



BituNil Highlights

Special Interest Articles:

- Below Grade moisture movement.
- Protected membrane roofing.
- XPS and Sustainability.

Individual Highlights:

- BATIMAT 2009 1
- Big 5 Show-2009 2

News from Egypt's leading Modified Bitumen Membranes Manufacturer-BituNil S.A.E.

BATIMAT PARIS 2009: The World Leading Construction Show



BITUNIL Stands Out with its Professional Image

BATIMAT is the place of choice where construction manufacturers choose to launch their technical solutions and innovations. Every other year the event brings together the most competitive products, equipment, and services in the world, and attracts the largest number of international professionals. BituNil's participation and effective presence was the highlight of the year's marketing activities. Its stand was one of the main attractions to visitors targeting the roofing industry in the show. In addition to French, and

North African large percentage of stand visitors (almost 55%), it received many others from Italy, Germany, China, Korea, Spain, Brazil, Denmark, Belgium and Canada. Many of the internationally recognized manufacturers in the roofing industry took the time away from their stands to visit and inquire about BituNil products range. The event brought about new opportunities, for BituNil to enter new markets and expand its exports activities.



The BIG 5 SHOW Exhibition- DUBAI 2009



Sheikh Hamad Bin Rashid Officially opens the Big 5, 2009



The Largest Construction Show in the Middle East

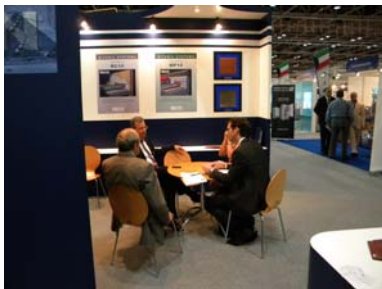


Photo courtesy
Thebig5show.com

The show grounds for the year 2009 spanned an area of 40,000m². More than 3000 exhibitor showcased their products representing 22 national and 52 international pavilions, presenting the major exporting countries of the world.

The show is known to be an unmatched platform for engineers, contractors, and developers to source and specify the latest building and construction

products and services. BITUNIL's participation reflected the rapid development achieved over the past few years, and drew the attention of visitors as well as exhibitors.

Despite the unfortunate timing of the event being so close to Al ADHA feast, largely impacting the numbers of visitors on the last day of the

event, BituNil had managed pre-scheduled meetings at the event with its key accounts in the Gulf Area from Qatar, Oman, and Kuwait, and its key accounts in India.

The event also set the opportunities to fulfill our ambitious plans to enter other new markets in the GCC.

Large construction projects in the UAE, and the Gulf area were highlighted, giving us the chance to make future plans for the best way to serve the area.

Below Grade Moisture Movement



Surrounding soils around foundations are a significant source of moisture.

A successful design of below grade building envelop will accommodate different moisture sources, and moisture travel mechanisms.



Sources of moisture are limited to the following:

1-Liquid water flow

In the form of rising water table, irrigation/ sprinkler systems, or failed drainage systems.

2-Capillary action

Like a sponge soaking

water, moisture will travel from areas of high water concentration to areas of low concentration. Although slow in action, large amounts of moisture will migrate over time. Fine grained soils will draw water considerable distances, compared to course gravel.

3-Vapor diffusion

With vapor always present in surrounding soils, it tends to move from the wetter exteriors into the drier building interiors through porous concrete foundations walls and floors.

“A successful design of below grade building envelope will accommodate different moisture sources”

Below Grade Waterproofing Guidelines

To prevent the three mechanisms of moisture movement into below grade structures, a proper design shall include:

1-Preventing vapor diffusion.

A high quality damp proofing membrane/ coating is specified to prevent vapor diffusion through exteriors of foundations walls and under floor slabs. The materials are designed and tested to ensure minimal water vapor passage through it.

2- Minimizing Capillary action

Achieved through any/ a combination of the

following:

-Application of crushed stone layer used as a capillary break, with a proper vapor barrier installed on top.

-Grading of foundation soils, and providing positive slope away from the structure.

