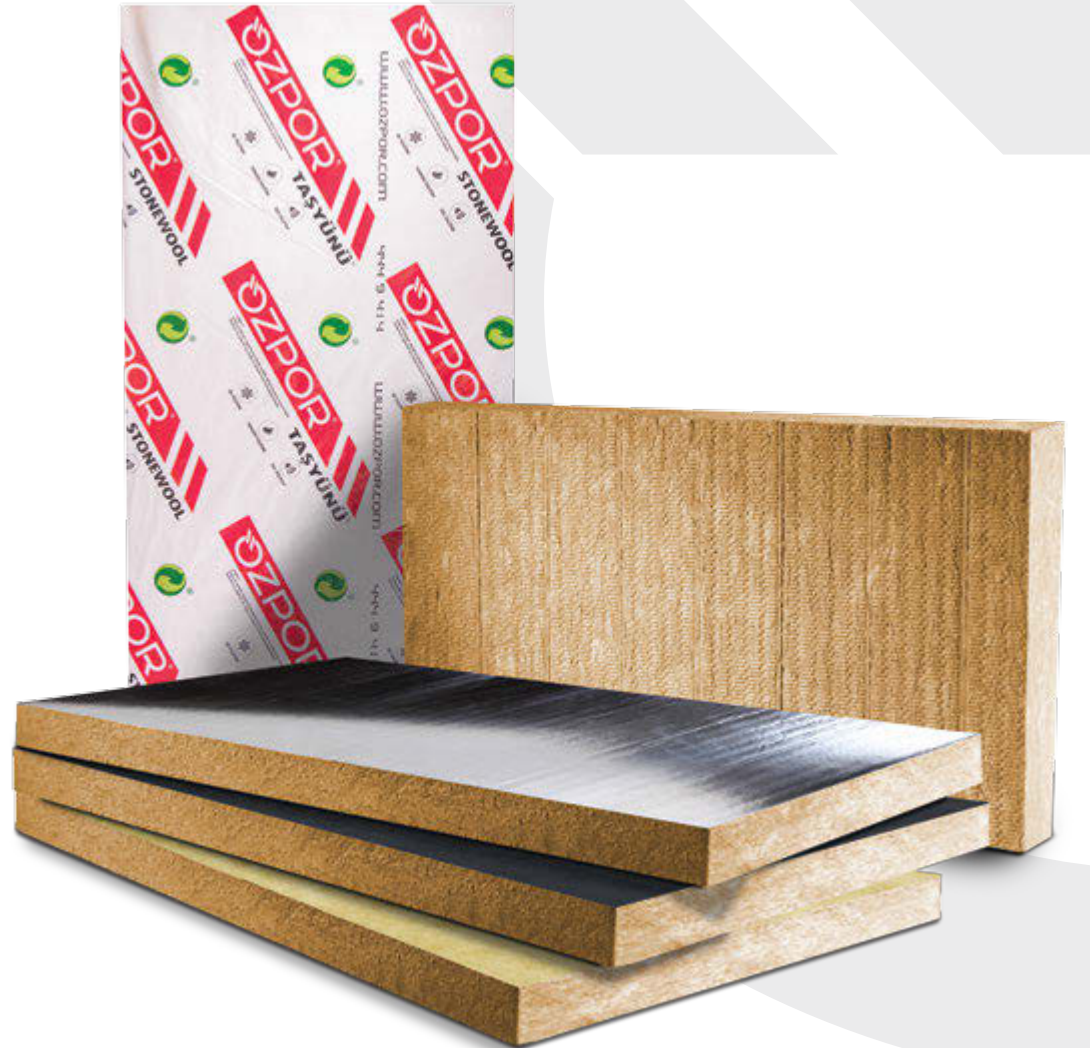
ÖZPOR Stone wool wall insulation boards are produced at factory with one side coated with the following materials:

Aluminum Foil
Yellow Glass Veil
Black Glass Veil

One side can be coated with aluminum foil, the other side can be coated with glass veil or both sides can be coated with glass veil.

