

PRODUCT INFORMATION



MASTER BOARD



PRODUCT NAME

MASTER BOARD EXTRUDED POLYSTYRENE INSULATION

MANUFACTURER

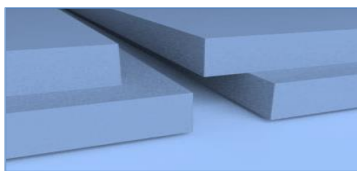
AL-MUSAHA AL-MUSHTARAKA CO.
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PRODUCT DESCRIPTION

MASTER BOARD is an insulation extruded polystyrene foam begin with solid polystyrene crystals. The crystals , along with special additives and a blowing agent , are fed into an extruder. Within the extruder the mixture is combined and melted, under controlled conditions of high temperature and pressure into a viscous plastic fluid. The hot thick liquid is then forced in a continuous process through a die, As it emerges from the die it expands to a foam is shaped , cooled and trimmed to dimension. This continuous extrusion process results in a unique foam product with a uniform closed-cell structure a smooth continuous skin , and consistent product qualities , qualities unequaled by other insulation types

FEATURES AND BENEFITS

- Closed and uniform cell structure
- High resistance to heat flow
- Resistance to water vapour diffusion
- Resistance to water absorption
- Uniform density distribution
- Very high compressive strength
- High aging resistance
- Long term performance
- Meets requirement of ASTM C 578



Ship Lap Edge Profile

Master Board

- Protect the climate
- Reduces energy consumption
- Gives greater comfort
- Enhances the value of buildings

APPLICATIONS

- Perimeter insulation of foundation walls
- Cold bridge insulation
- Cavity wall insulation
- Interior and exterior wall insulation
- Floor insulation
- Inverted roof system
- Pitched roof insulation
- Ceiling insulation
- Frost protection under roads and railways
- Parking Decks insulation
- Swimming pools and water storage tanks
- Sandwich panels insulation
- Refrigeration trucks
- Roof garden insulation

STORAGE & HANDLING

- Insulation boards once placed on the roof should not be left exposed. It is recommended that the insulation be immediately covered with the follow up system eg. paving slabs, screed, sheeting, etc. to avoid possible degradation.
- Unused materials should be stored in covered areas away from direct sunlight and ultra violet rays.
- Dust could settle on the face of the board if stored in dusty conditions. Wipe clean with damp cloth before installation.
- Soot from diesel smoke could be attracted to the product. If you envisage construction plant in the vicinity after board has been installed, then wipe board down with damp cloth in water softener solution available from us, before installation.
- Surface damage can be expected if product is not handled with care.
- Boards are marked indicating exposed face. Boards fitted with exposed faces on same side will result in smooth surfaces.

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TECHNICAL DATA

THERMAL PROPERTIES

The ability of insulation to resist heat flow is usually the principal consideration in comparing insulations. The material's resistance to heat flow is expressed by its R-Value. The higher the R-Value the greater the insulating power.

Master Board Rigid Thermal Insulation Board's Performance is essential for the proper design of a building's air conditioning systems and heating as well as for its ability to assist with moisture management. Buildings are kept cooler inside when it is hot outside and warmer when it is cold.

Master Board Rigid Thermal Insulation Board will help customers save energy and money, while improving the comfort of those inside and the durability of the building structure.

Residential and commercial buildings are faced with many choices when it comes to selecting the most effective form of insulation for roofs, walls or foundations.

Master Board Rigid Thermal Insulation Board maintains its excellent insulating power over time. When compared to other insulation products, is second-to-none.

MOISTURE RESISTANCE & MECHANICAL PROPERTIES

The superior moisture resistance of Master Board Rigid Thermal Insulation Board provides outstanding benefits for most construction and engineering applications. Fortunately, Master Board Rigid Thermal Insulation Board's superior moisture resistance is well established. Not only is polystyrene naturally hydrophobic (no chemical affinity for water), but its fine closed-cell structure and smooth continuous skin helps the foam resist moisture better than other types of insulating materials.

Master Board is easy to handle and available in a variety of sizes and compressive strengths to suit various application requirements.

These and other characteristics also make

Master Board Rigid Thermal Insulation Board the proven product choice for below grade insulation. It can be installed under the Roof membrane (conventional system) or over the membrane (inverted system) to protect it from damage and weather, parking decks, underground storage tanks and a number of special insulation applications.

