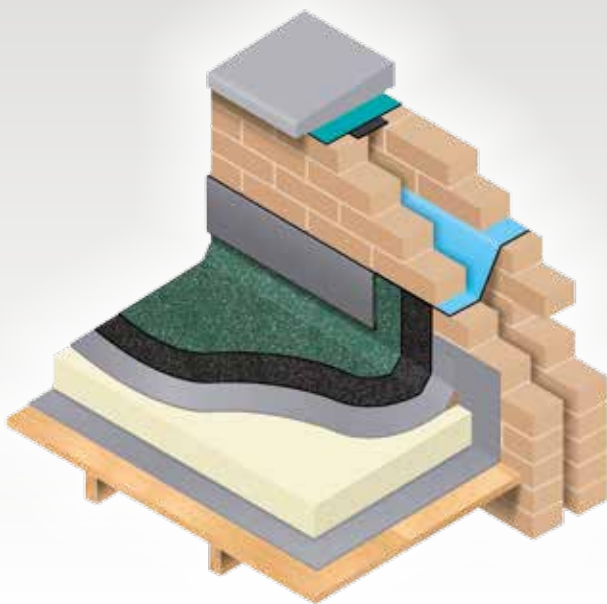


Xtra-Gard

Flat Roofing Systems

Product and Systems Overview



Overview of Xtra-Gard Flat Roofing Range

The Xtra-Gard range of waterproofing membranes has been developed to provide a comprehensive range of products to suit all applications; from traditional Shed Felt for basic DIY application through to High Performance systems for the professional roofer.

Product Name	Nominal Roll Size & Weight	Base	Finish	Description	Page
SBS Torch-On Capsheets					
Xtra-Gard Flexitorch P	Mineral Capsheet 1m x 8m 40kg Sanded Capsheet 1m x 8m 36kg	Polyester	Green, Blue/Grey, Brown, Charcoal Mineral Granules & Sand	Premium SBS mineral & sand surfaced torch-on grooved capsheets with over 20Yr Life expectancy	4
Xtra-Gard Flexitorch 20	Mineral Capsheet 1m x 8m 40kg	Polyester	Green, Blue/Grey, Brown, Charcoal Mineral Granules	SBS torch-on capsheet is a high perf. polyester reinforced, SBS modified bitumen membrane with a 20yr guarantee	5
Xtra-Gard Flexitorch S	Mineral Capsheet 1m x 8m 36kg Sanded Capsheet 1m x 8m 32kg	Polyester	Green, Blue/Grey, Brown, Charcoal Mineral Granules & Sand	SBS mineral & sand surfaced torch-on capsheets with over 15yr Life expectancy	5
Xtra-Gard Flexitorch E	Mineral Capsheet 1m x 8m 36kg Sanded Capsheet 1m x 8m 32kg	Polyester	Green, Blue/Grey, Brown, Charcoal Mineral Granules & Sand	Cost effective SBS mineral & sand surfaced torch-on capsheets with over 10yr Life expectancy	6
SBS Torch-On Underlays					
Xtra-Gard Flexitorch Underlay	1m x 16m 36kg	Glass	Film/Film	SBS torch-on underlay	7
Xtra-Gard Flexitorch Premium Underlay	1m x 10m 39kg	Polyester	Film/Film	SBS Film/Film torch-on underlay	7
APP Torch-On Capsheets					
Xtra-Gard Polytorch	1m x 8m 36kg	Polyester	Plain, Green & Charcoal Mineral Granules	APP plain & mineral surfaced torch-on capsheets with over 10yr Life expectancy	8
APP Torch-On Underlay					
Xtra-Gard Polytorch	1m x 16m 40kg	Glass	Film/Film	APP Film/Film Torch-on Underlay	9

Product Name	Nominal Roll Size & Weight	Base	Finish	Description	Page
SBS Pour & Roll Capsheets					
Xtra-Gard Flexibond	1m x 10m 35kg	Polyester	Green & Blue/ Grey Mineral Granules	SBS mineral pour & roll capsheets with over 15yr Life expectancy	10
Xtra-Gard Flexibond Glass	1m x 10m 32kg	Glass	Green Mineral Granules	SBS mineral pour & roll capsheets with over 10yr Life expectancy	11
SBS Pour & Roll Underlay					
Xtra-Gard Flexibond Underlay	1m x 20m 39kg	Polyester	Sand	SBS sanded pour & roll underlay	11
High Performance Polyester Mineral Capsheets					
Xtra-Gard Toughbond 180 Capsheet	1m x 10m 37kg	Polyester	Green Mineral Granules	High Performance Polyester Mineral Capsheet	12
Xtra-Gard Toughbond 250 Capsheet	1m x 10m 38kg	Polyester	Green Mineral Granules	High Performance Polyester Mineral Capsheet	13
High Performance Polyester Underlay					
Xtra-Gard Toughbond 180 Underlay	1m x 20m 37kg	Polyester	Sand	High Performance Polyester Underlay	13
Traditional Roofing					
Xtra-Gard Tradebond Green Mineral	1m x 10m 38kg	Glass	Green Mineral Granules	Cost Effective Mineral Capsheet	14
Xtra-Gard Tradebond 20	1m x 20m 36kg	Glass	Sand	Cost Effective Underlay	14
Preparation Layers					
Xtra-Gard Tradebond 3B	1m x 20m 39kg	Glass	Sand	Pour & Roll Base Layer	15
Shed Felt					
Xtra-Gard Shed Felt	1m x 10m 23kg	Glass	Green Mineral Granules	Economy Glass Fibre Bitumen Coated Membrane	16
Xtra-Gard Premium Shed Felt	1m x 8m 22kg	Polyester	Green Mineral Granules	Premium Bitumen Coated Polyester Membrane	17

Xtra-Gard Flexitorch SBS Range

The Xtra-Gard Flexitorch torch-on range of membranes is manufactured on a strong polyester reinforcement and coated with SBS Polymer Modified Bitumen, giving flexibility at low temperatures, easy application and good weathering properties.

