

## NBS Specification

Supporting deck	Profiled metal
Type of roof	Warm
Application	Two layer mechanically fastened
System reference	TOPFIX / TOPMETAL

## J41 Reinforced bitumen membrane roof coverings

To be read with Preliminaries/ General conditions.

### TYPES OF COVERING

110A BUILT-UP REINFORCED BITUMEN MEMBRANE WARM DECK ROOF COVERING  
Axter two layer TOPFIX mechanically fastened waterproofing system in accordance with  
ETA-06/0030

A comprehensive system comprising a mechanically fastened base layer and fully adhered cap sheet applied to profiled metal decking incorporating straight cut or tapered plastics insulation. Surface treatments, primers and vapour control layers are available where required.

System manufacturer: Axter Ltd, West Road, Ransomes Europark, Ipswich, IP3 9SX  
Tel 01473 724056, Fax 01473 723263, email [info@axterltd.co.uk](mailto:info@axterltd.co.uk), internet [www.axter.co.uk](http://www.axter.co.uk)

Reinforced bitumen membranes should only be applied over a continuous substrate which provides full support. Substrate Materials used to form the roof deck in flat roofs should be those listed in BS 6229 : 2003 and conform to the relevant requirements in BS 8217 : 2005.

- **Substrate:** Profiled metal deck.
  - Preparation: Axter's VERNIS ANTAC ST quick drying primer.
  - Vapour control layer: Axter VAP IND self-adhesive, aluminium surfaced membrane, or VAP-AL SK, a high strength reinforced aluminium-cored membrane with fine sand on the top surface and removable release paper on the underside and selvedge.
  - Attachment: To be loose laid and positioned prior to the removal of the release paper from the underside of the roll. In ambient temperatures below 10°C full adhesion may require the application of light heat to the top surface of the installed membrane.
- **Thermal insulation:**  
Standard board: Axter Ltd's HYTHERM ADH rigid urethane foamed board to thickness \_\_\_\_\_ to meet required U-value of \_\_\_\_\_ W/m<sup>2</sup>/°C loose laid and held in place with a minimum of four fixings per board.
- **Waterproof covering**
  - System manufacturer: Axter Ltd, West Road, Ransomes Europark, Ipswich IP3 9SX, Tel 01473 724056, Fax 01473 723263, email [info@axterltd.co.uk](mailto:info@axterltd.co.uk), internet [www.axter.co.uk](http://www.axter.co.uk).
  - Product reference: Axter TOPFIX mechanically fastened warm roofing system in accordance with European Technical Agreement No. ETA-06/0030.
  - First layer: TOPFIX.
  - Attachment: mechanically fastened along the selvedge.
  - Intermediate layer: not required.
  - Attachment: not required.

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- Top layer/ Cap sheet: TOPAZ 25 (alternative cap sheets, including aluminium, copper or stainless steel foiled membranes) are available from Axter Ltd.
  - Colour: to choice.
  - Attachment: torch-on bonding.
  - Flashings and detail work: ARMA CPV colour to match the TOPAZ 25.
- **Surface protection:** Not required.
  - **Accessories:** As drawing ref. no. \_\_\_\_\_

## PRODUCTS

### 322A PRIMER

- Type: Modified bitumen primer.
- Manufacturer: Axter Ltd.
  - Product reference: VERNIS ANTAC ST.
  - Viscosity 15 to 20 sec@ 25°C.

### 330 TIMBER TRIMS, ETC

- Quality: Planed. Free from wane, pitch pockets, decay and insect attack (except ambrosia beetle damage).
- Moisture content at time of covering (maximum): 22%.
- Preservative treatment: As recommended by bitumen membrane manufacturer.

### 345 PERIMETER TRIMS

- Type: GRP.
- Manufacturer: As for bitumen membrane.
  - Product reference: AXTRIM.
- Colour: To choice.
- Size: As drawing ref. no. \_\_\_\_\_
- Lengths (maximum): 3 m.

