BAUDER
making roofs secure.

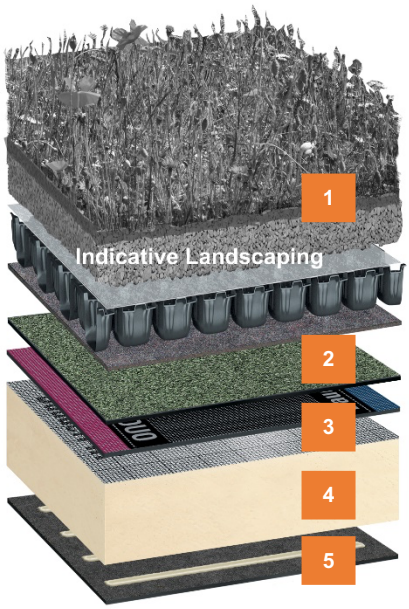
REF No: B242543 **PROJECT NAME: 70a Lady Margaret Road**

SPECIFICATION SUMMARY

System	Bauder Total Green Roof System
Project plan	New Build
Applicable Structural decks	New Plywood / OSB/3 Deck
Roof construction	Warm Roof
Surface finish	Refer NBS Section Q37

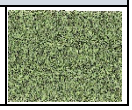
Reinforced bitumen membrane warm roof covering system – self adhered

Two layer, self adhered, warm roof, bitumen membrane waterproofing system suitable for both new build and refurbishment applications. Can be used in uninsulated and inverted roof scenarios. Safe to torch detailing for application in the vicinity of combustible construction materials.



Product	Description	thickness	weight
1 Landscaping	Please refer to NBS Q37 Specification	Project specific	
2 BauderPLANT E Capping Sheet	Torch applied, heavy duty elastomeric bitumen capping sheet; 250g/m² spunbond polyester reinforcement; fire retardant. Chemically treated bitumen to deliver superior root resistance.	5.2mm	6.0Kg/m²
3 BauderTEC KSA DUO Underlayer	Self-adhesive elastomeric bituminous membrane; glass lattice reinforcement; 'DUO' lap technology.	3.0mm	3.5Kg/m²
4 BauderPIR FA-TE Flatboard Insulation	Thermally efficient, lightweight and zero ODP rated; Foil-faced on both sides for increased thermal efficiency. Alternatively, BauderPIR FA Tapered can be used for improved drainage falls.	140mm	5.32 Kg/m²
5 BauderTEC KSD FBS Air and Vapour Control Layer	Self-adhesive elastomeric bitumen air and vapour control layer; mica finished upper surface for easy bonding of insulation in Bauder insulation adhesive.	2.5mm	2.5Kg/m²
System Build up		**150.70mm**	**17.32Kg/m²**

SYSTEM OPTIONS

MEMBRANE COLOURS	
PLANT E Root resistant 6.0Kg/m²	

INSULATIONS	BauderPIR FA-TE Flatboard	BauderPIR FA G16 Tapered	Weight Loading
THICKNESS (mm)	Approx 'U' VALUE (W/m²K) assuming concrete, metal or plywood deck		Kg/m²
120	0.17	0.17	4.56
130*	0.16	0.16**	4.94
140	0.15	0.15**	5.32
160	0.13	0.13**	6.08
180*	0.12	0.12**	6.84
200*	0.11	0.11**	7.60

* denotes thicknesses only available for orders over 1000m²

** denotes U-value based on the average thickness

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IMPORTANT NOTE

Please note that changes made to the content of this document, outside of the available choices may impact technical suitability and eligibility to meet Bauder Limited's requirements for guarantee. For additional items to be added, not already included, please contact your local Area Technical Manager.

Design Information and Supporting Documents

This specification is to be read in conjunction with the supporting Specification-Appendix & Torch Free Report (where applicable), Calculations (where available), Bauder Installation Guides and Bauder Standard Detail Drawings.

This specification has been produced based on the information supplied at the time of writing and is deemed to apply subject to the conditions outlined below, unless additional calculations proving otherwise have been completed and issued to you by Bauder Ltd or an approved supplier.

Windloads: Suitable for roofs where the design load does not exceed 3.2KN/m^2. Should the site be situated in a location subject to increased windloads or have a Design Windload Pressure suspected to be exceeding this, Bauder Ltd must be informed and a site specific windload calculation must be completed.

U-Values: U-Values quoted are based on the Bauder waterproofing system construction including insulation and underlying deck material only. This does not include the supporting structure and/or any other materials within the construction below the deck, unless Bauder has been advised otherwise prior to producing the calculations. Refer to the project specific U-Value Calculation for additional information.