Water-Repellent Properties

ÖZPOR Stone wool for wall board, floating floor board used and facade board on exterior walls have water-repellent properties by adding silicone during production.



Özpor Stone wool

High Fire Resistance and
Low Heat Conductivity



Facade Board - * Etics

Application areas

In order to provide thermal and sound insulation as well as fire safety on net or plaster application system on thermal insulation on external surfaces of buildings (etics), steam diffusion should be determined in order to determine whether a steam barrier is required according to TS EN 12086.

The place of the steam barrier in the system is always the hot side of thermal insulation. That is, it is risky to use steam barrier on both side in buildings with both heating and cooling operations. It is possible that the steam that cannot be discharged outside due to the steam barrier being on the wrong side during some sessions thus wetting the thermal insulation. In such structures, we recommend ventilated roof and facade structures to discharge the steam without using steam barrier instead of using steam barriers in both sides.

Braided Fiber Structure

As result of new fiber crimping technology, higher pressure and tension values are obtained.

In this way, ÖZPOR Stone wools can ensure more durable and long lasting building insulations.



Physical Properties

Density (Kg/m³)

120 - 150 Kg/m³

Thicknesses (mm)

40 - 50 - 60 - 80 - 100 - 120 - 150 / mm

Dimensions (cm)

60X120 / cm

Tensile Strength Values

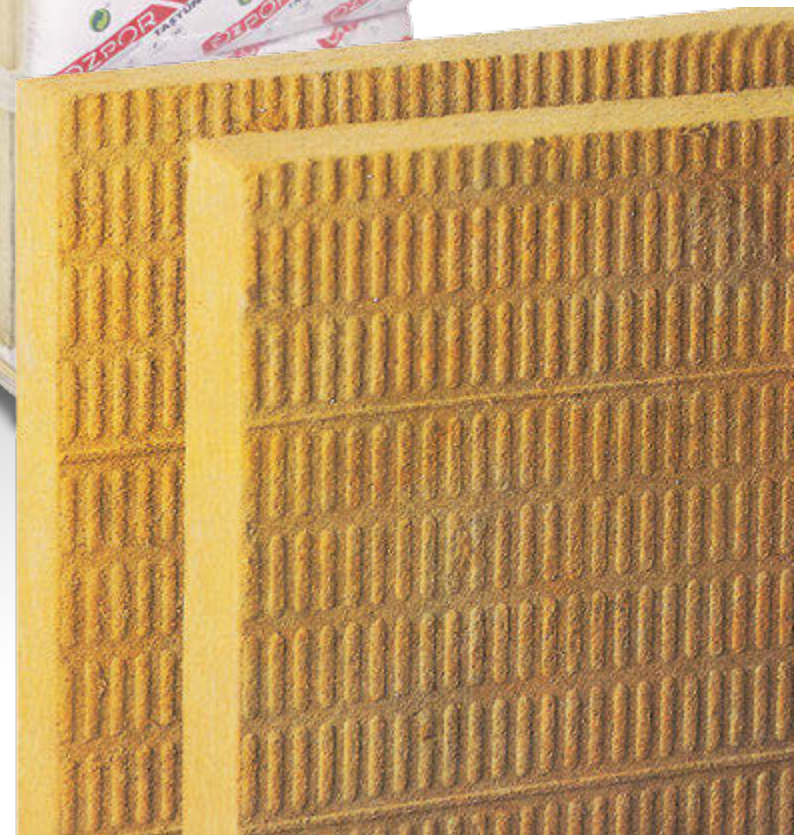
TR 7.5 - 10 - 15 Varies according to product thicknesses.

Thermal Conductivity (W/mK)*

$0,035 \leq \lambda \leq 0,040$

* Fabricated product properties of stone wool for buildings

** Stone wool used in facade is a technical product. It is classified with its tensile strength value. Please contact for advantageous 7.5 TR product.



Özpor Stone wool

You can ensure Thermal Insulation,
Sound Insulation and Fire Insulation
with Özpor Stone wool.