Developed for use in high performance built-up systems on flat, pitched or curved roofs; when incorporated in a suitably designed multi-layer system they will greatly improve the long term performance of that system.

Xtra-Gard Flexitorch P Torch-on Mineral Capsheet

Premium performance polyester reinforced, SBS modified bitumen membrane. The upper surface is finished with a choice of Green, Blue/Grey or Brown mineral granules, a sand finished option is also available to receive additional surface finishes such as reflective paint, chippings or pedestrian tiles. The underside is finished with Icopal's mini groove technology and a thermofusible film, saving on application time and energy usage.

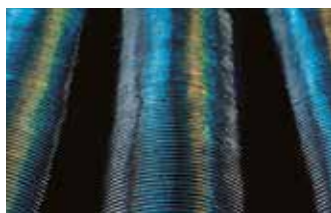
A mineral free selvedge with a thermofusible film facilitates secure bitumen to bitumen side laps.

Xtra-Gard Flexitorch P is intended for use as the capsheet layer within a bituminous built-up roofing system and is suitable for use on all types of roofs including sloping and barrel vault roofs.

Features & Benefits

- Flexible and durable SBS Modified Bitumen
- Groove technology for faster application and energy saving
- Polyester reinforcement for strength and durability
- Excellent puncture resistance against foot traffic
- Good low temperature flexibility
- Range of colours
- Torch-on application
- Over 15yr Life expectancy

For a comprehensive list of product sizes, colours and product codes please refer to page 22.



Xtra-Gard Flexitorch 5 Torch-on Mineral Capsheet

High performance polyester reinforced, SBS modified bitumen membrane. The upper surface is finished with a choice of Green, Blue/Grey or Brown mineral granules, a sand finished option is also available to receive additional surface finishes such as reflective paint, chippings or pedestrian tiles. The underside is finished with a thermofusible film.

A mineral free seldge with a thermofusible film facilitates secure bitumen to bitumen side laps.

Xtra-Gard Flexitorch S is intended for use as the capsheet layer within a bituminous built-up roofing system and is suitable for use on all types of roofs including sloping and barrel vault roofs.

Features & Benefits

- Flexible and durable SBS Modified Bitumen
- Easy to apply by torch application
- Polyester reinforcement for strength and durability
- Excellent puncture resistance against foot traffic
- Good low temperature flexibility
- Range of colours
- Torch-on application
- Over 10yr Life expectancy

For a comprehensive list of product sizes, colours and product codes please refer to page 22.

Xtra-Gard Flexitorch 20 Torch-on Mineral Capsheet

A high performance polyester reinforced, SBS modified bitumen membrane. The upper surface is finished with a choice of Green, Brown, Charcoal or Blue-grey slate granules and the underside is finished with a thermofusible film which is rapidly removed during application with the roofer's gas torch. A 75mm mineral-free seldge provides improved security at the side lap.

The self-finished mineral surface provides a decorative and solar reflective finish for the built-up waterproofing system. A plain finished version is also available; these membranes require permanent solar (UV) protection, such as reflective paint, chippings or pedestrian tiles.

Features & Benefits

- Flexible and durable SBS Modified Bitumen.
- Suitable for flat, pitched or curved roofs.
- Excellent low temperature flexibility.
- Used as mineral capsheet in bitumen built-up waterproofing system.
- 20 year guarantee.



Xtra-Gard Flexitorch **E** Torch-on Mineral Capsheet

A cost effective polyester reinforced, SBS modified bitumen membrane. The upper surface is coated with a choice of Green, Blue/Grey or Brown mineral granules, a sand finished option is also available to receive additional surface finishes such as reflective paint, chippings or pedestrian tiles. The underside is finished with a thermofusible film.

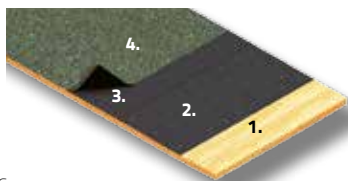
A mineral free seldedge with a thermofusible film facilitates secure bitumen to bitumen side laps.

Xtra-Gard Flexitorch E is intended for use as the capsheet layer within a bituminous built-up roofing system and is suitable for use on all types of roofs.

Features & Benefits

- Flexible and durable SBS Modified Bitumen
- Cost effective high performance membrane
- Polyester reinforcement for strength and durability
- Puncture resistant against foot traffic
- Good low temperature flexibility
- Range of colours
- Torch-on application
- Over 5yr Life expectancy

Xtra-Gard Flexitorch Cold Roof on Timber Boarding



1. Timber boarding
 2. Xtra-Gard Toughbond 180 Underlay nailed
 3. Xtra-Gard Flexitorch SBS Torch-on Underlay*
 4. Xtra-Gard Flexitorch SBS Torch-on Capsheet*
- *(see selection above)

Xtra-Gard Flexitorch SBS Torch-on Underlay – A Glass reinforced, SBS modified bitumen membrane. The glass carrier is coated with SBS modified bitumen. The upper and lower surfaces are finished with a thermofusible film.

