

عتیق کالا اسپادانا

Ayegh-kala.com

Ayeg Kala Espadana Rock Wool Company

Insulation is a symbol of renewal, energy storage and foresight. Humans have always tried to protect themselves from cold, heat and noise pollution. Technological progress and the increase in environmental pollutants have doubled the importance of the issue. Therefore, Ayeg Kala Espadana, a producer of sound and thermal insulation, has been working in the field of producing rock wool as one of the most widely used mineral-based insulation materials since 2011 and is trying to achieve this goal. The experienced staff of this company, using modern knowledge and years of experience, consider customer orientation and quality production to be essential for the progress of any industry and are determined to provide innovative and sustainable services in this regard.

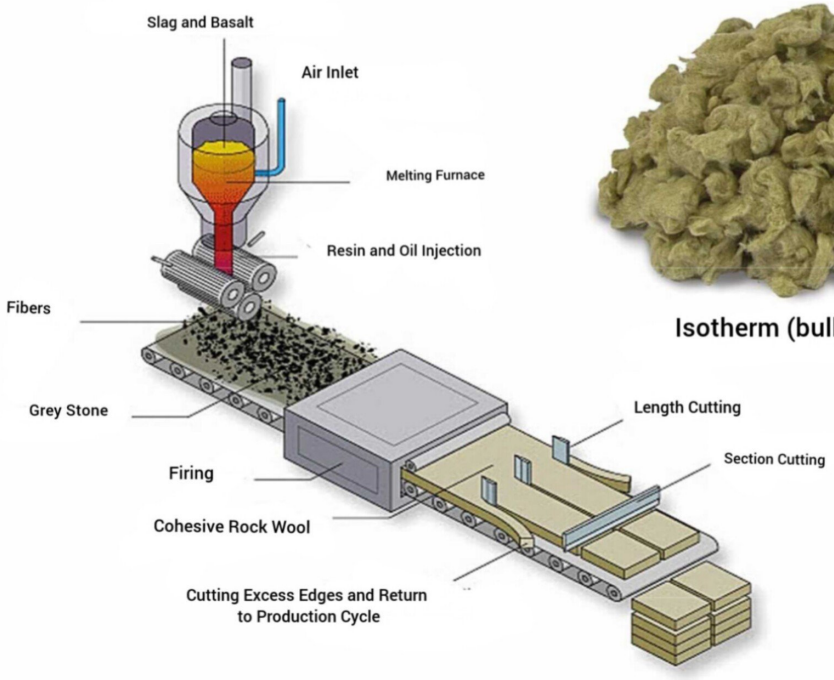
The products manufactured by this company (including all insulation used in the industrial and housing sectors) are:

- Isotherm **- Isoblank** **- Isopipe** **- Fenopanel** **- Fenoflat**



Rock wool production process:

First, the required amount of raw materials is measured and sent to the melting furnace. Then, the raw materials are melted in the furnace at high temperature (1200 to 1500 degrees Celsius) and fibers and yarns are produced in the fiber making machine. The produced fibers are fed to the rotating roller and raw rock wool is produced. Then, the primary wool is compressed under hot presses and baked at a temperature of about 200 degrees Celsius and finally, according to the program provided to the production unit, the final product is produced according to the type, thickness, density and desired dimensions. The smoke produced during this process is filtered to minimize any environmental impact.





Isotherm (bulk raw wool)



IsoBlanket (Blanket Insulation)



Fanu Panel (board insulation)



Pheno felt (resin-filled quilted insulation)



ISO Pipe (Pipe Insulation)

Products produced by the company Pasham Ayegh Kala Espadana

1- Isotherm (bulk raw wool): This type of wool is taken directly from production and does not contain any bonding agent and is supplied in rolls, bulk and slubbed form. Isotherm is used in insulation between two building walls, chimney walls, industrial exhausts and filling spaces without a regular geometric shape. Slubbed raw wool is used in the production of brake pads and clutch plates, lightweight concretes, moisture insulation, etc. The effective application temperature range of Isotherm exceeds 750 degrees Celsius and its melting point is about 1300 degrees Celsius.