 **ÖZPOR**

**WE ACCEPT RAISING AWARENESS
OF THE SOCIETY AS OUR DUTY**

THERMAL INSULATION IS NOT
A LUXURY, IT IS QUALITY LIFE
STANDARD AND RESPECT TO THE
ENVIRONMENT...



OZPOR

Exterior Board

Application Areas

Used for thermal, sound and fire safety purposes in prefabricated buildings under mechanically cladded facade coatings such as metal, glass, granite.

Physical Properties

Density (Kg/m³)

50 Kg/m³

Thicknesses (mm)

40 - 50 - 60 - 80 - 100 - 150 - 180 / mm

Dimensions (cm)

60X120 cm

* Cladded can be produced in special diameters suitable for carrier system ranges.

Dimensions (mm)	50	80	100	150
R (W/mK)	1.25	2	2.5	3.75



Partition Board

Application Areas

For thermal and sound insulation inwall applications requiring acoustic properties such as neighboring internal walls, elevator shafts and stairwell walls, lightweight partition walls.

Fiziksel Özellikleri

Density (Kg/m³)

40 - 50 Kg/m³

Thicknesses (mm)

30 - 40 - 50 - 60 - 80 - 100 - 150 - 180 / mm

Dimensions (cm)

60X120 cm

* Can be produced in special diameters based on required ceiling height.



Özpor Stone wool Provides Gains

We inspect our quality
at all levels and provide
the best service to you.



Roof and Floor Insulation

Özpor Stone wool provides three possibilities for insulation of roofs and floors.



One side of ÖZPÖR Stone wool roof insulation products can be delivered as coated with following materials at the factory. It can be coated with aluminum foil, glass veil, one side with aluminum foil and one side with glass veil or both sides with glass veil.

Application Areas

ÖZPÖR Stone wool roof and floor insulation products are as below based on their Application Areas and purpose:

Roof Blanket
Board Between Rafter
Terrace Board
Floorboard

Heat conductivity

Heat conductivity calculation value of ÖZPÖR Stone wool products used in buildings as stated TS EN 12667 for mineral wools is $\leq \lambda \leq 0.040\text{W/mK}$

Surface Coatings

One side of ÖZPÖR Stone wool roof insulation products can be delivered as coated with following materials at the factory.

Aluminum Foil
Black Glass veil
Yellow Glass veil

Fire Resistance

ÖZPÖR Stone wool is class A1 noncombustible material according to TS EN 13501-1 since its raw material is inorganic basalt rock. Stone wool does not combust or burn. It melts at $\geq 1000^\circ\text{C}$

Terrace Board

Özpor Stone wool terrace boards can be produced bare and glass veil or aluminum coated on one site.

Water-Repellent Properties

ÖZPOR Stone wool terrace boards have water-repellent properties by adding silicone during production.

Application Areas

Concrete or trapeze metal, flat or inclined roofs, flat roofs on which people can or cannot walk.

Application

Applied with the classic terrace roof insulation principle where the thermal insulation is at the bottom and water insulation is on the top. This coating alone should not be expected to make water insulation. As the usage temperature of stone wool is very high and it does not burn, it allows water insulation to be provided quickly with torch.

Pvc or bitumen based water insulation covers can also be used on a bare terrace sheet. According to the degree-day regions in Turkey, you will need two or three layers of thermal insulation. When applying the boards, we recommend that the top layer boards should be placed staggered. On concrete floored roofs, ÖZPOR Stone wool terrace boards and water insulation layers are applied after respectively applying inclination concrete (trowel polishing) or levelling screed, steam insulation and bitumen.

Roofs which people can walk on are finished with floor coating and roofs which people cannot walk on are finished with laying pebbles. On trapezoidal metal roofs, after the steam insulation layer, ÖZPOR Stone wool terrace plates are fixed to the metal base by mechanical fixation. Water insulation and other layers as above are applied on it.