Xtra-Gard Flexitorch SBS Torch-on Underlay is intended for use as an underlay within a high performance bituminous built-up roofing system.

Features & Benefits

- Flexible and durable SBS Modified Bitumen
- Cost effective high performance membrane
- Good low temperature flexibility
- Torch-on application

For a comprehensive list of product sizes, colours and product codes please refer to page 22.

Xtra-Gard Flexitorch Premium SBS Torch-on Underlay – A high performance polyester reinforced, SBS modified bitumen membrane. The upper and lower surfaces are finished with a thermofusible film.

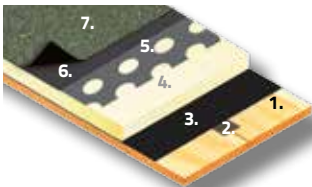
Xtra-Gard Flexitorch Premium SBS Underlay is intended for use as the underlay /intermediate layer within a bituminous built-up roofing system.

Features & Benefits

- Flexible and durable SBS Modified Bitumen
- High performance underlay
- Polyester reinforcement for strength and durability
- Puncture resistance against foot traffic
- Good low temperature flexibility
- Torch-on application

For a comprehensive list of product sizes, colours and product codes please refer to page 22.

Xtra-Gard Flexitorch Warm Roof on Plywood/OSB3



1. Plywood/OSB 3 roof deck
 2. HT 125 Taping Strip to boards joints
 3. Icopal Vapour Control Layer
 4. Thermazone Torch-on Board
 5. Icopal Torch-on Venting Base Layer
 6. Xtra-gard Flexitorch SBS Torch-on Underlay*
 7. Xtra-Flexitorch SBS Torch-on Capsheet*
- *(see selection above)

Xtra-Gard Polytorch APP Range

Xtra-Gard Polytorch APP torch-on membranes have been developed for use in high performance built-up systems on flat, pitched or curved roofs.

The Atactic Polypropylene (APP) additive improves the high temperature performance and gives improved weathering characteristics with higher slump resistance to the membrane.

Xtra-Gard Polytorch 20 APP Torch-on Mineral Capsheet - A high performance polyester reinforced, APP modified bitumen membrane. The upper surface is finished with a choice of Green, Brown, Charcoal or Blue-grey slate granules and the underside is finished with a thermofusible film which is rapidly removed during application with the roofer's gas torch. A 75mm mineral-free selvedge provides improved security at the side lap.

The self-finished mineral surface provides a decorative and solar reflective finish for the built-up waterproofing system. A plain finished version is also available; these membranes require permanent solar (UV) protection, such as reflective paint, chippings or pedestrian tiles.

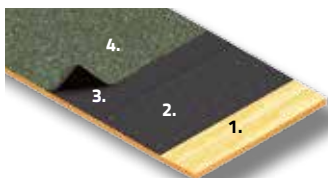
Features & Benefits

- Polyester reinforcement.
- Suitable for flat, pitched or curved roofs.
- Excellent low temperature flexibility.
- Used as mineral capsheet in bitumen built-up waterproofing system.
- 20 year guarantee.

Xtra-Gard Polytorch APP Torch-on Mineral Capsheet – A 4mm High performance polyester reinforced, APP polymer modified bitumen membrane. The upper surface is finished with a choice of Green or Charcoal slate granules and the underside is finished with a thermofusible film. The self-finished mineral surface provides a decorative and solar reflective finish for the built-up waterproofing system.

A Plain version is also available; the self-finished plain APP surface provides a UV resistant finish suitable for exposure or finishing with an applied surface finish.

Xtra-Gard Polytorch Cold Roof on Timber Boarding



1. Timber boarding
2. Xtra-Gard Toughbond 180 Underlay nailed
3. Xtra-Gard Polytorch APP Torch-on Underlay
4. Xtra-Gard Polytorch APP Torch-on Capsheet*

Xtra-Gard Poly Torch APP Torch-on Mineral capsheets are intended for use within a bituminous built-up roofing system.

Features & Benefits

- Polyester reinforcement
- Good lap security
- Superior bond strength with film selvedge
- Easy to cut with a sharp knife
- High slump resistance
- Good UV Resistance
- Range of colours available

For a comprehensive list of product sizes, colours and product codes please refer to page 23.

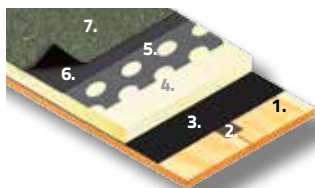
Xtra-Gard Polytorch APP Torch-on Underlay – A cost effective 3mm thick polyester reinforced, APP polymer modified bitumen membrane. The upper and lower surfaces are finished with a thermofusible film. Xtra-Gard Polytorch APP Underlay is intended for use as an underlay/intermediate layer within a bituminous built-up roofing system. The thermofusible film provides a quick and easy application.

Features & Benefits

- Polyester reinforcement.
- Good lap security
- Superior bond strength with film selvedge.
- Easy to cut with a sharp knife.

For a comprehensive list of product sizes, colours and product codes please refer to page 23.