Isothermal heat transfer coefficient		
Temperature in Celsius	Isothermal heat transfer coefficient w/mc	
	density 80 kg/m^3	density 100 kg/m^3
50	0/045	0/044
100	0/055	0/047
150	0/061	0/061
200	0/074	0/064
300	0/096	0/086
400	0/118	0/110

2- Isoblanket (Stitched Insulation Blanket)

Raw wool—with its fibers consolidated using heat-resistant wire—is stitched onto galvanized wire mesh featuring hexagonal openings; it is manufactured and utilized in various configurations.

A notable characteristic of this product is its high thermal tolerance, capable of withstanding temperatures exceeding 750°C.It is used for insulating flat and curved surfaces, large-diameter pipes, furnaces, boilers, tall chimneys, turbine exhausts, heating chambers, and more.



(W/m –°k) Thermal conductivity coefficient				Temperature (℃)
kg/m³ Density				
120	100	80	50	
0.046	0.0466	0.047	0.0475	50
0.048	0.0512	0.053	0.0557	100
0.057	0.0615	0.064	0.0678	150
0.065	0.0714	0.075	0.0806	200
0.074	0.0816	0.086	0.0927	250
0.087	0.0934	0.097	0.1024	300
0.11	0.1176	0.122	0.1285	400

Isoblanket				
Thickness mm	Width mm	Length mm	Density kg/m³	Specifications
۲۵–۱۰۰	۱۰۰–۱۲۰۰	As ordered	۸۰–۱۵۰	Quilted insulation stitched with galvanized wire mesh
۲۵–۱۰۰	۱۰۰–۱۲۰۰		۸۰–۱۵۰	Quilted insulation faced on one side with galvanized wire mesh
۲۵–۱۰۰	۱۰۰–۱۲۰۰		۸۰–۱۵۰	Quilted insulation faced on one side with galvanized wire mesh and aluminum foil
۲۵–۱۰۰	۱۰۰–۱۲۰۰		۸۰–۱۵۰	Quilt-style insulation faced with kraft paper on one side
۲۵–۱۰۰	۱۰۰–۱۲۰۰		۸۰–۱۵۰	Quilted insulation faced on one side with kraft paper and galvanized wire mesh
۲۵–۱۰۰	۱۰۰–۱۲۰۰		۸۰–۱۵۰	Quilted insulation faced on one side with reinforced aluminum foil
۲۵–۱۰۰	۱۰۰–۱۲۰۰		۸۰–۱۵۰	Quilted insulation faced on one side with reinforced aluminum foil and backed with galvanized wire mesh.

3- Isopipe (pipe insulation)

Prefabricated pipe insulation made of rock wool is used to insulate utility pipes (hot, cold, steam). Coated and uncoated types of this insulation are produced according to customer taste. On the other hand, depending on the type of use, slotted and unslotted types are produced and are used with different densities and dimensions. Refineries, power plants, petrochemical industries, and industrial and residential units are the main consumers of this type of insulation.

Isopipe heat transfer coefficient							
Temperature in Celsius	۵۰	۱۰۰	۱۵۰	۲۰۰	۲۵۰	۳۰۰	۴۰۰
W/mc	۰/۰۳۸	۰/۰۴۰	۰/۰۴۲	۰/۰۴۴	۰/۰۵۵	۰/۰۷۱	۰/۰۹۸



Isopipe					
thickness mm	size mm	length mm	density kg/m³	Specifications	code
۲۵–۱۰۰	½ ۱۶	۵۰۰	۱۰۰–۱۴۰	Prefabricated pipe insulation without coating	541
۲۵–۱۰۰	½ ۱۶	۵۰۰	۱۰۰–۱۲۰	Prefabricated pipe insulation with aluminum coating	543
۲۵–۱۰۰	½ ۱۶	۵۰۰	۱۰۰–۱۲۰	Prefabricated pipe insulation with reinforced aluminum coating	544
۲۵–۱۰۰	½ ۱۶	۵۰۰	۱۰۰–۱۲۰	Prefabricated pipe insulation without finishing	545

