



**BITUMAT**  
بيتومات



**NRCA MEMBER**



**ISO CERTIFIED**

## **BITUTHERM**

Extruded Polystyrene  
Thermal Insulation Board

BITUMAT BITUTHERM is produced in Dammam, Saudi Arabia using the latest computerized state of the art technology. Bitumat Bitutherm Extruded Polystyrene panels are specially formulated to suit the very harsh Middle Eastern climatic conditions. BITUMAT BITUTHERM is an intelligent way to insulate a building.

Bitumat uses the most sophisticated German know how to ensure that the product is consistent, water resistant, reliable and able to maintain its high R value for long periods. BITUMAT BITUTHERM boards are made in a continuous skin surface & developed into a closed cell structure.

The blended polystyrene polymer compound is heated. Put through an extrusion process & exposed to normal atmospheric conditions so that the material will expand. XPS is available in several different densities and has an R-value at 75°F (24°C) of about 5 per inch (25mm) of thickness.

BITUMAT BITUTHERM can be used for Roofs, Walls or even Basement. Some salient features of Bitutherm are:

- Due to closed-cell and homogeneous structure high resistance to water absorption thus ensuring that the product is not only dimensionally stable but capable of maintaining its K Value for long periods.
- Desirable resistance to vapor diffusion so that breathability is maintained.
- Sufficient strength against heavy loads.
- Excellent K and R values.
- Long-term high insulation efficiency.
- Resistance to ageing and rotting.
- High resistance to thermal cycling.
- Non Toxic and non hazardous to humans and environment.
- Eliminates thermal bridging with its tongue and groove edges.
- Available in various types for roofs, slabs, and walls.
- Very light in weight with no additional load on the building.

### **GENERAL DATA**

Nominal Board Length : 1250 mm.  
Nominal Board Width : 600 mm.  
Nominal Thickness : 50, 75, 100 mm.

### **APPLICATION**

#### **ROOF**

Bitumat BituTherm (R) can be very conveniently installed on a roof. In classical as well as Inverted roofs. It can be used with most roof membranes if appropriate precautions are observed. Once the waterproofing membrane has been installed and flood tested, the Bitumat BituTherm insulation boards can be installed loose laid or spot bonded to the waterproofing membrane. In protected roof membrane assemblies, ballast is applied after Bitumat BituTherm board roof insulation has been loose-laid over the roof membrane.

The amount of ballast will vary with the project's wind-uplift resistance requirements and thickness of the Bitumat BituTherm roof insulation board.

#### **WALLS**

Bitumat BituTherm (W) can be used as wall insulation also. It can be applied in several ways including as a sandwich application.

#### **FLOORS**

Heavy duty Bitumat BituTherm (F) can be used for floor applications also. The higher density and compressive strength makes it ideal for such applications.

#### **MULTIPLE-LAYER INSULATION**

The recommended specification is for multiple-layer insulation. Bitumat urges double-layer application, especially when the total required thickness of XPS insulation is more than 2 inches (50 mm). Cover boards are considered to be components of a multiple-layer insulation assembly.

# BITUTHERM

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XPS01 10-K R-00 00

## TECHNICAL DATA

S/N	Characteristics (Typical Values)	Test Method	Unit	Bitutherm R	Bitutherm W	Bitutherm F
1.	Density	DIN 53420 ASTM D 1622	Kg/m <sup>3</sup> lb/ft. <sup>3</sup>	32-35 2.0-2.2	28-30 1.7-1.9	40-45 2.5 - 2.8
2.	Thermal Conductivity	DIN 52612 DIN 52616 ASTM C 518-98	W/m <sup>2</sup> ·k Btu.in / h.ft <sup>2</sup> .°F	0.028 0.20	0.029 0.21	0.026-0.027 0.18-0.19
3.	Compressive Strength at 10% deflection	DIN 53421 ASTM D 1621-04	Kpa psi	300 43	210 30	500-700 70-100
4.	Water Vapour Diffusion resistance factor	DIN 52615	μ	100-200	100-200	100-225
5.	Water Vapour Permeability	ASTM C 355-64 ASTM E 96 00	Perm/inch	0.4-0.6	1.0	0.4-0.6
6.	Water Absorption by Submersion	DIN 53428 ASTM D 2842 (±1% by Vol. Precision)	% by Vol. % by Vol.	0.2 ≤1.0	0.2 ≤1.0	0.2 <1.00
7.	Linear Co-efficient of Thermal Expansion	DIN 52328	°C °F	70x10 <sup>-6</sup> 39x10 <sup>-6</sup>	70x10 <sup>-6</sup> 39x10 <sup>-6</sup>	70x10 <sup>-6</sup> 39x10 <sup>-6</sup>
8.	Fire Classification	DIN 4102	Building Material Class	B2	B2 too difficult to ignite	B2 too difficult to ignite

The information in this Technical Data Sheet is given to the best of our knowledge. However, as the product is often used under conditions beyond our control, we cannot guarantee but the product itself. Bitumat Bitutherm testing is being upgraded and is being currently tested in various independent laboratories for more accurate data.