Drainage: Where Bauder Ltd have produced supporting drainage calculations based on the data supplied, and the resulting calculation states that 1 drainage outlet will be sufficient, Bauder Ltd additionally recommends the use of overflows on all roofs and that there should always be at least 2 outlets and/or overflows per drainage area.

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NBS SECTION J41 - DESCRIPTION OF WORKS

Section J41 deals with the installation of the Bauder Waterproofing System, comprising coverings of multiple layers of reinforced bituminous membranes laid and jointed using self-adhesive and/or torch application as required. It includes where required, the air and vapour control layer, thermal insulation, underlayer and capping sheet membranes (root resistant for green roof systems) and presumes the deck substrate and roof falls as stated within the specification below. Accessories are included where relevant.

It is intended for use on projects where the detailed design is completed by the specifier (architect or landscape architect) with technical assistance from the manufacturer as required and should be read in conjunction with any project specific drawings provided.

Fire Regulations *(Fire Safety: Approved Document B 2019)* **- Compartmentation**

Approved Document B Vol 1: Dwellings Section 5 Internal Fire Spread covers Compartmentation (Compartmentation is covered in Section 8 of Vol 2: Buildings other than dwellings and for Scotland, Wales and NI similar consideration is necessary for both Dwellings and Buildings other than Dwellings) and there is a consideration to be made if the roof goes over a compartment wall. For New Build we will expect the Principal Designer to establish Building Control requirements and notify accordingly before construction. For Refurbishment it is not always easy for the roofing team to establish if there is a compartment wall under the roof and what is its full orientation, we will rely on the specifier or client to tell Bauder Ltd if there is a known compartment wall under the existing roof. As the requirements have proven to be open to various interpretations across Building Control authorities, the Bauder advice is to consult with the Building Control officer for the building.

'Safe2Torch' advice:

The application of torch-on materials to or in the vicinity of combustible deck materials does not conform to the recommendations of BS8217:2005, clause 7.3.2.1, paragraph 3, or the advice given in the 'Safe2Torch' document produced by the National Federation of Roofing Contractors. When encountering an area which contains combustible material a minimum 900mm deep zone of the flat area around the material and any detail flashing to the material itself there is a requirement for 'TORCH-FREE' detailing. In these instances an appropriate alternative Bauder self-adhesive membrane should be used as described in: 'TORCH-FREE' & 'Safe to Torch' DETAILING - ALTERNATIVE MEMBRANES AND APPLICATION. The 'TORCH-FREE' & 'SAFE TO TORCH' detailing and method of application will be described in the Additional Items section and the 'TORCH-FREE' & 'SAFE TO TORCH' DETAILING section of this specification and further detailed in the Bauder 'TORCH-FREE' & 'Safe to Torch' drawings.
***Please note**, there could be 'TORCH-FREE' areas within the roof area(s), however there are either no roof plans available or the design is not sufficiently complete at this stage in the project to enable Bauder to complete a 'TORCH-FREE' roof plan. Once this plan becomes available and the design is sufficiently complete, please contact the Bauder Area Technical Manager (details at the end of the specification) and this can then be created for this area.*

SCOPE OF WORKS

This section includes:

- The Bauder waterproofing system.
- Related Bauder system accessories

- Thermal insulation that meets the required U Value.
- Internal rainwater outlets (but not the connected drainage/plumbing goods)

This section does not include:

- Construction of the structural deck.
- Proprietary rainwater drainage / plumbing – refer NBS section R10
- Lightning protection – refer NBS Engineering Services, Section W60.
- Latchways Constant Force Post System – refer NBS Section N25.
- Green Roof landscaping – refer section Q37.
- Stairs/Ladders/Handrails/Balustrades – See NBS Section L30

J41 REINFORCED BITUMEN MEMBRANE ROOF COVERINGS

To be read with Preliminaries/ General Conditions.