4- Fenno Panel (Compressed Board Insulation) :

This insulation is produced from resin wool compressed by heavy hot presses. The panels are effective against heat up to 350 degrees Celsius. It is used in buildings as insulation between walls to reduce energy loss and in recording studios, subway tunnels, conference hall walls, and airports to absorb sound and prevent vibration transmission. Also, petrochemical complexes, refineries, power plants, industrial centers, and buildings are among the major consumers of panels.

Heat transfer coefficient of panels

Temperature in Celsius	Heat transfer coefficient of panels w/mc			
	۸۰	۱۰۰	۱۲۰	۱۵۰ density Kg/m³
۵۰	۰/۰۴۷	۰/۰۴۶	۰/۰۴۵	۰/۰۵۳
۱۰۰	۰/۰۵۵	۰/۰۵۳	۰/۰۵۰	۰/۰۵۷
۱۵۰	۰/۰۶۷	۰/۰۶۴	۰/۰۶۰	۰/۰۶۴
۲۰۰	۰/۰۷۱	۰/۰۶۸	۰/۰۶۵	۰/۰۷۱
۳۰۰	۰/۰۷۶	۰/۰۹۰	۰/۰۸۲	۰/۰۸۷
۴۰۰	۰/۱۱۲	۰/۱۳۴	۰/۱۰۷	۰/۱۰۹





Techno panel

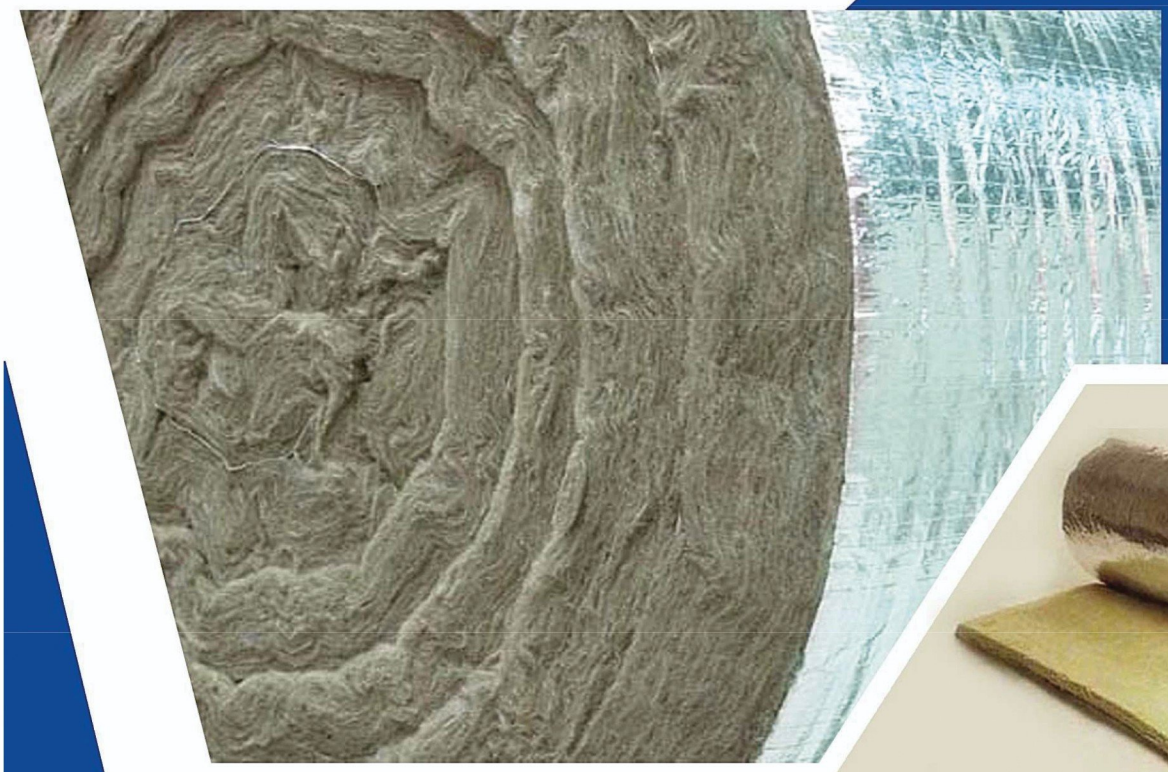
thickness mm	width mm	length mm	density kg/m³	Specifications	code
۲۵–۱۰۰	۵۰۰–۱۲۰۰	۵۰۰–۱۵۰۰	۸–۵۰۰	Uncoated board insulation	541
۲۵–۱۰۰	۵۰۰–۱۲۰۰	۵۰۰–۱۵۰۰	۸–۵۰۰	Board insulation with one side aluminum coating	543
۲۵–۱۰۰	۵۰۰–۱۲۰۰	۵۰۰–۱۵۰۰	۸–۵۰۰	Board insulation with aluminum coating on both sides	544
۲۵–۱۰۰	۵۰۰–۱۲۰۰	۵۰۰–۱۵۰۰	۸–۵۰۰	Board insulation with one side reinforced with aluminum cladding	545
۲۵–۱۰۰	۵۰۰–۱۲۰۰	۵۰۰–۱۵۰۰	۸–۵۰۰	Board insulation with reinforced aluminum cladding on both sides	546

