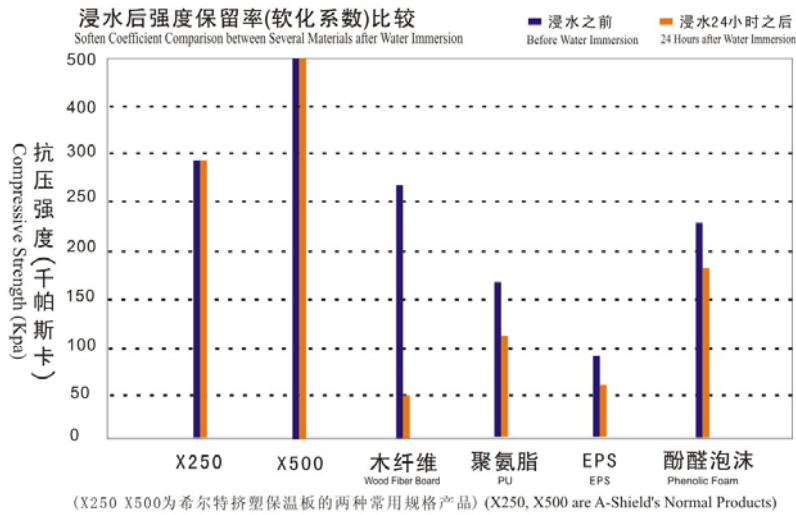


Extruded Polystyrene (XPS) Insulation Board

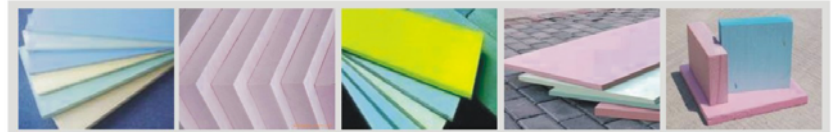


XPS foam board is mainly made from polystyrene resin, with a small amount of additives through heating and extruding system. It is a rigid foam with honeycomb structure. Shield XPS foam board is made by Hangzhou Shield Energy-saving Insulating Materials Co., Ltd. It is of high performance XPS foam board, and with nearly 100% closed-cell structure, with many advantages including light-weight, high pressure resistance, water resistance, low thermal conductivity, dimensional stability etc.



Main specification of Shield XPS foam board

项目 Item	单位 Unit	性能指标 Property Index										
		带表皮 With skin								不带表皮 Without skin		
		X150	X200	X250	X300	X350	X400	X450	X500	X700	W200	W300
压缩强度 Compressive strength	kPa	≥150	≥200	≥250	≥300	≥350	≥400	≥450	≥500	≥700	≥200	≥300
吸水率, 浸水 96h Water absorption, immersion 96h	%	≤ 1.0								≤ 2.0	≤ 1.5	
透湿系数, 23 ° C ± 1 ° C , RH 50% ± 5% Water vapor permeability, 23 ° C ± 1 ° C , RH 50% ± 5%	ng/(m.s .Pa)	≤ 3.5	≤ 3.0			≤ 2.0			≤ 3.5	≤ 3.0		
平均温度 10 ° C 时导热系数 Thermal conductivity, at average temperature of 10 ° C	W/(m.K)	≤ 0.028	≤ 0.027			≤ 0.028			≤ 0.033	≤ 0.030		
平均温度 25 ° C 时导热系数 Thermal conductivity, at average temperature of 25 ° C	W/(m.K)	≤ 0.030	≤ 0.029			≤ 0.030			≤ 0.035	≤ 0.032		
稳定性, 70 ° C ± 2 ° C 下, 48h Dimensional stability, 70 ° C ± 2 ° C 下, 48h	%	≤ 2.0	≤ 1.5			≤ 1.0			≤ 2.0	≤ 1.5		
燃烧性能 Combustion performance	级 grade	B 1 级		B 2 级		B3 级						



Main specification of Shield XPS foam board:

Color: Pink(normal color),blue,other color is optional.
 Compressive strength: 150kPa ~ 700kPa
 Length: 1200m ~ 6000mm width: 600m ~ 1350mm thickness: 5mm ~ 140mm
 Edge treatment: flat(SS) type, Overlap joint(SL)type, TG tenon type
 Surface treatment: with skin(smooth), without skin(roughening), line groove surface, special embossing surface
 Main Characteristics of Shield XPS foam board

Shield XPS Main Characteristics

● High compressive strength

Shield XPS insulation board is not only light-weight, its intrinsic mechanical strength makes it even bear higher load pressure in residential, commercial and industrial buildings roof, ground, floor and wall, to provide the solution to the intergration of thermal insulation and structure.