TYPES OF COVERING

110 BUILT-UP REINFORCED BITUMEN MEMBRANE WARM DECK ROOF COVERING

- **Roof area: Green Roof Area**
- **Substrate:** New Plywood / OSB/3 deck.
  - Designed with a fall of 1:40 to a to ensure a minimum finished drainage fall of 1:80 is achieved.
  - The design should take account of construction tolerances, permitted deviations and deflections under load, as per Item 4.4 of BS6229:2018.
  - No deflections or back-falls.
  - **Preparation:** As clause 610A.
- **Primer: Bauder Activator-Primer (Canister), APR01-Black**, applied to the roof substrate and all upstands and skirtings. For application method and guidance information, refer clause 660B.
- **Air & vapour control layer: BauderTEC KSD FBS**, 2.5 mm thick aluminium lined, elastomeric bitumen self-adhesive air and vapour control layer mica finish. Installation as clauses 670G, 710.
- **Insulation: BauderPIR FA-TE Flatboard**, aluminium foil faced, highly efficient rigid urethane insulation140mm thick to achieve the required U value (refer Clause 230). Thicknesses greater than 160mm will be supplied in two or more layers of insulation board. This product has a zero ODP and a Green guide rating of 'A'. **BauderPIR T KL 50 angle fillets** 50 mm x 50 mm for use with insulated & un-insulated upstands.
  Installation as clauses 680D and 775
- **Insulating vertical upstands: BauderPIR FA-TE flatboard**, aluminium foil faced, zero ODP, highly efficient rigid urethane insulation.
  The vertical upstand(s) should be insulated, typically an external wall to a conditioned/habited space will be insulated in its own right e.g. a cavity wall, but there is still a requirement for a nominal 30mm thickness of insulation on the external face of the wall to reduce thermal bridging at the roof/wall intersection.
  This insulation will be a minimum of 300mm in height from the deck surface to the top of the upstand and will ideally be fitted before the flat insulation so that it is retained at the base.
  Bauder Insulated Upstand Support Brackets should be installed to secure the top and provide a hard-leading edge.

Rooflight upstands (e.g. Builder's Kerbs) that are not supplied by the rooflight supplier as part of the rooflight assembly must be insulated with 60mm thick **BauderPIR FA-TE flatboard** insulation to achieve a maximum U value of 0.35W/m²K.
Installation as clause 681B.

- **Waterproof covering:** BAUDER TOTAL GREEN ROOF SYSTEM
- **System manufacturer:** Bauder Limited, 70, Landseer Road, Ipswich, Suffolk, IP3 0DH.
  Tel: 01473 257 671. Fax: 01473 230 761. **Email:** technical@bauder.co.uk
  Web: www.bauder.co.uk
  Site contact details - Site Technician: , Tel:
  Technical Contact Details - Area Technical Manager: Jonathan Bunn, Tel: 07885291982
  - **Primer: Bauder Activator-Primer (Canister), APR01-Black**, applied to the upper surface of the Bauder insulation. For application method and guidance information, refer clause 660B.
  - **Underlayer: BauderTEC KSA DUO**, 3 mm thick, 200g/m² glass-fibre reinforced, elastomeric self-adhesive bitumen underlayer.
    Attachment: As clauses 710, 747A.
  - **Top layer / Cap sheet: BauderPLANT E**, 5.2mm thick, 250g/m² polyester reinforced, elastomeric bitumen root resistant, torch applied capping sheet, green slate finish.
    Attachment: As clauses 710, 750B.
  - **Flashings and detail work: BauderPLANT E** root resistant capping sheet or **Bauder K5K** capping sheet, mineral slate finish as per main field area. Install as clauses 773, 775 & 777.
- **Surface protection:** N/A
- **Surfacing:** Extensive green roof landscaping - refer Section Q37-130?
- **Accessories: -**
  - **Bauder Bitumen Compact Vertical Outlet DN 100 or Bauder Bitumen Vertical Outlet DN 70 / DN 150**, (as appropriate) complete with pre-attached bitumen connection flange and dome grating. To be supplied and installed – quantity as required. When this outlet is used within a warm roof construction with insulation depth 60mm or greater, the **Bauder Extension Unit** (supplied separately) must be used. Installation as clause 784A.
  - **Bauder GRP edge trim** (where required) to all perimeter kerbs – Profile: Client to confirm / Type 1 (44mm) / Type 2 (44mm) / Type 3 (70mm) / Type 4 (100mm) / Type 6 (150mm). Colour: Client to confirm / Black / Grey. Installation, as clause 785.
  - **Bauder Lightning Conductor Clips** (where required) – Type 4 for PVC coated tapes and uncoated tapes. Installation, as clause 786.
- **Additional Requirements:** 210, 230, 515, 520, 560, 561, 562, 910, 940.
- **Guarantee information:** Refer clause 950A.

PERFORMANCE

210 ROOF PERFORMANCE

- **General:** Secure, free draining and weather tight.

230 INSULATION

- **Thermal transmittance of roof (maximum):** 0.15W/m²K (140mm) U-Values quoted are based on the Bauder waterproofing system construction including insulation and underlying deck material only. This does not include the supporting structure and/or any other materials within the construction below the deck, unless Bauder has been advised otherwise prior to producing the calculations. Refer to the project specific U-Value Calculation for additional information.
- **Finished Surface:** Suitably even, stable and robust to receive roof covering.
- **Insulation compliance:** To relevant British Standard or Agrément certified.