Xtra-Gard Polytorch APP Warm Roof On Plywood/OSB3



1. Plywood/OSB 3 roof deck
2. Icopal HT125 Taping Strip
3. Icopal Vapour Control Layer
4. Thermazone Torch-on Board
5. Icopal Torch-on Venting Base Layer
6. Xtra-Gard Polytorch APP Torch-on Underlay
7. Xtra-Gard Polytorch Torch-on Capsheet*

*(see selection above)

Xtra-Gard Flexibond SBS Range

The Xtra-Gard Flexibond SBS Pour and Roll range of membranes is manufactured on a strong polyester reinforcement and coated with SBS Polymer Modified Bitumen, giving flexibility at low temperatures, ease of application and good weathering properties.

The range is available as underlays and capsheets, developed for use in high performance built-up systems on flat, pitched or curved roofs.

Xtra-Gard Flexibond SBS Mineral Capsheet – A Pour & Roll membrane reinforced with a polyester carrier and coated with Styrene Butadiene Styrene (SBS) polymer modified bitumen. The upper surface is coated with a choice of Green and Blue/Grey mineral granules and the underside is finished with fine silica sand to prevent the product sticking in the roll.

Xtra-Gard Flexibond SBS Polyester Pour & Roll Capsheets are for use as the top layer of a built-up roofing system. The membrane is applied using traditional pour & roll method of application for reinforced bituminous membranes, in accordance with 'BS 8217:2005. Reinforced bitumen membranes for roofing - Code of practice'.

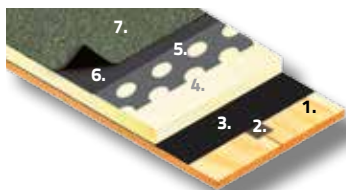
The self-finished mineral surface provides a decorative and solar reflective finish for the waterproofing system.

Features & Benefits

- Polyester reinforcement.
- Granule free side lap selvedge
- Easy to cut with a sharp knife.
- Traditional pour & roll application

For a comprehensive list of product sizes, colours and product codes please refer to page 23.

Xtra-Gard Flexibond Warm Roof on Plywood/OSB3



1. Plywood/OSB 3 roof deck
 2. HT 125 Taping Strip to board joints
 3. Icopal Vapourbar Vapour Control Layer
 4. Thermazone Roofboard Insulation
 5. Anderson 3G Perforated Slate Base Layer
 6. Xtra-Gard Flexibond SBS Underlay
 7. Xtra-Gard Flexibond Capsheet*
- * (see choice of colours above)

Xtra-Gard Flexibond Glass SBS Mineral Capsheet – A glass reinforced, Styrene Butadiene Styrene (SBS) modified bitumen membrane. The upper surface is coated with green mineral granules and the underside is given a coating of fine silica sand to prevent the product sticking in the roll.

Xtra-Gard Flexibond Glass SBS Mineral Capsheet is intended for use as capsheet within a bituminous built-up roofing system.

The membrane is applied using traditional methods for laying reinforced bituminous membranes, in accordance with 'BS 8217:2005. Reinforced bitumen membrane for roofing - Code of practice'.

The self-finished mineral surface provides a decorative and solar reflective finish for the waterproofing system.

Range Features & Benefits

- Glass reinforcement.
- Granule free side lap seldge
- Easy to cut with a sharp knife.
- Use with traditional preparation layers

Xtra-Gard Flexibond SBS Underlay - A Pour & Roll membrane reinforced with a polyester carrier and coated with, (SBS) polymer modified bitumen membrane. Both the upper and lower surfaces are finished with fine silica sand to prevent the product sticking in the roll. Xtra-Gard Flexibond SBS Pour & Roll Underlay is intended as a base layer or intermediate layer within a bituminous built-up roofing system. The membrane is applied using traditional pour and roll method of application for laying for reinforced bituminous membranes, in accordance with 'BS 8217:2005. Reinforced bitumen membranes for roofing - Code of practice'.

Features & Benefits

- Polyester reinforcement.
- Granule free side lap seldge
- Easy to cut with a sharp knife.
- Range of colours available.

For a comprehensive list of product sizes, colours and product codes please refer to page 23.

Xtra-Gard Toughbond Range

The Xtra-Gard Toughbond pour and roll range of membranes is manufactured on a strong polyester reinforcement and coated with bitumen compound, providing a strong high tensile membrane. The range is available as underlays and capsheets, developed for use as a high performance pour & roll built-up system for flat, pitched or curved roofs.

Xtra-Gard Toughbond 180 Capsheet – A polyester reinforced membrane coated with bitumen and finished on the upper surface with green mineral granules and on the underside with fine silica sand to prevent sticking in the roll.

Xtra-Gard Toughbond 180 Pour & Roll Capsheet is for use as the top layer of a built-up roofing system. The membrane is applied using traditional pour & roll method of application for reinforced bituminous membranes, in accordance with 'BS 8217:2005. Reinforced bitumen membranes for roofing - Code of practice'.

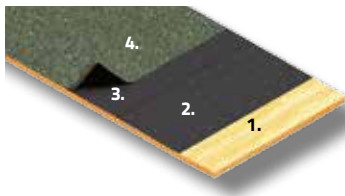
The self-finished mineral surface provides a decorative and solar reflective finish for the waterproofing system.

Features and Benefits

- Traditional application
- Durable polyester reinforcement
- Mineral finish for UV protection
- Easy to cut and work

For a comprehensive list of product sizes, colours and product codes please refer to page 24.