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# SYNROOF HI-BUILD

Premium Quality Acrylic Waterproof Coating

## GENERAL

1. BITUMAT SYNROOF HI-BUILD, an elastomeric, premium quality acrylic coating, may be applied by brush, roller, squeegee or spray equipment depending on site conditions. To spray, select a nozzle size of at least 0.028 in.; first checking the spray equipment to ensure suitability.
2. All surfaces to be coated must be clean, dry, free from dust, dirt, oil and other contaminants.
3. Coverage varies depending on factors such as type and quality of substrates i.e. surface regularity and application method.
4. Apply in separate coats, each at a right angle to the one before. Using a different colour for each coat helps ensure consistency of cover.
5. The final coating thickness to be achieved depends on the requirements of the individual roof. A final dry film thickness between 0.5 and 1.5 mm may be built-up.

## PREPARATION

Surface preparation is a very vital issue and this influences the integrity of the waterproofing system. Hence, care must be exercised when the preparation is done. This is very important when re-roofing over an existing old roof.

Instructions should be followed strictly.

1. All surfaces to be smooth, clean, dry and free from dust, rust and laticence.
2. Concrete and cementitious substrates must be well compacted with a wood float type finish, be at least 28 days old and well dried. Uncured concrete surface will have moisture trapped inside and will turn gaseous when temperature rises. This will lead to blistering and even delamination from the surface.
3. Wooden or metal panels to be firmly fixed in position.
4. Terrazo roof tiles: Clean and repair damaged joints. Ensure that the tiles are firmly grouted. Remove all loose material.
5. Metal Roofs: Wire brush to remove moss, mildew, loose paint, and rust areas, then clean surfaces with a broom before priming. High pressure water brooming may be used, if necessary.

## PRIMING

1. Old asphalt surfaces and bituminous roofing felt. Cut felt blisters crosswise, dry and rebond with suitable adhesive. Allow to cure. Then prime cleaned surface with SYNROOF HI-BUILD diluted with 20% water.
2. Concrete & Terrazo tile roofs. Following removal of all loose and other alien material, prime with Synroof Hi-Build diluted with 20% water. Greater dilution may lead to weaker bonding with the substrate.
3. Metal roofs. Clean and remove all rust and apply a rust inhibitive primer. Follow this by applying metal primer to all corroded surfaces.
4. Other roofs. Should the roof be affected by algae or fungal growth, use a stiff bristled broom to remove this before treating the cleaned surface with a suitable fungicide, and apply primer coat by diluting BITUMAT SYNROOF HI-BUILD with 20% water.

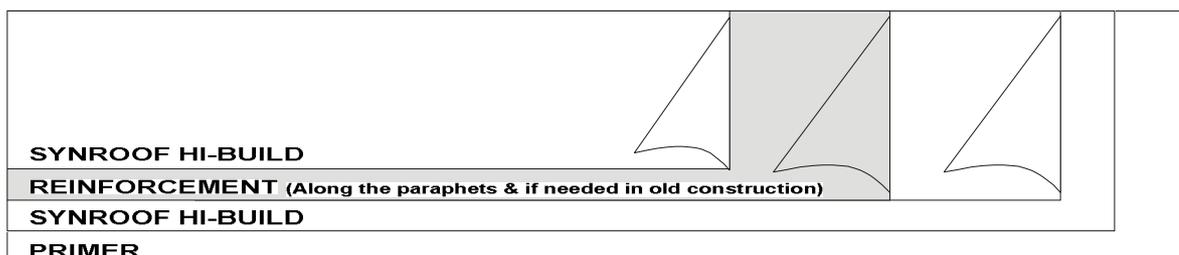
## APPLICATION

1. Primer must be completely dry before the first coat is applied.
2. BITUMAT SYNROOF HI-BUILD may be applied by soft brush, roller or spray gun.
3. For spraying, BITUMAT SYNROOF HI-BUILD may be slightly diluted with water. To great a dilution may lead to sedimentation and blocking of spray gun.
4. Apply two coats, each at the approximate rate of 0.8 kg/sqm. (excluding the BITUMAT SYNROOF HI-BUILD prime coat).
5. Where substantial movement is anticipated in the substructure, a mesh reinforcement (60/80 gsm thermobonded polyester as part of a "sandwich" membrane system is used. Lay this mesh in the wet first coat before application of subsequent coats. All detailing to pipes, upstands, drains, projected line etc. should be mesh re-inforced in this way.