PRODUCTS

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:** Contract Administrator to advise. Please note organic solvent based timber preservatives are not permitted, as may affect the waterproofing.

331 PREFORMED METAL HARD EDGE INSULATION PROTECTION ANGLES

- **Material:** Galvanised mild steel
- **Thickness:** 1mm
- **Dimensions:** 50 mm x 50 mm
- **Length:** 3m max.

EXECUTION GENERALLY

515 ADVERSE WEATHER

- **General:** Do not lay coverings in high winds, wet or 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.

520 INCOMPLETE WORK

- **End of working day:** Provide temporary seal to prevent water infiltration.
- **On resumption of work:** Cut away tail of membrane from completed area and remove from roof.

560 GENERAL WORKMANSHIP REQUIREMENTS

- Installation of the Bauder waterproofing system may only be carried out by trained and certified operatives approved by Bauder Ltd and who carry current ID badges. These should be available for inspection at all times.
- Workmanship must comply with Codes of Practice BS 8217:2005 (or alternatively Bauder Ltd.'s specification where otherwise stated). Non-compliant workmanship will not be permitted, even if the system is watertight. The client will be told that all such faults must be remedied, before the Guarantee is issued.
- All waterproofing materials and system components must be supplied by Bauder Ltd, unless otherwise stated. Any sub-standard materials or un-authorised alternatives will be rejected. Any building work which is the responsibility of the roofing contractor and has a bearing on the life of the Bauder System must be carried out by properly trained and qualified tradesmen.
- Any structural damage, peculiarities or details discovered that might affect the performance of the Bauder system, should be reported immediately to the client's representative and Bauder Limited in order that they may assist in overcoming the problem.
- At the end of each working day, the new waterproofing should be terminated with a secure and waterproof temporary seal, which will be left in situ, utilising **Bauder** self-adhesive underlayer material (e.g. **BauderTEC Sprint DUO**) to create the seal. The **Bauder** self-adhesive underlayer should be extended onto the flat AVCL by a minimum of 200mm from the exposed edge of the insulation and heat activate to ensure a satisfactory seal.
  To ensure that no moisture contamination of the system can occur between each working period, it is essential that the night seal is properly and securely bonded.

- Where building works are to be carried out by other trades, following completion of the waterproofing, the contractor must make adequate provision for supplying protection to prevent damage to the new membranes. The final inspection will not be carried out by the Bauder Site Technician or the Bauder nominated Independent surveyor until all associated trades are complete and the roof areas are clear from all debris and protection layers.
- It is imperative that the Bauder Approved Contractor conforms to the workmanship criteria as listed above. Any deviation will result in the contract being considered unguaranteeable.
- All mechanical and electrical work to plant and equipment should be carried out by competent mechanical and electrical qualified tradesmen. All plant is to be reinstated and re-commissioned on completion of the roofing works in accordance with the client's detailed specification.
- Where building works are to be carried out by other trades, following completion of the waterproofing, the contractor must make adequate provision for supplying protection to prevent damage to the new waterproofing.
- If any items of plant/equipment are to be situated on the finished roof, a sacrificial layer of Bauder capping sheet is to be loose laid beneath. This is to extend a minimum 25mm past the point of contact on all sides. In the case of heavy items it may be necessary to introduce a load-spreading slab, please contact Bauder for further advice.
- All lead work to be carried out by skilled tradesmen and in accordance with current codes of practice and the recommendations of the Lead Contractor Association.

561 SITE INSPECTIONS

- Bauder Site Technicians will carry out regular inspections of the project during the course of the works.
- Bauder must be notified when the roof is ready for final inspection and all related works and snagging complete. See also clause 910.

562 HEALTH & SAFETY INFORMATION – ROOFING WORK

1. Follow the advice shown in the “Responsible Specification Checklist” produced by the National Federation of Roofing Contractors.

2. Suitable precautions must be taken to prevent accidents occurring when roofing systems are being installed.

3. The contractor must ensure that adequate measures are taken to effectively prevent injury to members of the public, contractors and any other persons who may be affected by the works including the public.

4. Where microwave equipment is installed at roof level, care must be taken to prevent persons working on the roof from being exposed to large doses of microwave radiation.

5. Similarly, the contractor should liaise with the client to ensure that there are no extract outlets situated on the roof where noxious or harmful emissions could affect persons working. Suitable precautions will be necessary to prevent exposure where this situation arises.

6. The contractor is responsible for providing adequate firefighting equipment in the form of extinguishers during work on the roof. These should be kept in easily accessible locations and be suitably signed.