### 350A MECHANICAL FASTENERS FOR REINFORCED BITUMEN MEMBRANES

- Type: As membrane manufacturer's recommendations.
- Manufacturer: Axter Ltd.
  - Product reference: Type and density depend upon deck design, location. height and configuration of the building. Axter can advise on suitable fasteners as required.

### 395 VAPOUR CONTROL LAYER

- Type: Metal cored flexible reinforced bitumen membrane.
- Manufacturer: Axter Ltd.
  - Product reference: VAP-IND.
- Thickness: 2.0 mm.
- Vapour resistance: 3358 Sd(m) to EN 1931.

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- 420 RIGID URETHANE FOAM WARM DECK ROOF INSULATION
- Standard: Rigid polyisocyanurate foam (PIR) roofboard to BS 4841-3.
  - Manufacturer: Axter Ltd.
    - Product reference: HYTHERM.
  - Grade: As insulation manufacturer's recommendations for the traffic loading.
  - Edges: Square.
  - Thickness: as required by U-value.
  - Facing: Glass tissue.

### EXECUTION GENERALLY

- 515 ADVERSE WEATHER
- General: Do not lay coverings in high winds, wet damp conditions or in extremes of temperature unless effective temporary cover is provided over working area.
  - Unfinished areas of roof: Keep dry. Protect edges of laid membrane from wind action.
- 530 APPLYING PRIMERS
- Coverage per coat (minimum): 0.2 L/m<sup>2</sup>.
  - Surface coverage: Even and full.
  - Coats: Fully bond. Allow volatiles to dry off thoroughly between coats.

### SUBSTRATES/ VAPOUR CONTROL LAYERS/ WARM DECK ROOF INSULATION

- 610 SUITABILITY OF SUBSTRATES
- Substrates generally: Secure, clean, dry, smooth, and free from frost, contaminants, voids and protrusions.
  - Preliminary work: Complete including:
    - Grading to correct falls.
    - Formation of upstands, kerbs, box gutters, sumps, grooves, chases, expansion joints.
    - Fixing of battens, fillets and anchoring plugs/ strips.
  - Moisture content and stability of substrate: Must not impair roof integrity.
- 640 FIXING TIMBER TRIMS
- Fasteners: Sherardized steel screws.
  - Fixing centres (maximum): 400 mm.
- 660 JOINTS IN RIGID BOARD SUBSTRATES
- Cover strip: Lay centrally over substrate joints before laying vapour control layers or coverings. Adhere to substrate with bonding compound along edges only.

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### 670 LAYING VAPOUR CONTROL LAYER

- Attachment: Securely bond or nail to substrate.
- Side and end laps: 75 mm minimum, fully bitumen sealed.
- Joints in second layer (where applicable): Stagger by half a sheet.
- Penetrations: Fully seal using bonding or taping methods recommended by manufacturer.
- Edges of insulation at roof edges, abutments, upstands, kerbs, penetrations and the like: Enclose, with vapour control layer:
  - Dressed up sufficiently, providing 25 mm (minimum) seal when overlapped by the roof covering; or
  - Turned back 150 mm (minimum) over the insulation and sealed down.

### 680 LAYING WARM DECK ROOF INSULATION

- Setting out:
  - Long edges: Fully support and run at right angles to metal deck troughs.
  - End edges: Adequately support.
  - Joints: Butt together.
  - End joints: Stagger.
- Bedding: Full bed of bonding compound.
- Mechanical fixing: As drawing ref. no. \_\_\_\_\_
- Protection to exposed edges of insulation: Reduced thickness treated timber batten, outer edge chamfered at changes in level.
- Completion: Boards must be in good condition, well fitting and stable.

## WATERPROOF MEMBRANES/ ACCESSORIES

### 710 LAYING REINFORCED BITUMEN MEMBRANE GENERALLY

- Direction of laying: Unrolled up the slope.
  - Where practicable, install so that water drains over and not into laps.
- Side and end laps: As recommended by bitumen membrane manufacturer.
- Head and side laps: Offset.
  - Intermediate and top layer/ capsheet: Fully bond.
- Successive layers: Apply without delay. Do not trap moisture.
- Strips of bitumen for 'linear' details: Cut from length of roll.
- Completed coverings: Firmly attached, fully sealed, smooth, weatherproof and free draining.