Xtra-Gard Toughbond Cold Roof on Timber Boarding



1. Timber boarding
2. Xtra-Gard Toughbond 180 Underlay nailed
3. Xtra-Gard Toughbond 180 Underlay
4. Xtra-Gard Toughbond 250 Capsheet

Xtra-Gard Toughbond 250 Capsheet – A durable polyester reinforced membrane coated with bitumen and finished on the upper surface with green mineral granules and on the underside with fine silica sand to prevent sticking in the roll.

Xtra-Gard Toughbond 250 Pour & Roll Capsheet is for use as the top layer of a built-up roofing system. The membrane is applied using traditional pour & roll method of application for reinforced bituminous membranes, in accordance with 'BS 8217:2005. Reinforced bitumen membranes for roofing - Code of practice'. The self-finished mineral surface provides a decorative and solar reflective finish for the waterproofing system.

Features & Benefits

- Traditional application
- Durable and strong polyester reinforcement
- Mineral finish for UV protection
- Easy to cut and work

For a comprehensive list of product sizes, colours and product codes please refer to page 24.

Xtra-Gard Toughbond 180 Pour & Roll Underlay – A durable polyester reinforced membrane coated with bitumen and finished on the upper and lower surfaces with fine silica sand to prevent sticking in the roll. Xtra-Gard Toughbond 180 Pour & Roll Underlay is for use as an underlay/intermediate layer of a built-up roofing system. The membrane is applied using traditional pour & roll method of application for reinforced bituminous membranes, in accordance with 'BS 8217:2005. Reinforced bitumen membranes for roofing - Code of practice'.

Xtra-Gard Toughbond 180 should be used as the nailed first layer on timber boarded (Not Plywood/OSB 3) roofs in torch-on built up roofing systems in accordance with the above Code of Practice.

Features and Benefits

- Polyester reinforced
- Traditional application
- Nailed layer on timber boarded roofs for Torch-on systems
- Easy to cut and work

For a comprehensive list of product sizes, colours and product codes please refer to page 24.

Xtra-Gard Tradebond Range

A range of economical glass fibre based membranes coated with weather resistant bitumen compound for use on garden sheds, summer houses and other garden buildings as well as non habitable buildings. The range comprises base layer, underlay and capsheets.

Xtra-Gard Tradebond Green Mineral – A glass fibre reinforced membrane coated with bitumen and finished on the upper surface with green mineral granules and on the underside with fine silica sand to prevent sticking in the roll.

Xtra-Gard Tradebond Green Mineral is for use as a fully bonded top layer of a built-up roofing system.

Features and Benefits

- Stable glass fibre reinforcement
- Traditional membrane
- Cost effective
- Cold bonding or pour & roll application

For a comprehensive list of product sizes, colours and product codes please refer to page 24.

Xtra-Gard Tradebond 20 – A glass fibre reinforced membrane coated with bitumen, finished on the upper and lower surfaces with fine silica sand to prevent sticking in the roll. The product is used as a nailed first layer or fully bonded Intermediate layer in a built up roofing system generally for temporary Buildings.

Features and benefits

- Traditional membrane
- Cost effective
- Nail, cold bonding or pour & roll application

For a comprehensive list of product sizes, colours and product codes please refer to page 24.

Xtra-Gard Tradebond 3B Glass Base Layer - A glass fibre reinforced membrane coated with bitumen and finished on both the upper and lower surfaces with fine silica sand.

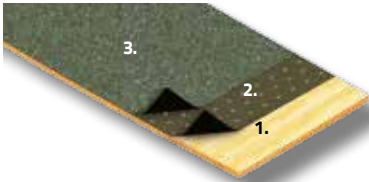
The product is used as a fully bonded preparation or intermediate layer in pour and roll bitumen built up roofing systems. The product is also suitable as an underlay to Icopal bitumen shingles in a pitched roof application

Features and benefits

- Inert glass fibre reinforcement
- Suitable as both underlay and intermediate layer
- Suitable for use as underlay to Icopal bitumen shingles
- Easily cut and worked

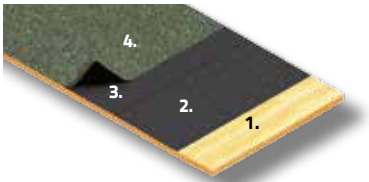
For a comprehensive list of product sizes, colours and product codes please refer to page 25.

Two Layer Layer Xtra-Gard Tradebond Traditional Roofing on Timber Boarding



1. Timber Boarding
2. Xtra-Gard Tradebond 3B Glass Base Layer nailed
3. Xtra-Gard Tradebond Green Mineral

Three Layer Layer Xtra-Gard Tradebond Traditional Roofing on Timber Boarding



1. Timber Boarding
2. Xtra-Gard Tradebond 3B Glass Base Layer nailed
3. Xtra-Gard Tradebond 20 fully bonded
4. Xtra-Gard Tradebond Green Mineral

Xtra-Gard Shed Felt

Xtra-Gard Shed Felt – A cost effective membrane manufactured on a glass fibre reinforcement and coated on both sides with bitumen. The top surface is finished with decorative green mineral granules and the underside is finished with silica sand to prevent sticking in the roll.

Xtra-Gard Shed Felt is intended for use as a waterproofing layer on temporary portable buildings with pitched roofs such as garden sheds, stables, kennels and non-inhabited buildings with a roof pitch in excess of 20°.

It is not recommend for use on domestic flat roof applications.

Features and benefits

- Cost effective
- Green mineral surface
- Easily applied
- Nailed/Cold application

For a comprehensive list of product sizes and product codes please refer to page 24.