7. Whenever possible, access to the roof should be made via internal staircases rather than by temporary means. Where this is not available, it is the responsibility of the contractor to ensure a safe means of access, egress and a safe workplace.

   As far as roofs are concerned, edge protection in the form of scaffolding or a fixed structure should be in place to a height of 1.1 metres in accordance with the Workplace (Health, Safety and Welfare) Regulations 1992.

   Failing this, the hierarchy of controls should be applied from the Work at Height Regulations 2005. Means of access should be by fixed ladder, passenger hoist or scaffolding.

8. The contractor must ensure that suitable written method statements and risk assessments are available for the work being undertaken. In particular, it is essential that manual handling methods be fully assessed as roofing materials are heavy and can cause serious injury.

9. The contractor must ensure that suitable information about the roof covering is provided to the Client at the end of the work to ensure that work in future can be carried out safely. This information will form part of the Safety File.

10. All persons working on the roof should be provided with, and wear, suitable personal protective equipment and wet weather gear. Training must be provided to all contract staff on the safe use of the equipment.

11. The installer must observe Product Safety Datasheets, relevant to the materials being used as well as completing and complying with COSHH risk assessments.

12. We draw your attention to your duties under the Construction (Design and Management) Regulations 2015. Regulation 4, Client's duties in relation to managing projects states that the client must make suitable arrangements for managing a project, including the allocation of sufficient time and other resources. Regulation 5, Appointment of the Principal Designer and the Principal Contractor states that where more than one contractor will be working on a project at any time, the client must appoint a Principal Designer and a Principal Contractor.

    Please note that although Bauder will assist with the roof waterproofing system design, we will not undertake the role of Principal Designer.

13. It is always the responsibility of the contractor to carry out a risk assessment on all aspects of the contract. The 'Safe2Torch' checklist is solely for guidance for the safe installation of torch-on reinforced bitumen membranes and use of gas torches in the workplace

SUBSTRATES / AIR & VAPOUR CONTROL LAYERS / WARM ROOF INSULATION

610A SUITABILITY OF SUBSTRATE

- **Substrates Generally:**
  - Secure and properly fastened to the sub-structure, clean, dry, smooth, free from frost, corrosion, contaminants, loose material, damage and protrusions.
  - Compatible with waterproofing / coating system.
- **Substrate Design:**
  - Plywood should conform to BS EN 636-3 S (Structural) Condition of Use Service Class 3 (Exterior), minimum 18mm thickness as specified by client.

- OSB/3 should conform to BS EN 300 & CPD/CE, minimum 18mm thickness as specified by client.

- **Setting out:** The new deck, should be fixed directly to either the joists or firings using non corroding ring shank nails/recommended screw fasteners.
  - All board edges should be fully supported by either the joists, firings or noggins.
  - Board joints to be close butted and staggered in accordance with BS 8217. Expansion gaps between boards on long and short edges to be 3mm.
- **Fasteners:**
  - Type: As recommended by panel manufacturer.
- **Fastener heads:** Flush with, or below the boards surface.
- **Moisture content and stability of substrate:** The deck should be protected from wetting during transportation, storage and installation on site before the Waterproofing System is installed. Before installing the waterproofing system, moisture readings should be taken into the timber deck and not just the surface. The results should be recorded. Readings should be no more than 20%.
- **Deck Falls:** Refer to clauses 110/120/130 above (where appropriate) for roof specific requirements.
  - No deflections or back-falls shall be present if the deck is designed to achieve a zero falls finished surface.
  - Falls to comply with the drainage requirements of BS 6229:2018 and current codes of practice BS 8217:2005.
  - The design should take account of construction tolerances, permitted deviations and deflections under load, as per Item 4.4 of BS6229:2018.
  - An Engineer's deflection analysis and site level survey should be consulted before commencement of waterproofing. Measures to rectify back-falls or deflection shall be undertaken by the deck installer/supplier prior to commencement of the waterproofing system.
- **Preliminary work:** Complete including:
  - Formation of upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
  - Fixing of battens, fillets and anchoring plugs/strips.
- **Preparation:** The approved waterproofing contractor is to inspect the installed deck and report any issues, including insufficient falls, that may have a detrimental effect upon the waterproofing system to both the Clients representative and Bauder Limited.
- **Priming:** Before priming and application of the membrane, the substrate shall be clean and dry, free from surface water, ice, snow or frost, dust, dirt, oil, grease, or any foreign matter detrimental to the adhesion of the waterproofing system.