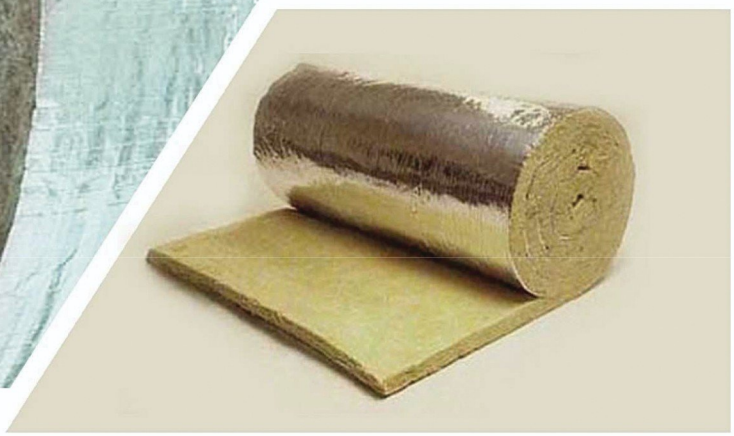
Pheno-Felt (Resin-Bonded Blanket Insulation)

Pheno-Felt is a type of resin-bonded insulation produced in a blanket (quilt-like) format. Depending on customer requirements, it can be supplied with facings such as aluminum foil or kraft paper. This product is used for the insulation of ducts, steam boilers, industrial ovens, and large-diameter utility piping.

Although primarily utilized in industrial applications, Pheno-Felt is also employed in commercial buildings due to its high thermal and acoustic resistance.

This insulation is typically manufactured in rolls and is available in various densities to suit specific customer needs.