● Water-resistance

Shield XPS insulation board is nearly 100% closed cell structure. Its water absorption in volume is less than 0.5%. No matter it is used under building floor, external side wall of basement, or in the inverted roof, Shield XPS foam board's R-value won't decrease due to the low water absorption and won't make qualitative change even in long-term immersion in water or suffering from repeated freeze-thaw cycle.

● Flexible Usage

Shield XPS insulation board, with tight closed-cell structure, can be easily cut into different shapes on the installation spot. It is facilitate to the abnormal joints of practical buildings, and can be used as insulation filler or in making variety of prefabricated units, such as refrigerated truck bodies, insulation doors etc..

● Light-weight

Shield XPS insulation board is light weight, low density(30-40kg/M3). With suitable specification, it is convenient to install on th spot, easy to carry and install.

● Excellent thermal resistance

A Shield XPS insulation board is with low thermal conductivity less than 0.028W/m.K. Its stability and low thermal conductivity make it become the reliable insulation material for building roof, floor, or external wall. Building with thin Shield XPS insulation board can reach the goal of the implementation of the three-step energy saving strategy(saving 65% energy).

● Recyclable

Shield XPS insulation board, a kind of foam plastic material, though can't naturally degrade, it is 100% recyclable and absolutely can reach the environmental protection.

● Anti-microbial corrosion

Shield XPS insulation board, without biodegradation, will not be microbial erosion, rot or mildew and can be widely used in the external wall of the basement, planting roof and even can be buried underfloor for long time.

● Anti chemical corrosion

Shield XPS insulation board won't be corroded by most common chemicals such as acid, alkali, salt, water-based emul sion paint, cement, asphalt etc..

Main application of Shield XPS insulation board:

Traditional building shun home roof (Insulation layer is under waterproof layer)
 Buildings inverted roof(Insulation layer is above the waterproof layer)
 Buildings pitched roof(Warm attic roof)
 Buildings external wall(sandwich wall, external insulation, interior insulation, and Big modulus built-in)
 Basement undertile floor, side wall and top roof plate
 Roadbed of road, railway, airport runway
 Refrigerated truck body
 Insulation sandwich door
 Insulation composition board
 Air duct board
 Cold room insulation board

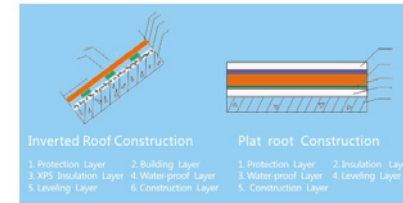
Main restriction application of Shield XPS insulation board:

Working temperature: -50 °C ~ +75 °C . It can't directly touch parts with more than 75 °C
 It can't be long term burnt by ultraviolet radiation. It can't be exposed outside.
 It can't directly touch with solvents(benzene, methame) paint or adhesive, gasoline, fuel oil,heavy oil, polyster resin and other chemicals.
 Combustible product: Keep it away from open flame or any form of fire when storing, handling, installing and applying.

1. Inverted Roof Insulation

The structure of inverted roof insulation is to put shield XPS insulation board on the top of roof water-proof layer to avoid the water-proof layer from the damage of disparity temperature,ultraviolet radiation or the human damage. It is not only thermal insulation,but also the protection of long-term leakage proof.

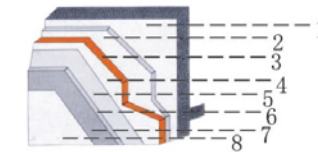
Inverted roof insulation can be used in the renovation of old building's roof by putting the XPS board directly on the old roof as a kind of thermal insulating material.



2. Wall Insulation System of the Building



Most of the heat energy of building is lost through wall.A-shield XPS insulation board is not only heating insulation for various type of structure wall,but also can strengthen the durability of the wall. Using Shield XPS insulation board to decorate the wall makes surface smooth.Meanwhile,it can be the basic material of cementations coating.



3. Building Ground Floor

Usually 15%-20% heat energy is lost through the floor. Therefore, it becomes very important to make heating insulation work to the floor in order to avoid condensation frosting. Making heating insulation of floor can make a warm and comfortable environment for the owner.