640 FIXING TIMBER TRIMS

- **Fasteners:** type/length appropriate and suitable to particular deck substrate.
- **Fixing centres (maximum):** 500 mm.

641 INSTALLING PREFORMED METAL HARD EDGE INSULATION PROTECTION ANGLES

- **Location:** Use to provide hard edge protection at all internal gutter channels on warm roofs where the insulation from the flat area steps down to meet the insulation in the gutter sole.
- **Preparation:** Surface to be inspected and cleaned if necessary, using white spirit to remove any contaminants, dirt or dust & primed with the specified Bauder primer. Prepared material to be thoroughly dry before use
- **Installation:** The 50 x 50 mm galvanised mild steel angle to be adhered to the exposed leading edge of the insulation using the specified Bauder primer along the upper surface/edge. The purpose being to retain the metal in position to prevent any post-installation movement.

660B APPLYING PRIMER

- **Primer: Bauder Activator-Primer (Canister), APR01-Black**.
- **Purpose:** Substrate primer to seal and prepare dry surfaces of a variety of common substrate material prior to the application of Bauder self-adhesive bitumen membranes.
- **Before application:** All surfaces must be dry, clean and free from dust, dirt, oil, grease and loose material.
- **Application method:** Spray Applied to provide even and full coverage. Avoid pooling. Never attempt torching within 10 min of primer application, even if the surface appears dry.
- **Application rate:**
  - 300mm wide spray
  - Coverage: Approx. 96 g/m²
  - Two coats may be required for very porous substrates.
- **Application temperature:** +5 - +30°C
- **Drying time:** Approx.5 - 10 mins, dependent upon ambient temperature and material porosity.
- **Coats:** Fully bond. Allow volatiles to dry off thoroughly between coats.
- **Re-application:** Necessary after 4 hours exposure if waterproofing has not yet been applied, to maintain adhesion performance.
- **Caution:** Use only outdoors in well ventilated areas or with respiratory apparatus and keep away from all sources of ignition. Take necessary precautions to avoid the solvent vapour from entering the buildings ventilation system.

670G LAYING AIR AND VAPOUR CONTROL LAYER

- **Attachment:** Generally, cold applied and fully bonded to substrate in accordance with Bauder requirements.
  Metal Decks: With metal decks the sheets should run in the direction of the crowns/troughs, with laps formed on the crowns of the deck to ensure that they are fully supported in accordance with Bauder requirements. To ensure side laps of the air and vapour control layer (AVCL) are fully supported, they will need to have the width cut to suit the profile of the deck or larger laps should be formed. To support end laps, cut approximately 200mm strip off the end of the AVCL roll and apply it taut across the troughs where the roll ends will meet.
  Timber Boarded / Cross Laminated Timber Decks: First layer random nailed, as clause 355/720. Second layer, **BauderTEC KSD FBS** cold applied and fully bonded to substrate in accordance with Bauder requirements.
- **Side and end laps:** minimum 100 mm, laid with all laps heat sealed to provide a continuous bitumen bead extrusion. Installation methods as recommended by Bauder.
- **Penetrations:** Fully seal using bonding methods recommended by Bauder.
- **Edges of insulation at roof edges, abutments, upstands, kerbs, penetrations and the like**: Enclose, with air and vapour control layer:
  The air and vapour control layer must be dressed up all upstands and to the full extent of the detail. This is to ensure that the detail is fully encapsulated to reduce the risk to exposed combustible materials. The contractor is also to form all details in such a way that the underlayer is fully bonded to the air and vapour control layer to the full extent of the detail ensuring in a minimum fully bonded 100mm lap with the air and vapour control layer – please see Bauder Bituminous detail drawings.
  - Care should be taken to ensure adhesion when the temperature is below + 5º C.

680D LAYING WARM ROOF INSULATION

- **Setting out:**
  - **Long edges:** Fully supported
  - **End edges:** Fully supported.
  - **Joints:** Close butted together.

- End joints: Stagger.

- **Bedding**: Bonded to the upper surface of the air and vapour control layer (AVCL) using suitable Bauder Polyurethane Insulation Adhesive. (Product selection assistance available from Bauder). The adhesive should be applied in strips following the direction of the board length. Giving continuous and equally spaced adhesive beads within each board width as indicated below:
  - 600mm width insulation boards - 2 no: (increase to 3 no. at roof perimeter)*
  - 800mm width insulation boards - 3 no: (increase to 4 no. at roof perimeter)*
  - 1000mm width insulation boards - 4 no: (increase to 6 no. at roof perimeter)*