Thickness mm	Width mm	Length mm	Density kg/m^3	Specifications	code
۲۵–۷۵	۹۵۰–۱۲۰۰	As ordered	۳۰–۶۰	Unfaced resin-bonded quilt insulation	541
۲۵–۷۵	۹۵۰–۱۲۰۰		۳۰–۶۰	Resin-bonded blanket insulation with aluminum foil facing on one side	543
۲۵–۷۵	۹۵۰–۱۲۰۰		۳۰–۶۰	Resin-bonded blanket insulation, faced on one side with reinforced aluminum foil and on the other with kraft paper.	544
۲۵–۷۵	۹۵۰–۱۲۰۰		۳۰–۶۰	Resin-bonded blanket insulation with one-sided reinforced aluminum foil facing	545
۲۵–۷۵	۹۵۰–۱۲۰۰		۳۰–۶۰	Resin-bonded blanket insulation with aluminum foil on one side and reinforced paper (scrim-reinforced paper) on both sides.	546
۲۵–۷۵	۹۵۰–۱۲۰۰		۳۰–۶۰	Resin-bonded blanket insulation faced with reinforced paper and kraft paper on both sides	547
۲۵–۷۵	۹۵۰–۱۲۰۰		۳۰–۶۰	Resin-bonded blanket insulation faced with kraft paper and aluminum foil on both sides	548
۲۵–۷۵	۹۵۰–۱۲۰۰		۳۰–۶۰	Resin-bonded blanket insulation, faced on both sides with kraft paper and reinforced aluminum foil.	549



Insulation Accessories
1- Aluminum Sheet
In order to mechanically and physically protect the insulated surfaces against climatic conditions, flat and roller aluminum sheets with 5 mm and 32 mm pitches are applied to them. Aluminum sheets are one meter wide and from 0.2 mm to 1.2 mm thick with grades 1050 - 1060 - 3003 - 3004 - 3105 and 5052 are supplied according to ASTM B209 standard.

Aluminum sheet can be produced in different dimensions, which are available in the market in two forms: rolls and sheets. In coil form (roll form), desired longitudinal dimensions can be ordered. Also, in this case, shadowline, roller shutter, trapezoid, damper, etc. can be produced from aluminum sheet.

In some cases, aluminum sheet with polykraft coating is used to separate the metal jacket from the insulation surface and also to protect the underside of the jackets from moisture and prevent corrosion.

Aluminum sheet with polykraft coating with a width of 1 meter and a total thickness (aluminum sheet thickness plus 0.2 mm kraft paper thickness) of 1.4 mm can be produced in three physical forms: smooth, 5 mm pitch and 32 mm pitch.

Aluminum sheet with polykraft coating with 5 mm pitch can be provided in a width of one meter and a desired length or in rolls of 30 meters.

Aluminum polykraft sheet with 32 mm pitch is produced from a sheet of one width and the length desired by the customer. The width of the sheet after production is 92 cm.



2- Screws
In order to connect the sheet to the insulated pipe and tanks, stainless steel and galvanized self-tapping screws with a head are used, which are available in dimensions of 13×13.2, 13×18.4, 13×4.2 to 16×4.2 and ... Also, the material and alloy of the screws are stainless steel with grades 304 and 316.

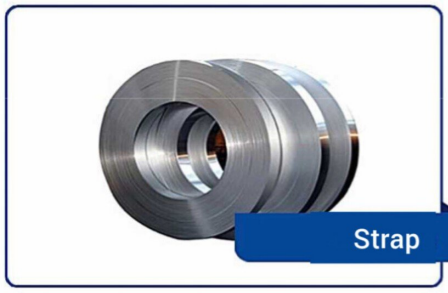


3- Wire
This wire is made of galvanized steel and stainless steel with grade 304 for the implementation and fastening of various types of insulation.



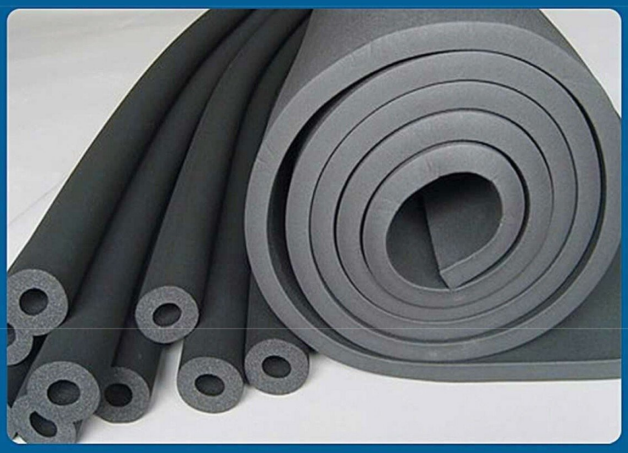
4- Clips
They are used to implement strapping and tighten it in insulation operations with widths of 13, 16, 19 and 25.