At the same time, it is also very important to protect the floor from the vapor permeance and corrosion.



4. Cold Room Construction

Shield XPS insulation board's excellent moisture-proof and high compressive strength stands out its advantages in the project of cold room construction. It can be used in all sections, including the floor ,internal and external wall and roof or ceiling etc.

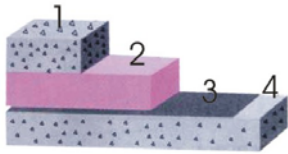
A.The thermal insulation properties make it remain immutable even in harsh working condition which can ensure the high efficiency of cold room instruction.

B.It can prevent the impact of condensation frosting for its closed-cell honeycomb structure.

C.Not easy compression creep ensures the normal use of structural features. Applying Shield XPS insulation board can provide an excellent support.



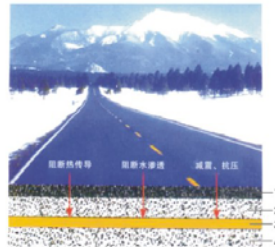
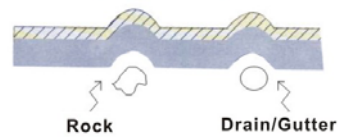
1. Reinforced Concrete Cement Board
2. Shield XPS Insulation Board
3. compartment Vapor Layer
4. Reinforced Concrete Ground



5. Ground Frost Control

In cold areas, variety of civil engineering applications face the problem of ground frost, which will lead the roads, railways, airport, runways to be rugged , under ground pipes shifted, even damaging the building construction structure. To put the Shield XPS insulation board appropriately under the roaded layer can efficiently control the ground frost; greatly reduce the quantity of land filling which can ensure the road surface and underground pipes work in normal to extend service life.

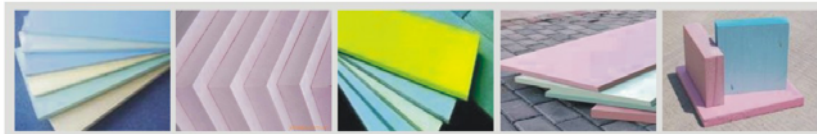
Road is Damaged for the Ground Frost



Highway Construction in Permafrost Zone

1. Heated Black Pavement
2. Roadbed
3. Shield XPS Insulation Board
4. Permafrost Layer

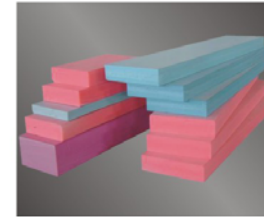
Shield XPS insulation board can prevent the permafrost layer from melting to make stable roadbed



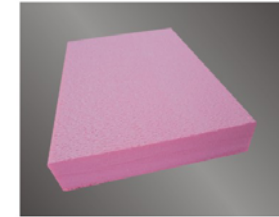
XPS Insulation Board

Shield XPS insulation board, with its super property, is widely used for insulation on wall, roof, floor, air duct, cold room, warehouse, road frost control, door etc.....Especially, our super high compressive strength (700-800kpa) XPS board is widely used in the construction of express highway, rail road, airport, harbor etc.....

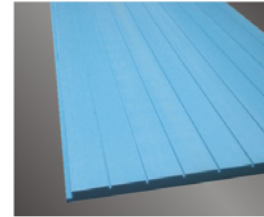
Shield XPS foam board can be made into roughening surface, embossing surface, grooved surface. For the edge, we can make SL overlap type, TG tenon -groove type, RC rain-groove type etc.



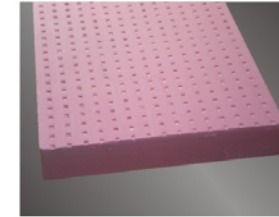
Smooth Surface



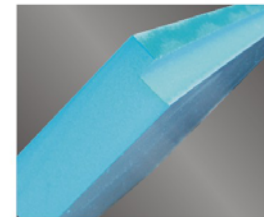
Roughening Surface



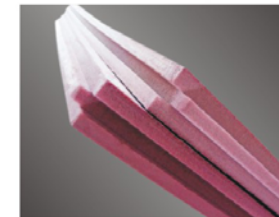
Grooved Surface



Embossing Surface



SL Overlap Edge



TG Tenon Edge