## CURING

Allow 24 hours between coats. A final curing time of 48 hours is adequate at normal working temperatures. Ensure curing is complete before laying thermal insulation boards, mechanical protect and other coverings.

*Low temperatures and high atmospheric humidity will slow down the curing rate, and vice versa.*



# SYNROOF HI-BUILD

## MECHANICAL PROTECTION

Accessible roofs. The installed Bitumat Synroof Hi-Build can either be covered by insitu concrete screed or by thermal insulation. Place a non-woven polyester separation layer over the acrylic waterproofing membrane followed by appropriate thermal insulation boards. Then lay kraft paper or polyethelene sheets as separation layer over the insulation boards and place the topping screed of 4 to 5 cms thickness or suitable cement tiles.

Non-accessible roofs. Place a non-woven polyester separation layer over the acrylic waterproofing membrane followed by the insulation boards. Cover the insulation with another layer of non-woven polyester separation layer and place 15/30 gauge washed gravel to a minimum depth of 5cm. For thicker insulation boards, the gravel depth should be at least equal to that of board thickness.

## PRECAUTIONS

1. Bitumen or asphalt roof surfaces to receive a coating of BITUMAT SYNROOF HI-BUILD should be totally dry. Trapped moisture can lead to severe problems later.
2. Never apply if rain is imminent.
3. Application of thick coat at temperature below +5°C may result in incomplete film formation, with reduced elasticity and the possibility of crack forming.
4. BITUMAT SYNROOF HI-BUILD is resistant to light foot traffic. However, heavy traffic, high heel shoes, furniture, etc. will cause damage. In these cases the membrane should be protected by tiles, slabs, etc.

5. Do not clean the cured BITUMAT SYNROOF HI-BUILD coating with brooms that have hard bristles. These may cause damage.
6. Do not use BITUMAT SYNROOF HI-BUILD on areas that will be constantly submerged in water.

## CLEAN-UP

As a good roofing practice, flush all hoses, equipment and tools with water immediately after use.

## PACKING

- 20 kg. metal pails, others on request.

## STORAGE

- Keep away from direct sunlight and preferably store below 30°C and above +5°C.
- Protect from frost.
- When stored in unopened containers, expect a minimum shelf life of one year.

## HEALTH AND SAFETY

1. Toxicity - non toxic and odourless.
2. Flammability - Non flammable when wet. The cured film will burn but is not a fire hazard.
3. Skin contact - Prolonged contact is to be avoided. Use of a barrier cream or gloves will protect sensitive skins.
4. Cleaning - Remove with water when wet and proprietary hand cleaner when dry.
5. Medical assistance - This should be sought if BITUMAT SYNROOF HI-BUILD is ingested or comes into contact with eyes. Eyes should be rinsed with copious amount of clean water.
6. Ventillation to the working area is desirable.

## TECHNICAL DATA

Property	Typical Value	Test Method
1. Solids Content, %	64 (+/-1)	ASTM-D-1076
2. Viscosity, CPS	50,000-70,000	Brookfield
3. Density, Kg/l	1.30 (+/0.05)	ASTM-D-1475-16
4. Application Temp, °C	+5 (minimum)	In-House Test
5. Curing Time, at 25°C	Approx. 8 hr. for touch dry	In-House Test
6. Service Temperature °C	Approx. -5 to 100	In-House Test
7. Tensile Strength, N/CM <sup>2</sup>	480	ASTM-D-412
8. Elongation, at Break %	440	ASTM-D-412
9. Hardness, Shore A	68	ASTM-D-2240
10. Permeability	Pass	ASTM-E-398
11. Dry Peel Adhesion, lbs/sq. in.	65	ASTM-C-297
12. Flexibility	No cracking of film after 1000 hrs. accelerated weathering conditions and flexed 180 degrees	In-House Test
13. UV Resistance	2000 hrs. No deterioration, no color fade	ASTM-D-822
14. Colours	Satin White & Grey, other colors by request	
15. Coverage	For 1 mm thick dry film allow approx. 2kg/m <sup>2</sup>	

\* Incorporation of a reinforcement considerably increases certain dry film properties.

The information given in this Technical Data Sheet reflects typical median properties based on laboratory test, and practical experience; subject to the tolerance levels of UEAtc directives. However, as the product is often used under conditions beyond our control, we can't warrant but the product itself.

THIS PUBLICATION AUTOMATICALLY SUPERSEDES ALL PREVIOUS PUBLICATIONS RELATING TO THIS PRODUCT.

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