CHEMICAL RESISTANCE & SOIL COMPATIBILITY

Master Board Rigid Thermal Insulation Board is recognised as a stable Extruded Polystyrene Foam Product and 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. Avoid from contact with concentrations of solvents, chlorinated hydrocarbons, gasoline and fuel oil.

Master Board Rigid Thermal Insulation Board is not affected by substances normally found in soil (i.e. acids, alkalis, bacteria etc.). It will not corrode, rot, or support the growth of mold, mildew or soil microorganisms. It has no food value and it will not support plant or animal life. **Sure-Roof** Rigid Thermal Insulation Board will last the life of most buildings in which it is used, provided it does not suffer from physical damage.

OUT DOOR EXPOSURE & STORAGE

Master Board Rigid Thermal Insulation Board is not affected by the weather and may be stored outside. Prolonged exposure to UV radiation in sunlight may cause the surface to become pale and dusty. This will have no significant effect on insulating value unless the surface is eroded, thickness is reduced. A protective covering with a bright colour should be used for extended out door exposure periods.

COMBUSTION PRECAUTIONS

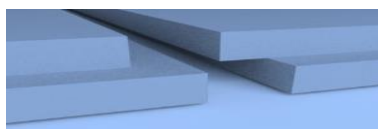
Like many construction materials, **Master Board** Rigid Thermal Insulation Board is combustible and may constitute a fire hazard if improperly installed. Although Master Board Rigid Thermal Insulation Board contains a flame retardant additive to inhibit ignition from small fire sources, it should not be exposed to open flame or other ignition sources during shipping, storage, installation or use.

DIMENSIONAL STABILITY

Dimensional stability is a measurement of a material's change in dimensions length, width and thickness, in response to various environmental exposure conditions.

The standard exposure conditions are usually elevated temperatures at both ambient and high relative humidity levels.

Master Board Thermal Insulation Board has an excellent dimensional stability, it is not affected by high temperature, humidity or direct sunlight.