Physical Properties

Density (Kg/m³)

120 - 150 Kg/m³

Thicknesses (mm)

40 - 50 - 80 - 100 / mm

Dimensions (cm) - Bare

60X120 / cm

Compressive Strength (kPa)

25 - 40 - 60 / kPa


*Value with 10% deformation based on TS EN 826 Compressive Strength Class standard.



● Provides high compressive strength value with resistant fiber structure.







OZPOR[®]
CONCILIATE
STONE WOOL
WITH RAIN

**MINIMUM IMPACT OF ADVERSE
WEATHER CONDITIONS**

Floating Floorboard

Application Areas

Under floating screed for impact sound insulation of floors stories in buildings. For vibration isolation on the bases of vibrating machines and devices.

Floating Screed Application

Purpose of this application is to create a buffer layer with ÖZPOR Stone wool floor board in floors between floor covering in order to break the contact of the upper screed (floating screed) with the concrete floor below and to absorb the sound of footsteps, furniture movingnoises, etc. on the floating screed in order to ensure that these impact sounds are not transmitted to the lower floors.

On rough concrete floor (trowel polishing) or after leveling screed is made, strips are cut from ÖZPOR Stone wool plate and it is placed all around like skirting as strips on bottoms of the wall (with height as screed and floor coat thickness) in order to prevent sound bridge. After that, floorboards are applied on the screed as a layer.

After laying a free layer of nylon for moisture insulation, the joints are equipped with screed with least 5 cm thickness and 400 doses. The floor coat is applied on this. Skirting of the floor coat must not touch the surface of the coat.

Vibration insulation application

Floating screed principle is also applied in the bottom or base insulation of machines and devices. However, more practical solutions can be created compared to floor. For example, if the device is not too heavy, a chipboard floorboard can be placed on finished floorboard and surrounded with a skirting that does not contact with the lower floor.

Vibration isolation of heavy machines must be taken into consideration during the project. As machine base, instead of on-site poured equipped concrete base, precast base placed on ÖZPOR Stone wool floor is both practical and eliminates moisture insulation process.

Sound Insulation

A material must have low dynamic hardness in order to be able to provide impact sound (vibration) insulation. So, it must be flexible so that it can absorb the impacts. This feature exists only in mineral wool (stone wool, glass veil) materials.

In order for polystyrene foam EPS material to be used in vibration isolation, it must be passed through cylinder to pop the beads and give flexibility to the material. Since this application is not performed in our country, it is wrong to use Styrofoam in machine bases. It transmits vibrations as they are.



Density	Thicknesses	Dimensions (cm) - Bare
110 Kg/m ³	30-40 / 30-35 /mm	60X120 / cm

Industrial and Fire Insulations



ÖZPOR Stone wool duct boards are produced in accordance with standard no. TS EN 14303. No foreign license is used for production of ÖZPOR STONE WOOL.

ÖZPOR Stone wool products produced for process and installation of industrial facilities and ship insulations and as fire extinguisher are:

Industrial Blankets
Industrial Boards
Bulk Stone wool

ÖZPOR Stone wool provides three opportunities together for industrial insulations:

Thermal insulation
Sound insulation
Fire protection

GENERAL PROPERTIES

Usage Temperature

Service temperature is between -50oC and 500-750oC. It is resistant up to 1000oC for transmission durations. It varies based on product types and thicknesses.

Thermal Conductivity

Thermal conductivity varying based on temperature is shown in the table below.

Thermal Conductivity (W/mk)

Average Temperature °C*	200	300	400
	0.55	0.70	0.85

* Intermediate values are found by interpolation.

Fire Resistance

As raw materials of ÖZPOR stone wool formed from inorganic basalt rock, it is class A noncombustible material according to TS EN 13505-1 and DIN 4102. Stone wool does not combust or burn. Melting is starting over $\geq 1000^{\circ}\text{C}$



Rabitz Wire Blanket

ÖZPOR Stone wool industrial blankets are products stitched with wires to the galvanized cage wire on one surface with minimum organic binder.

Surface Coating

ÖZPOR Stone wool industrial blankets can also be produced with laminated aluminum foil coated on Craft paper on one side at the factory. This foil (since it is perforated during sewing) cannot be used as steam breaker.