5- Straps
Aluminum, steel and galvanized straps with widths of 13, 16, 19 and 25 mm and thickness of 0.4 to 1 mm are produced in stainless steel and galvanized in rolls with the required lengths.



6- Expansion springs
Flat expansion springs are used for strapping various types of tanks and equipment that can expand and contract.





Elastomeric Insulation

Elastomeric insulation is suitable for industrial and civil applications that require the use of insulating materials and is used in the insulation of air conditioning, refrigeration, heating, plumbing, tanks, connections and air ducts and is available in both tubular and roll forms.

This type of product can be produced in various types, including uncoated, adhesive-backed and with reinforced aluminum coating with thicknesses of 130, 330 and 370 microns.

Pipe elastomer insulation

The length of the pipe elastomer insulation is 2 meters and its thickness is 9, 13, 19 and 5.25 mm. Pipe elastomer insulation is produced and supplied in diameters of 6mm to 114mm.

Roll elastomer insulation

Roll insulation with a width of 1000mm is ideal for insulating aluminum ducts, large surfaces and large diameter pipes, which is available in plain and adhesive form. By reducing the number of steps required for insulation, we will have easier installation and save time and labor costs.

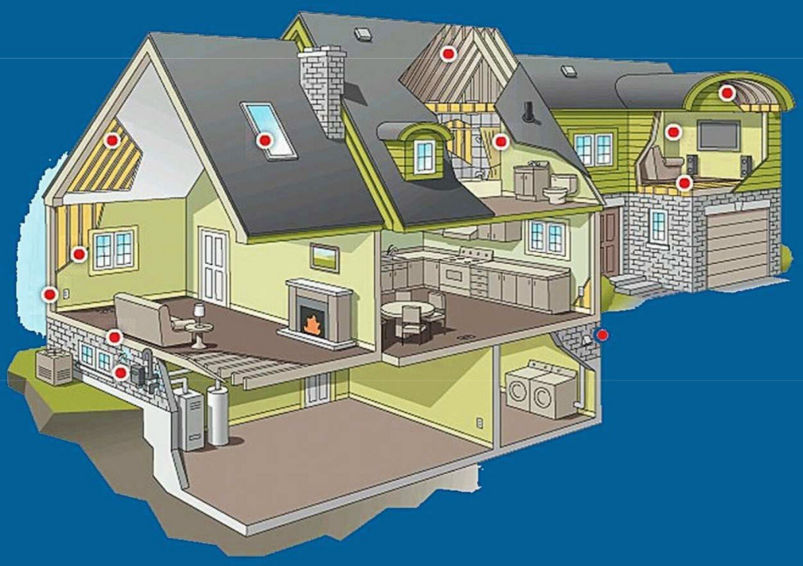
Elastomeric insulation is flexible and highly durable. The standard thickness for roll insulation is 6, 9, 13, 16, 19, 25, 32 and 50 mm.

Polyurethane

One of the materials available in the cold insulation industry in various industries is polyurethane insulation, which has a very low heat transfer coefficient and allows heat and cold retention up to 1200 to 2000. Polyurethane is created from the reaction of hydroxyl (polyl), isocyanate, permitted gases, permitted additives and fire retardants.

This material is mainly used in the oil, gas, petrochemical, pharmaceutical and food industries in the insulation of pipes and tanks, as well as in the construction industry, in the production of wall panels and metal ceilings to prevent heat exchange.

Polyurethane insulation is produced and implemented in block and board types, prefabricated pipes and injection molding.