Xtra-Gard Shed Felt

Xtra-Gard Premium Shed Felt – Manufactured on a strong polyester reinforcement and coated with bitumen. The upper surface is finished with decorative green mineral granules and the underside is finished with fine silica sand to prevent sticking in the roll.

Xtra-Gard Premium Shed Felt is designed to provide a more durable, longer lasting solution to the waterproofing of temporary portable buildings with pitched roofs such as garden sheds, stables, kennels and non-inhabited buildings.

It is not recommend for use on domestic flat roof applications.

Features and benefits

- Durable and longer lasting
- Green mineral surface
- Easily applied
- Nailed/Cold application

For a comprehensive list of product sizes, colours and product codes please refer to page 24.



Xtra-Gard Premium
Shed Felt

Installation and Site Work

This section is designed to provide general guidance on the design and installation of the Reinforced Bitumen Roofing Membranes contained within this brochure.

For further information or specific advice contact Icopal Technical Services on 0161 865 4444.

Structural Decks

Concrete, timber boarding, plywood, OSB 3 and profiled metal decking are the most common types of structural deck used for flat roofing. It is important to carefully select the type of structural deck material to suit the use of the roof and its capability to withstand imposed loads and any possible snow loading etc.

Roof Types

There are generally three types of flat roof construction:

1. Warm Roof – thermal insulation is positioned above the roof deck and vapour control layer and immediately below the waterproofing, resulting in the structural deck and ceiling being at a temperature close to that of the interior of the building. Ventilation of the roof void is not required. However due consideration must be given to providing a minimum upstand requirement of 150mm above the finished roof level for all details.

2. Cold Roof – this type of roof must be carefully designed to avoid premature failure and should be avoided wherever possible. Thermal Insulation is positioned immediately above the ceiling, resulting in the roof covering and structural deck being substantially colder in winter than the interior of the building. It is important that a minimum 50mm void is allowed between the top of the insulation and the roof deck; this void must be ventilated and cross ventilation must be provided with a minimum 25mm continuous opening at eaves on opposing sides of the roof and the provision for venting between joists. If eaves cross ventilation is not possible proprietary roof vent systems must be installed.

3. Inverted roofs – thermal insulation is positioned above the roof covering, resulting in the roof covering, structural deck and ceiling being at a temperature close to that of the interior of the building. The insulation type for use on inverted roofs must be Extruded Polystyrene (XPS) and is secured by ballast loading. **Note: the roof deck must be capable of withstanding the additional loading of a ballasted roof.**

Thermal Insulation – new and refurbished roofs will need to be insulated to meet the requirements of the current Building Regulations. Specific guidance on the calculation of thermal transmittance (“U”) values and condensation risk within a structure can be found in the current issue of BS6229. Specific U-Value calculations can be provided by Icopal Technical Services.

Wind Action – the design of the roof structure and choice of waterproofing system must make allowance for wind forces which can have a significant effect on roof coverings, particularly during winter gales and in exposed locations. Attachment of roofing systems should comply with the current recommendations of EN1991-1-4. Specific wind uplift calculations can be provided by Icopal Technical Services.

Fire – the fire requirements of the current Building Regulations must be taken into consideration when designing the roof and waterproofing system. These requirements are based on the performance of the roof structure as submitted for assessment in accordance with ENV 1187:2002 Test 4 ^BRoof_{T4} (BS476:Part 3:2004) – fire tests on building materials and structures and classification to EN 13505-5. An Ext. F.A.A, F.A.B or F.A.C result will normally allow unrestricted use and Icopal High Performance Waterproofing Systems will achieve one of these results.

Installation

Cover Flashing – prior to the application of the waterproofing membranes suitable chases should be cut to receive FormFlash flashing installed in accordance with current Icopal instructions. All chases must be positioned a minimum of 150mm above the proposed finished level of the roof surface.

Substrates – all substrates to receive the waterproofing membranes must be clean, free from oil, grease and sharp projections, all mechanical fixings used to secure the roof deck must be well driven to prevent fixings puncturing the membranes.

Surface Preparation – metal, concrete, and screeded surfaces, plywood, OSB3 and masonry should be primed with either; Xtra-Seal SF Bitumen Primer or Xtra-Seal QD Bitumen Primer in accordance with the coverage rates and instructions on the containers.

Membrane Attachment – when installing a 2 layer waterproofing system over plywood, OSB3, concrete, and screed surfaces the first layer of waterproofing must be partially bonded using the appropriate preparation layer (refer to Specification build ups).

When applying the waterproofing system over Polyisocyanurate (PIR) the waterproofing must be partially bonded with the appropriate preparation layer.

Timber boarded decks require a first layer of Xtra-Gard Toughbond 180 Underlay to be nailed at 150mm staggered centres over the field area and at 50mm centres along side and end laps.

On metal decks the waterproofing system is laid over the chosen insulation, which is laid onto a vapour control layer bonded to the primed metal deck.

Waterproofing layers are laid with minimum 75mm side laps and minimum 100mm end laps (or as otherwise specified) and fully sealed. Successive layers of waterproofing are applied with side lap joints offset by 300mm and end laps must also be offset from the previous layers to avoid a build up of joints in successive layers.

When applying waterproofing membranes using the pour and roll method of application 95/25 grade bitumen should be used on roofs up to and including 5° pitch and 115/15 grade bitumen over 5° pitch. End/head laps on membranes applied on roofs over 5° pitch must be mechanically fixed.