### 715 LAYING REINFORCED BITUMEN MEMBRANE ON ROOFS PITCHED MORE THAN 5°

- Timber battens: Fix flush with surface in substrates that will not securely accept nails.
  - Locations: To BS 8217, table 5.
  - Size: As drawing ref.no. \_\_\_\_\_
- Setting out: Parallel to roof slope, with successive layers carried over ridges.
  - Lengths (maximum): As recommended by bitumen membrane manufacturer.
  - End laps: Half stagger and align on alternate bitumen membranes.
- Additional fixing of bitumen membranes: As recommended by bitumen membrane manufacturer.

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- 740 TORCH-ON BONDING OF REINFORCED BITUMEN MEMBRANES
- Bond: Full over whole surface, with no air pockets.
  - Excess compound at laps of top layer/ capsheet: Leave as continuous bead.
- 747 SELF-ADHESIVE BONDING OF REINFORCED BITUMEN MEMBRANES
- Bond: Full over whole surface, with no air pockets.
- 750 LAYING MINERAL FACED REINFORCED BITUMEN MEMBRANES
- Lap positions and detailing of ridges, eaves, verges, hips, abutments, etc: Submit proposals.
  - Setting out: Neat, with carefully formed junctions.
  - Lap bonding: Carry out only at prefinished margins or prepared 'black to black' edges.
  - Excess bonding compound at laps: Remove whilst still warm.
- 760A MECHANICAL FIXING OF MULTI LAYER REINFORCED BITUMEN MEMBRANES
- Installing fasteners:
    - Use manufacturer's recommended methods and equipment
    - Insertion: Correct and consistent.
  - Washers/ Pressure plates/ Bars:
    - Distance from fixed edge (minimum): 10 mm.
    - Fixing: Flush with membrane.
- 775A SKIRTINGS AND UPSTANDS
- Angles; install AXTER 35 PY angle strips centrally in the angle
  - Other layers of bitumen membrane: Carry in staggered formation up upstand, with each layer fully bonded. Where practicable, carry top layer over top of upstand.
  - Upstands:
    - At ends of rolls: Form with bitumen membrane carried up without using separate strip.
    - Elsewhere: Form with matching strips of bitumen membrane, maintaining laps.
    - Additional fixing of bitumen membranes: As recommended by bitumen membrane manufacturer.
- 780 WELTED DRIPS
- Material: ARMA CPV colour to suit field sheet.
    - Length: Form using maximum length strips.
    - Height at external gutter (minimum): 75 mm.
  - Welt tail: Nail to face of drip batten. Fold neatly.
  - Welt: Bond together, carry minimum 100 mm onto roof. Overlap with top bitumen membrane.

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### 785 FIXING PERIMETER TRIMS

- First/ Intermediate layers bitumen membrane: Lay over roof edge upstand. Project free edge 25 mm from wall or fascia.
- Trim:
  - Setting out (minimum): 3 mm clear from wall or fascia.
  - Fasteners: As drawing ref. no. \_\_\_\_\_
  - Fixing: 30 mm from ends and at 300 mm (maximum) centres.
- Jointing sleeves: Fix one side only.
- Corner pieces: Purpose made.
- Completion:
  - Contact surfaces: Prime.
  - Joints: Cover with 150 mm long pads of bitumen membrane, bonded to trim.
- Completion of bitumen membrane:
  - Top layer/ Capsheet: Butt joint to rear edge of trim.
  - Cover strip: Fully bond to trim and top layer/ capsheet of bitumen membrane. Carry over roof edge upstand and lap 75 mm onto roof.  
Cover strip material: As top layer/ capsheet bitumen membrane.

## COMPLETION

### 910 INSPECTION

- Interim and final roof inspections: Submit reports.

### 940 COMPLETION

- Roof areas: Clean.
- Outlets: Clear.
- Work necessary to provide a weathertight finish: Complete.
- Storage of materials on finished surface: Not permitted.
- Completed membrane: Do not damage. Protect from chemicals, traffic and adjacent or high level working.

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