  Adhesive bead widths or adhesive spray patterns and coverage rates are stated on appropriate product label and datasheet.
- **Multiple board layers:** Where the total thickness of insulation required is greater than can be achieved by a single standard board, additional boards can be adhered to the previous layer (s) to make up the total thickness required.
  Foil to Foil Insulation Boards Only: These additional boards should be bonded using either **Bauder Activator Primer (Canister) – APR01-Black** or **Bauder PU Insulation Adhesive – Twin Cartridge**.
  Foil to Tissue Faced Boards: These additional boards should be bonded using suitable Bauder Insulation Adhesive.
  Adhesives applied in strips following the direction of the board length giving continuous and equally spaced adhesive beads within each board width (as indicated above). The second layer of boards should be laid off-set and staggered.
- **Protection to exposed edges of insulation:** Reduced thickness treated timber batten as clause 640 (or equivalent plywood construction), a minimum width of 150mm and 10mm less in thickness than the insulation to accommodate the build-up of the waterproofing layers – all securely fixed to the deck. Outer edges chamfered at changes in level.
- **Completion:** Boards must be in good condition, well-fitting and stable.
- **IMPORTANT NOTES:**
  - **Bauder Activator-Primer (Canister), APR01-Black**, must be applied to the uppermost surface of insulation prior to installation of the self-adhesive underlayer.
  - Foil to Foil installation (e.g. FA-TE to FA-TE) must not be carried out using the 6.5kg **Bauder PU Insulation Adhesive – Tin.**
  - Foil to AVCL installation (e.g. FA G16 Tapered directly to KSD FBS) must not be carried out using **Bauder Activator Primer (Canister) – APR01-Black**.
- **Adequate falls:** The inclusion of flat board insulation will not improve upon the existing fall present within the roof structure. The deck should be inspected by the installer to ascertain that the falls provided are adequate to prevent standing water. In the event of any queries Bauder Ltd should be contacted.

**BS EN 1991-1-4 uses the following guidance to calculate perimeter zones. Buildings up to and including 10m in height have a perimeter zone of not more than 2m. Buildings over 10m, uses the calculation of 2 x the building height ÷ 10. These are general guidance rules and do not take into account all of the information used in a full wind uplift calculation, they are therefore superseded by a project specific calculation.*

681B INSTALLING WARM ROOF INSULATION (INSULATED UPSTANDS)

- **Bedding:** Bonded to the upper surface of the air and vapour control layer (AVCL) using suitable Bauder Polyurethane Insulation Adhesive. The adhesive should be applied in strips following the direction of the board length giving 3 no. continuous and equally spaced adhesive beads within each board width. Upstand insulation boards should be installed before the insulation to the flat areas so that the vertical upstand insulation is retained both at the base and at the top. Adhesive bead widths are stated on appropriate product label and datasheet.

Note: Where the surface is uneven of difficult to bond to, it is permissible to use suitable thermally broken fixings.

- **Multiple board layers:** Where the total thickness of insulation required is greater than can be achieved by a single standard board, then additional boards can be adhered to the previous layer(s) to make up the total thickness required. These additional boards should be bonded using suitable Bauder Insulation Adhesive.
  Foil to Foil Insulation Boards Only: These additional boards should be bonded using either **Bauder Activator Primer (Canister) – APR01-Black** or **Bauder PU Insulation Adhesive – Twin Cartridge**.
  Foil to Tissue Faced Boards: These additional boards should be bonded using suitable Bauder Insulation Adhesive.
  Adhesive bead widths or adhesive spray patterns and coverage rates are stated on appropriate product label and datasheet.
  The adhesive should be applied in strips following the direction of the board length giving 3 no. continuous and equally spaced adhesive beads within each board width. Upstand insulation boards should be installed before the insulation to the flat areas so that the vertical upstand insulation is retained both at the base and at the top.
  The second layer of boards should be laid off-set and staggered.
  Note: Where the surface is uneven of difficult to bond to, it is permissible to use suitable thermally broken fixings.
- **Insulated upstand brackets:** Bauder insulated upstand support brackets must be used at all vertical abutment wall upstands (where the wall cavity is insulated) in conjunction with 30mm Bauder insulation. These are to be fixed at 400mm centres using suitable fixings through the air and vapour control layer, so that the top edge is a minimum of 300mm above the surface of the deck. A 3mm gap should be left between adjacent sections. The detail is to be carried out in accordance with the Bauder detail drawing, where provided.
- **Protective hard edges:** treated timber battens or Bauder Insulated upstand brackets (as appropriate to given detail situation) must be used at all right-angled edges e.g. top edges of parapet walls or abutment upstands.
- **Encapsulation seal:** Provision must be allowed for forming a minimum 100mm lap seal between the air and vapour control layer and underlayer where the insulation finishes.
- **Important Notes:**
  - **Bauder Activator-Primer (Canister), APR01-Black**, must be applied to the facing of the uppermost surface of insulation prior to installation of the self-adhesive underlayer.
  - Foil to foil installation (e.g. FA-TE to FA-TE) must not be carried out using the 6.5kg **Bauder PU Insulation Adhesive – Tin.**
  - Foil to AVCL installation (e.g. FA G16 Tapered directly to KSD FBS) must **not** be carried out using **Bauder Activator Primer (Canister) – APR01-Black**.