When applying waterproofing membranes by torching it is essential that no torching flame is allowed to contact any timber or combustible surface. If in any doubt apply a sacrificial nailed layer first. It is essential that the thermofusible film is completely dispersed and a continuous 5mm bead of bitumen extrudes from all laps as work proceeds.

The use of torch-on membranes directly to flammable substrates such as plywood or OSB 3 will no longer be allowed, as this is against the Code of Practice and adds significant risk to the roofing operation for which the roofing contractor may not be insured.

For applications that include plywood or OSB 3, heat activated/self adhesive membranes should be used. Please contact Icopal Technical Services for further details

Technical Support

For detailed application and specification details refer to specific product literature and/or product data sheets. Icopal Technical Area Managers are available to offer full technical guidance, roof surveys and condition reports supported by written reports for both existing roofs for refurbishment or new build roof construction and waterproofing specifications. In addition Icopal Technical Services can provide detailed thermal insulation calculations and condensation risk analysis. Individual CAD detail drawings can also be provided for all roofing details.

Useful References

- BS 8747:2007. Reinforced bitumen membranes (RBM's) for roofing – Guide to selection and specification.
- BS 8217:2005. Reinforced bitumen membrane for roofing – Code of practice.
- BS 6229:2003. Flat roofs with continuously supported coverings – Code of practice.
- BS 8000: Part 4: 1989. Workmanship on building sites – Part 4 Code of practice for waterproofing.
- BS 476-3:2004. Fire tests on building materials and structures – Part 3 Classification and method of test for external fire exposure to roofs.
- BS EN 13707:2004. Flexible sheets for waterproofing – Reinforced bitumen sheets for roof waterproofing – Definitions and characteristics.

Xtra-Gard SBS Torch-on Range

Material Code	Description	Nominal Roll Size & Weight	Surface Finish	See Page
SBS Torch-On Capsheets				
2004150	Xtra-Gard Flexitorch P SBS Torch-on Capsheet	1m x 8m 36kg	Sand	4
2004147	Xtra-Gard Flexitorch P SBS Torch-on Capsheet	1m x 8m 40kg	Green Mineral	4
2004148	Xtra-Gard Flexitorch P SBS Torch-on Capsheet	1m x 8m 40kg	Blue/Grey Mineral	4
2004149	Xtra-Gard Flexitorch P SBS Torch-on Capsheet	1m x 8m 40kg	Brown Mineral	4
2004306	Xtra-Gard Flexitorch P SBS Torch-on Capsheet	1m x 8m 40kg	Charcoal Mineral	4
2004490	Xtra-Gard Flexitorch 20 SBS Torch-on Capsheet	8m x 1m 40 kg	Green	6
2004491	Xtra-Gard Flexitorch 20 SBS Torch-on Capsheet	8m x 1m 40 kg	Charcoal	6
2004492	Xtra-Gard Flexitorch 20 SBS Torch-on Capsheet	8m x 1m 40 kg	Blue-grey	6
2004493	Xtra-Gard Flexitorch 20 SBS Torch-on Capsheet	8m x 1m 40 kg	Brown	6
2004494	Xtra-Gard Flexitorch 20 SBS Torch-on Capsheet	8m x 1m 40 kg	Sand	6
2004154	Xtra-Gard Flexitorch S SBS Torch-on Capsheet	1m x 8m 32kg	Sand	5
2004151	Xtra-Gard Flexitorch S SBS Torch-on Capsheet	1m x 8m 36kg	Green Mineral	5
2004152	Xtra-Gard Flexitorch S SBS Torch-on Capsheet	1m x 8m 36kg	Blue/Grey Mineral	5
2004153	Xtra-Gard Flexitorch S SBS Torch-on Capsheet	1m x 8m 36kg	Brown Mineral	5
2004306	Xtra-Gard Flexitorch S SBS Torch-on Capsheet	1m x 8m 36kg	Charcoal Mineral	5
2004158	Xtra-Gard Flexitorch E SBS Torch-on Capsheet	1m x 8m 32kg	Sand	6
2004155	Xtra-Gard Flexitorch E SBS Torch-on Capsheet	1m x 8m 36kg	Green Mineral	6
2004156	Xtra-Gard Flexitorch E SBS Torch-on Capsheet	1m x 8m 36kg	Blue/Grey Mineral	6
2004157	Xtra-Gard Flexitorch E SBS Torch-on Capsheet	1m x 8m 36kg	Brown Mineral	6
2004306	Xtra-Gard Flexitorch E SBS Torch-on Capsheet	1m x 8m 36kg	Charcoal Mineral	6

Material Code	Description	Nominal Roll Size & Weight	Surface Finish	See Page
Xtra-Gard SBS Torch-on Range - Underlays				
2004160	Xtra-Gard Flexitorch Premium SBS Torch-on Underlay	1m x 10m 39kg	Film/Film	7
2004159	Xtra-Gard Flexitorch SBS Torch-on Underlay	1m x 16m 36kg	Film/Film	7