-Incorporating a drainage system to efficiently collect below grade water and dispose of it away from building site will prevent building of water head against walls, and thus minimize capillary action.

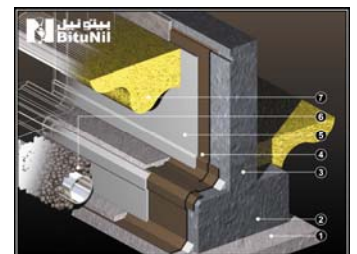
3-Preventing liquid water flow through structure.

This is achieved through installing a high performance W.P. svstem

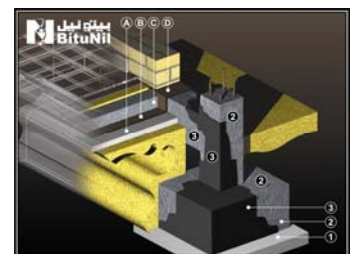
to withstand hydrostatic forces and maintain long term performance.

BituNil offers a wide range of torch applied and self-adhered high performance APP and SBS modified bitumen membranes with Superior mechanical properties to accommodate structural movements, and withstand tough site conditions.

Among its high performance products are the APP modified membranes BITUBOND and BITUTER, And the SBS modified membranes BITUFLEX and BITUGUM. And the self-adhesive membrane NILOSTICK.

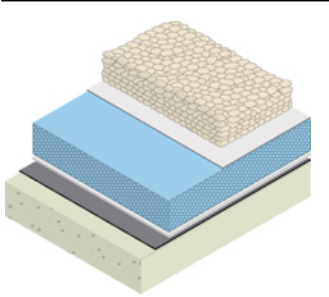


Waterproofing Of Retaining walls



Damp-proofing of Footing

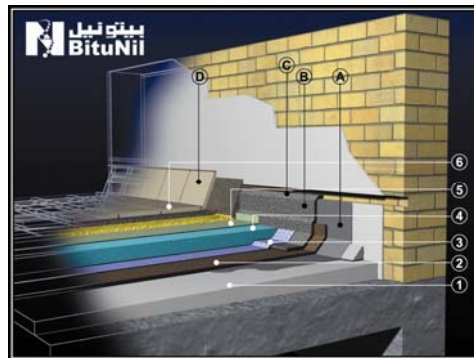
Protected Membrane Roofing Systems



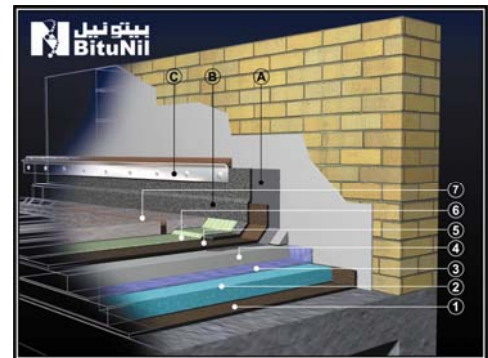
In a protected roofing system, also referred to as "inverted-roofing-membrane assembly", the thermal insulation layer is placed on top of the roofing membrane, protecting it as well as the building interiors from extreme temperature fluctuations. As opposed to conventional roofing where the waterproofing membrane is on top of the insulation layer, and

insulation is typically mechanically fastened or fully adhered to the roof deck. For protected membrane roofing the selection of type of insulation is critical, as it must have the needed technical characteristics, especially water resistance, to properly function in this type of configuration. The insulation of choice

for such application is Extruded Polystyrene (XPS) where as Expanded Polystyrene (EPS) and Polyisocyanurate, used in conventional roofing systems, do not have the necessary water resistance properties, and over time will absorb water and their R-value will degrade.



Protected Membrane Assembly



Conventional Roofing System

Advantages of Protected Membrane Roofing

Placing the membrane below the insulation offers a number of advantages over a conventional roofing design, such as:

1-The waterproofing membrane is protected from the dramatic effects of seasonal and daily temperature extremes, especially with dark, heat absorbing membranes, such as bituminous membranes. The protected system keeps the roof deck at relatively constant temperature.