Application Areas

Heating boilers, Pipes w/large diameter, High temperature industrial processes, Blast furnaces, Chimneys, Cylindrical tanks and storages, Ship installations, Fire protection of steel structures.

Method of Application

Fixing and spacer pins of the surface to be insulated are welded. ÖZPOR Stone wool industrial site is drawn to and passed through the pins, joints are passed through the meshes of the cage wire on the blanket and galvanized wire is sewn manually. Joints of the circles welded to the pins must be sealed. Application for the pipes is the same. However, pins are not required for coating. To prevent the blanket from detaching from the rabitz wire, move the rabitz wire by holding it from the farthest corner of opening place during application area movement and placement.

Physical Properties

Density (Kg/m³)

80 - 90 - 100 - 125 / Kg/m³

Thicknesses (mm)

30 - 40 - 50 - 60 - 80 - 100 / mm

Dimensions (cm) - Bare

100X800 - 300* / cm

*Roll size varies based on thickness.



Bulk Stone wool

ÖZPOR Bulk Stone wool consists of free stone wool fibers that do not have any shape. It is sold in 24 kg packages.

Application Areas

- Places that can be filled by shoving method
- For thermal insulation of formless surfaces where no blankets or boards are used
- For double membrane objects
- For thermal insulation of household type small ovens and laboratory devices.







Özpor Stone wool Provides Gains

Have minimum affect from rain
Allows storage outdoors

Industrial Boards

ÖZPOR Stone wool industrial boards can be used against unwanted heat losses or gains as well as reducing noise level to prevent damage to employee health and decrease in working efficiency. Glass veil types are recommended for such application.

Surface Coatings

ÖZPOR Stone wool duct boards can also be produced at the factory with one side coated with the materials below.

Aluminum Foil
Yellow Glass veil
Black Glass veil

Application Areas

Heating boilers
Room heaters
High temperature industrial processes
Blast furnaces
Flat surface tanks and storages
Ship hulls

Sound Absorption Coefficient * (Sabin)

Frequency (Hz)	125	250	500	1000	2000	4000
	0.40	0.55	0.77	0.98	0.96	0.93

*Data is calculated theoretically.

Physical Properties

Density (Kg/m³)

70 - 110 Kg/m³

Thicknesses (mm)

40 - 50 - 60 - 80 - 100 - 150 / mm

Dimensions (cm) - Bare

60X120 / cm



Duct Board

Surface Coatings

ÖZPOR Stone wool duct boards can also be produced at the factory with one side coated with the materials below.

Aluminum Foil

Application Areas

With other coatings as bare from outside for thermal and sound insulation in hot ducts

As external aluminum foil coating for thermal and sound insulation in cold ducts as well as internal glass veil coating against air noise in ducts.

Method of Application

If aluminum foil coated air conditioner board is used, fixing pins with self-adhesive bases are adhered to the cleaned duct surface as 5 pcs per squaremeter. ÖZPOR Stone wool duct board is cut in suitable dimensions, inserted to the pins with the foil facing outside. Transversal and longitudinal joints corners are sealed with aluminum foil adhesive tape.

In the application to be made with bare air conditioner board, fixing pins can be used as above or boards are fastened to the duct with plastic circles. A protective coating is applied on.

In order to prevent the noise caused by the air flow in the duct, sound absorption feature of ÖZPOR Stone wool duct board is utilized. For this purpose, black glass veil is applied to the inner surface of the modular duct parts by using the fixing pins, facing inside the duct. Corner joints are closed by riveting metal L profiles. After the insulation is completed, modular duct parts are joined together with gaskets.