Xtra-Gard APP Torch-on Range

Material Code	Description	Nominal Roll Size & Weight	Surface Finish	See Page
APP Torch-On Capsheets				
3102359	Xtra-Gard Polytorch 20 APP Torch-on Capsheet	8m x 1m 44 kg	Green	9
3102360	Xtra-Gard Polytorch 20 APP Torch-on Capsheet	8m x 1m 44 kg	Plain	9
3102361	Xtra-Gard Polytorch 20 APP Torch-on Capsheet	8m x 1m 44 kg	Charcoal	9
3102362	Xtra-Gard Polytorch 20 APP Torch-on Capsheet	8m x 1m 44 kg	Brown	9
3102363	Xtra-Gard Polytorch 20 APP Torch-on Capsheet	8m x 1m 44 kg	Blue-grey	9
3100469	Xtra-Gard Polytorch APP Torch-on Capsheet	1m x 8m 36kg	Plain	8
3100471	Xtra-Gard Polytorch APP Torch-on Capsheet	1m x 8m 36kg	Green	8
3100472	Xtra-Gard Polytorch APP Torch-on Capsheet	1m x 8m 36kg	Charcoal	8
APP Torch-On Underlay				
3100476	Xtra-Gard Polytorch APP Torch-on Underlay	1m x 16m 40kg	Film/Film	9

Xtra-Gard Flexibond SBS Pour & Roll Range

Material Code	Description	Nominal Roll Size & Weight	Surface Finish	See Page
SBS Pour & Roll Capsheets				
2004163	Xtra-Gard Flexibond SBS Pour & Roll Capsheet	1m x 10m 35kg	Green	10
2004162	Xtra-Gard Flexibond SBS Pour & Roll Capsheet	1m x 10m 35kg	Blue/Grey	10
2004165	Xtra-Gard Flexibond Glass SBS Pour & Roll Capsheet	1m x 10m 32kg	Green	11
SBS Pour & Roll Underlay				
2004164	Xtra-Gard Flexibond SBS Pour & Roll Underlay	1m x 20m 39kg	Sand	11

Xtra-Gard Toughbond Pour & Roll Range

Material Code	Description	Nominal Roll Size & Weight	Surface Finish	See Page
Pour & Roll Capsheets				
2004167	Xtra-Gard Toughbond 180 Pour & Roll Capsheet	1m x 10m 37kg	Green	12
2004168	Xtra-Gard Toughbond 250 Pour & Roll Capsheet	1m x 10m 38kg	Green	13
Pour & Roll Underlay				
2004166	Xtra-Gard Toughbond 180 Pour & Roll Underlay	1m x 20m 37kg	Sand	13

Xtra-Gard Tradebond Range

Material Code	Description	Nominal Roll Size & Weight	Surface Finish	See Page
Traditional Capsheets				
2004178	Xtra-Gard Tradebond Green Mineral Capsheet	1m x 10m 38kg	Green	14
2004171	Xtra-Gard Shed Felt Mineral Capsheet	1m x 10m 23kg	Green	16
2004172	Xtra-Gard Premium Shed Shed Felt Mineral Capsheet	1m x 8m 22kg	Green	17
Traditional Underlay				
2004169	Xtra-Gard Tradebond 20 Traditional Underlay	1m x 20m 36kg	Sand	14

Xtra-Gard Preparation Layers

Material Code	Description	Nominal Roll Size & Weight	Surface Finish	See Page
2004170	XtraGard Tradebond 3B Glass Base Layer	1m x 20m 39kg	Sand	15

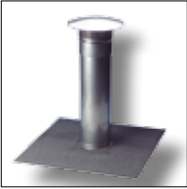
Bonding Bitumen Compound

Material Code	Description	Nominal Weight	Surface Finish	See Page
3100536	Icopal Bonding Bitumen	24kg Keg	Black	27

Bitumen Primers & Sealants

Material Code	Description	Nominal Roll Size & Weight	Surface Finish	See Page
3000862	Icopal QD Bitumen Primer	25 Litre	Black	27
3005737	Icopal SF Bitumen Primer (Solvent Free)	18 Litre	Black	27
3005190	Icopal Bitumen Sealant	330ml	Black	27

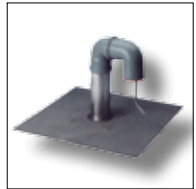
Accessories and Acillary Items



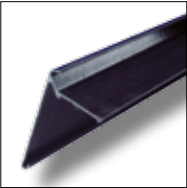
Cowled Telescopic Vent.



AnchorFast Lightning Conductor Pads.



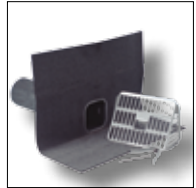
Cable & Pipe Duct.



GRP Edge Trim.



Roof Outlets & Leaf Grates.



Parapet Outlet.



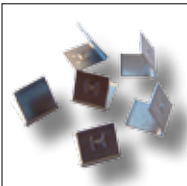
TerraDeck Timber Tile.



Paving Support System.



FormFlash.



FormFlash Fixing Clips – replace traditional lead wedges saving time and money.



Dalite Premium Rooflight



Dalite Standard Rooflight

Icopal Bonding Bitumen – Supplied in 24kg kegs for bonding pour & roll membranes on flat and pitched roofs.

Icopal QD Bitumen Primer - A black quick drying solvent based bitumen priming solution consisting of high quality bitumen's and hydrocarbon solvents for the preparation of masonry, concrete, cementitious screeds/renders, existing bituminous waterproofing, and structural steelwork, prior to the application of bituminous membranes.

Icopal SF Bitumen primer - A Solvent free elastomer-bitumen-primer for the preparation of Masonry, Concrete, Steel and Plywood prior to the application of bitumen membranes. Particularly suitable for Self Adhesive membranes.

Icopal Bitumen Sealant – A special blend of bitumen, polymers and mineral fillers mixed with solvents.

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