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STANDARDS & CERTIFICATIDNS

ISO 12241:2022

ISO 9001:2015

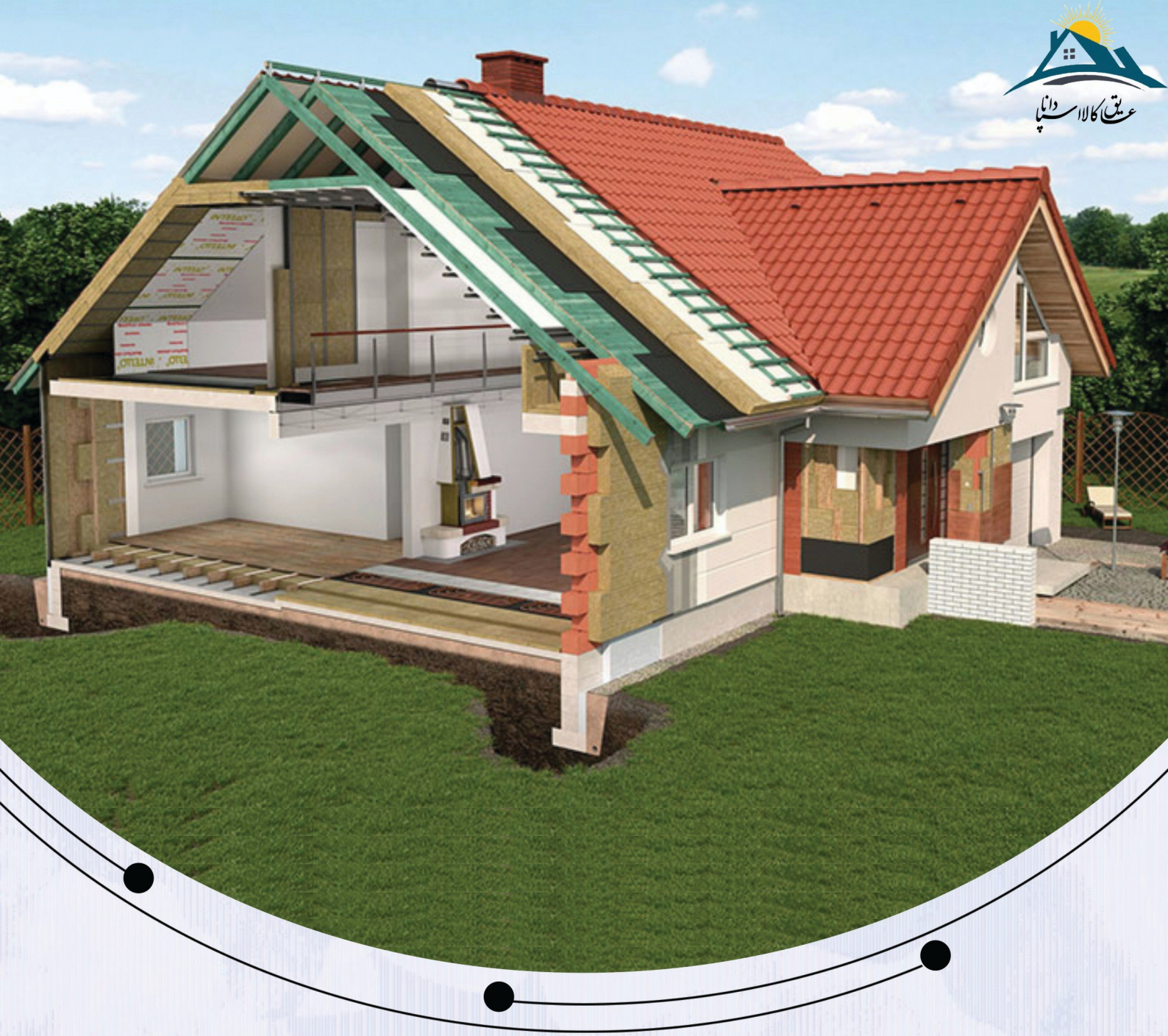
ISO 10004:2018

ISO IMS

ISO 45001:2018

ISO 29001:2020

ISO 14001:2015



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