Sound Absorption Coefficient * (Sabin)

Frequency (Hz)	125	250	500	1000	2000	4000
	0.40	0.55	0.77	0.98	0.96	0.93

Physical Properties

Density (Kg/m³)

70 - 110 Kg / m³

Thicknesses (mm)

25 - 30 - 40 - 50 / mm

Dimensions (cm) - Bare

60X120 / cm



Multipack

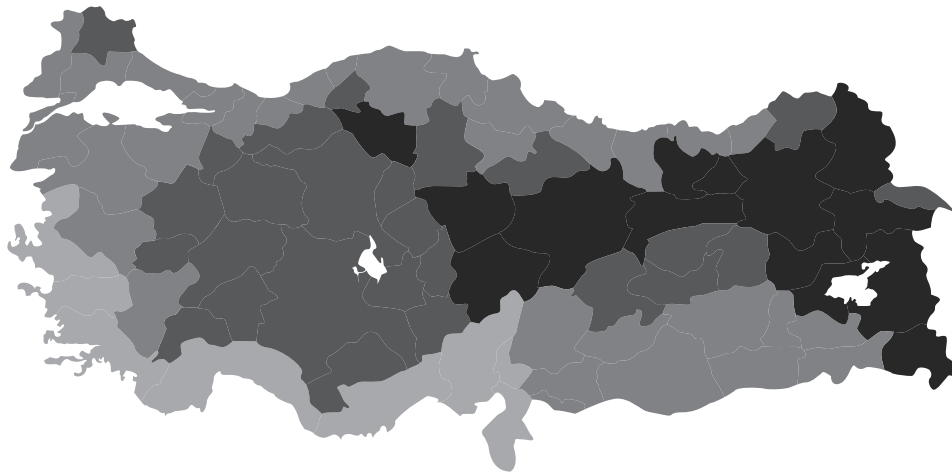
More storage thanks to Multipack Packing



Insulation Map

Minimum thicknesses recommended for right insulation

1. Region: min 5-6 cm
2. Region: min 6-7 cm
3. Region: min 7-8 cm
4. Region: min 9-10 cm



Product Type and Properties	Thickness (cm)	Package			Package/Pallet	h:2,75-L:13,60 TIR Loading Amount		
		Width x Length (cm)	Package Board	(m2)		Pallet	Package	(m2)
40-50 kg/m3	5	60 x 120	8	5,76	16	22	352	2.028
	8	60 x 120	6	4,32	12	22	264	1.140
	10	60 x 120	4	2,88	16	22	352	1.014
70 kg/m3	5	60 x 120	8	5,76	12	22	264	1.521
	10	60 x 120	4	2,88	12	22	264	760
120 kg/m3	5	60 x 120	6	4,32	16	22	352	1.521
	7	60 x 120	5	3,60	12	22	264	950
	10	60 x 120	4	2,88	12	22	264	760
150 kg/m3	5	60 x 120	6	4,32	16	22	352	1.521
	7	60 x 120	4	2,88	16	22	352	1.014
	10	60 x 120	3	2,16	16	22	352	760
Cast		Blanket			24	20	480	9.600 Kg
Rabitz Wire Blanket 80 kg/m3	5	100 x 600	Blanket 6,00	6,00	20	22	440	2.640
	6	100 x 600	Blanket 6,00	6,00	20	22	440	2.640
	8	100 x 300	Blanket 3,00	3,00	20	22	440	1.320
	10	100 x 300	Blanket 3,00	3,00	20	22	440	1.320
Rabitz Wire Blanket 125 kg/m3	5	100 x 500	Blanket 5,00	5,00	20	22	440	2.200
	6	100 x 400	Blanket 4,00	4,00	20	22	440	1.760
	8	100 x 300	Blanket 3,00	3,00	20	22	440	1.320
	10	100 x 240	Blanket 2,40	2,40	20	22	440	1.056
Aluminum foil and glass veil coated 50 kg/m3	5	60 x 120	8	5,76	12	22	264	1.521
	8	60 x 120	6	4,32	10	22	220	950
	10	60 x 120	4	2,88	12	22	264	760