2-Protected membrane roofing also provides protection against physical damage as the XPS insulation is

characterized with its high compressive strength, and combined with roof ballast it helps withstand the construction traffic.

3-Placement of thermal insulation on top of waterproofing also protects it from ultra violet radiations which degrades and prematurely ages the membrane.

The result is prolonged membrane service life.

4- The additional option of placing insulation on top of waterproofing offers design flexibility, and accommodates high performance designs.

**“Protected Roofing:
A Better Engineered Roofing
System”**

XPS Thermal Insulation & Sustainability

The definition of a **sustainable low-slope roof**, as per proceedings of a workshop at a USA national laboratory facility is: "**A roofing system that is designed, constructed, maintained, rehabilitated, and demolished with an emphasis through its life cycle on using natural resources efficiently and preserving the global environment.**"

Keeping definition in mind, XPS thermal insulation has the following sustainability benefits:

1-Reducing energy usage to optimize energy performance.

Heat loss is minimized for cold climate areas, while in warmer climates the air conditioned space is kept contained, eliminating uncontrolled energy loss, which leads to un-necessary expenses and overburden of HVAC systems. The energy savings reduce heat island effect, and have a positive impact on humans and wild life habitats.

2-Minimizing construction waste.

As buildings may be demolished or may lend themselves to different uses, old XPS can be removed, stored in a dry place, and re-used. All of which results in reduction of construction waste and landfill.

With its thermoplastic properties, it can also be re-cycled into new polystyrene products, such as plates, and packing material. Unlike Polyiso which can not be recycled due to its thermo set properties, nor can it be re-used due to its typical mechanical fixation to roofs which leaves it full of holes.

3-XPS prolongs membrane service life.

With its long term R-value coupled with high durability and excellent moisture resistance, The XPS effectively protects the waterproofing membrane prolonging its service life, which results in cost savings to the owner.

4-It allows for design innovation.

As it offers flexibility and diversity of possible designs.



Diverse Design Possibilities



Diverse Applications

The XPS Insulation Boards: Now at BituNil

To serve BituNil's objective of providing an integrated service to our clients, BituNil is expanding its product range to include complementary products to the roofing industry.

BituNil now carries the Extruded Polystyrene thermal insulation boards.

A high performance product, developed more than 50 years ago. Its closed cell structure offers a number of special advantages such as:

- 1- Long term high insulation value.
- 2- Excellent mechanical strength.
- 3- No capillary, high moisture resistance
- 4- Light weight, easy to handle.
- 5- Resistant to rot and deterioration.
- 6- Clean, odorless, and non-irritant to skin.
- 7- Easy to cut with simple tools



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Guide lines for Installation of XPS

-XPS Thermal insulation boards are loose laid on top of waterproofing in a protected membrane roofing system. .

-Insulation boards are preferably applied in two layers, staggered in order to prevent thermal bridging.

-XPS is unsuitable for direct application over a metal deck, since in the

event of internal fire it will disintegrates and release heavy toxic fumes.

-XPS insulation is incompatible with coal-tar and PVC and shall not be applied in direct contact with any of them.

-XPS can not withstand bitumen high temperatures, and thus will not accept direct torching or hot mopping of

W.P. membranes.

- Because of XPS closed cell structure and excellent resistance to water absorption, it is the insulation of choice for protected membrane roofing.

- Roofing system with XPS shall be secured in place with a ballast of gravel, crushed stone, roof tiles, concrete pavers, or a green roof.

Other XPS Construction Applications



To external walls



To Pitched Roofs



To Residential Floors

About Our Organization...

The Nile Waterproofing Materials Company S.A.E., **BITUNIL**, is the product of experience, prudence and knowledge.

The BITUNIL plant is built

over an area of 20,000 square meters in Al Max Alexandria Port. The production plant is state of the art for the fabrication of modified bitumen membranes, and is fully

equipped to manufacture quality products that comply with internationally recognized standards.

We're on the Web!

See us at:
www.bitunil.com