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Pitched roofs

Partitions

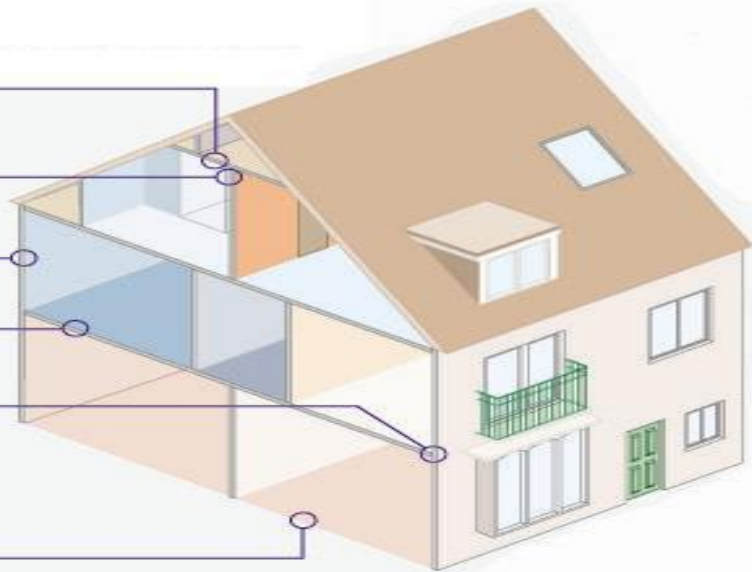
External walls

Internal floors

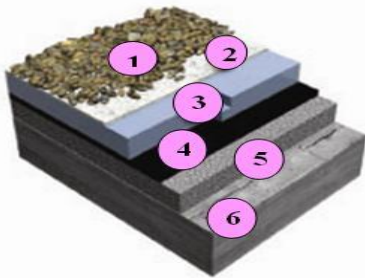
Cavity barriers

Exposed upper floors

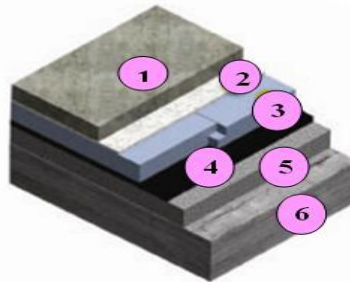
Ground floors



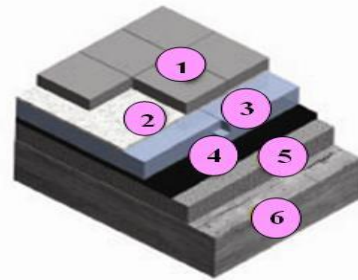
Inverted Roof



1. Gravel
2. Separation layer
3. Master Board
4. Waterproofing membrane
5. Screed to slope
6. Concrete deck

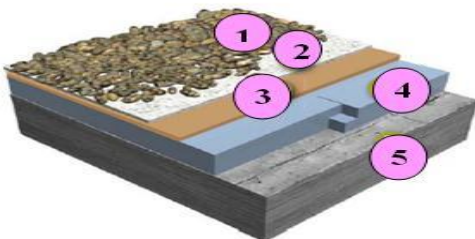


1. Cast in Situ concrete
2. Separation layer
3. Master Board
4. Waterproofing membrane
5. Screed to slope
6. Concrete deck



1. Concrete pavers
2. Separation layer
3. Master Board
4. Waterproofing membrane
5. Screed to slope
6. Concrete deck

Warm Roof



1. Gravel
2. Separation layer
3. Single - Ply membrane
4. Master Board
5. Concrete deck

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EXTRUDED POLYSTYRENE THERMAL INSULATION TECHNICAL DATA SHEET

Property	Standard	Unit	VALUE	VALUE	VALUE	VALUE
Density	DIN 53420	Kg/m ³	28-30	32 - 35	38 - 42	45 - 48
	ASTM D 1622	lbs/ft ³	1.8 - 2.0	2.0 - 2.2	2.4 - 2.6	2.8 - 3.0
Thermal Conductivity @40 ⁰ C Mean Temp.	ASTM C 177 or ASTM C 518	w/m.k	0.032	0.030	0.030	0.030
		Btu.in/ft2.hr.f	0.220	0.210	0.210	0.210
Thermal Conductivity @24 ⁰ C mean temp.		w/m.k	0.028	0.028	0.028	0.028
		Btu.in/ft2.hr.f	0.200	0.200	0.200	0.200
Compressive Strength @ 10%deformation)	DIN 53421	Kpa	262 - 275	310 - 448	413 - 482	500 - 700
		Kg/cm ²	2.67 - 2.95	3.16 - 4.57	4.21 - 4.92	5.09 - 7.13
(which occures first)	ASTM D 1621	Psi	38 - 42	45 - 65	60 - 70	72 - 101
Flexural Strength	ASTM C 203	Kpa	400 - 427	496 - 524	551 - 620	670 - 700
		psi	58 - 62	72 - 76	80 - 90	97 - 100
Dimensional Stability	ASTM D 2126	Volume %	2	2	2	2
Water vapour diffusion resistance factor	DIN 52615	μ	100 - 225	100 - 225	100 - 225	100 - 225
Water vapour Permeability	ASTM C 355	Perm. Inch	0.40 - 1.10	0.40 - 1.10	0.40 - 1.10	0.40 - 1.10
Water Absorption by Submersion	ASTM D2842	% by Vol	0.30	0.30	0.30	0.30
	DIN 53428		1.00	1.00	1.00	1.00
Capillarity			None	None	None	None
Linear coefficient of Thermal Expansion and Contraction		⁰ C ⁻¹ ⁰ F ⁻¹	70.10 ⁻⁶ 39.10 ⁻⁶	70.10 ⁻⁶ 39.10 ⁻⁶	70.10 ⁻⁶ 39.10 ⁻⁶	70.10 ⁻⁶ 39.10 ⁻⁶
Flammability	DIN 4102	Building Material Class	B1 Difficult to Ignite	B1 Difficult to Ignite	B1 Difficult to Ignite	B1 Difficult to Ignite
Surface Burning Characteristics Of Building Material	ASTM E84 (Class A)	Flame Spread	0 - 25	0 - 25	0 - 25	0 - 25
		Smoking Development	0 - 450	0 - 450	0 - 450	0 - 450
Sizes	Width 600mm Length 1250mm					
Thickness	20mm - 100mm					
Edge Profile	Ship Lap Edge					

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