Lambda λ : Heat permeability resistance coefficient
The lower the value, the higher the insulation

$$R = \frac{\text{Thickness}}{\lambda} \quad U = \frac{1}{R}$$

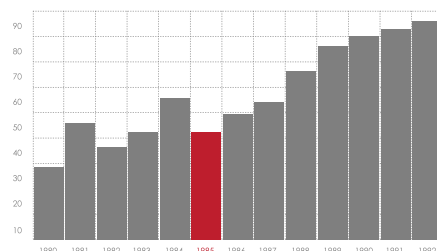
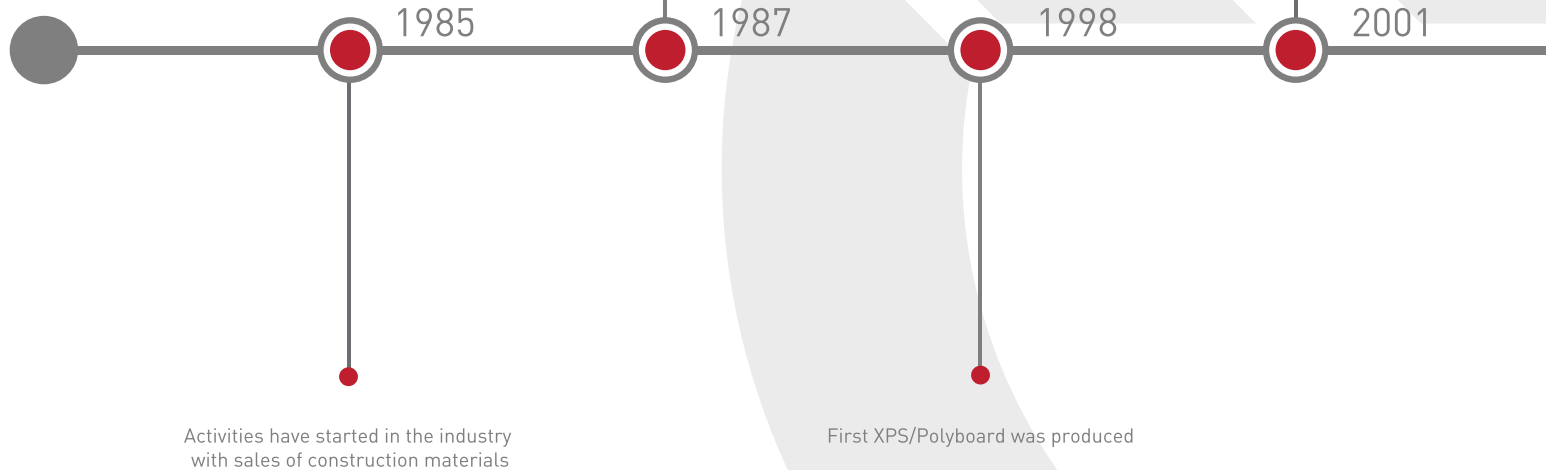
Please contact our company for different densities, thicknesses and container loadings

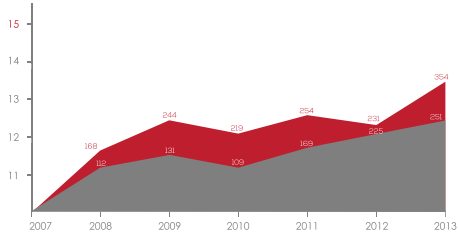
Özpor Stone wool
Ankara Production Facilities

ÖZPOR®

We Completed **34. Years** Aiming for Better

OZPOR[®]





Our new stone wool facility with 15.000 ton/year capacity has started production

30th year in the industry



2002



2007



2015



2017



2019

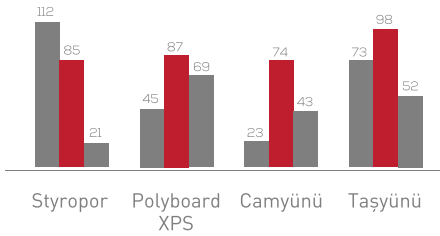


2020

Stone wool investment was completed and Stone wool was included in production network

Stone wool renewal investment was completed and the first pallet & stretch hood product was released to market in Turkey

New generation fiber technology investment was made
34th year in the sector





Özpor Stone wool Provides Benefits

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