WATERPROOF COVERINGS/ ACCESSORIES

710 LAYING REINFORCED BITUMEN MEMBRANES GENERALLY

- **Direction of laying:** Unrolled up the slope.
  - Where practicable, install so that water drains over and not into laps.
- **Side and end laps (minimum):** 100 mm, with the exception of mineral surfaced membranes, where side laps are 80 mm, but the head laps to remain 100 mm.
- **Head and side laps:** Offset.
- **Intermediate and top layer/Capping sheet:** Fully bond.
- **Successive layers:** Apply without delay. Do not trap moisture.
- **Strips of bitumen membrane for 'linear' details:** Cut from length of roll e.g. gutter sole pieces.

- **Detail flashings:** to be cut from width of roll.
- **Completed coverings:** Firmly attached, fully sealed, smooth, weather proof and free draining.

747A SELF-ADHESIVE BONDING OF REINFORCED BITUMEN UNDERLAYER

- **Bond:** Full over whole surface, with no air pockets.
  Please note that **Bauder Activator-Primer (Canister), APR01-Black**, must be applied to the uppermost layer of Bauder Insulation prior to installation of the self-adhesive underlayer.
- **Underlayer:** Cold applied and fully bonded by removing the peel off release film. The side laps are to be 100mm and must be **laid red over blue,** and heat sealed/torched (depending on 'Torch-Free' & 'Safe to Torch' zones) and rolling with the **Bauder Long Handled Lap Roller** to extrude a continuous bead of bitumen. Head laps to be 100mm and staggered, side laps to be 80mm and heat sealed/torched (depending on 'Torch-Free' & 'Safe to Torch' zones) to extrude a continuous bead of bitumen. The underlayer must be taken up all upstands, edge details, in accordance with current British Codes of Practice and Bauder recommendations. The underlayer must be fully heat sealed/torched (depending on 'Torch-Free' & 'Safe to Torch' zones) with the air and vapour control layer to the full extent of the detail ensuring a minimum 100mm fully bonded lap - please see Bauder Bituminous detail drawings.
- **Alternative underlayer for detail work:** For detailing to un-insulated abutment upstands, where the waterproofing is to be applied to rough or uneven non-combustible surfaces i.e. brickwork or concrete, it is permissible for the installing contractor to use the Bauder underlayer appropriate to the specified system where this product is considered to be better for application to these surfaces. For all other situations, and particularly to vertical insulation, the Bauder Self-Adhesive Underlayer appropriate to the specified system must be used.
- **Provision for prevention of wind uplift (where required):** Mechanically fix as per the corresponding project specific wind load calculation, using appropriate thermally broken fasteners (for uninsulated roofs as clause 355A and for warm roofs as clause 355B), fixed through to the deck.
- **Fixing of bitumen membranes to vertical upstands:** Please refer to clause 775.

750B LAYING REINFORCED BITUMEN TORCH-ON CAPPING SHEET - 'SAFE TO TORCH' ZONE

- **Bond:** Full over whole surface, with no air pockets.
- **Excess compound at laps of top layer/ capping sheet:** Leave as a continuous bitumen bead extrusion.
- **Laying top layer:** Fully bonded to the underlayer by torching in the approved Bauder manner. Head laps to be 100 mm, side laps to be 80 mm. All laps to upstands, edge details, flashings, etc. to be 100 mm.
- **Fixing of bitumen membranes to vertical upstands:** Please refer to clause 775.
- **Final Inspection:** No landscaping is to be applied until the root resistant capping sheet has been thoroughly inspected by the Bauder Site Technician. This is to ensure that any remedial treatment that is necessary can be carried out prior to laying the landscaping elements. Failure to ensure the instigation of this inspection will result in the issuing of the Bauder guarantee being put in jeopardy.
- **IMPORTANT NOTE:** The mineral slate finish is a natural product, so the raw material may differ in colour and shade, over which Bauder has no control. There may also be colour variations between each roll of membrane.

FLASHINGS AND DETAIL WORK

773 'TORCH-FREE' & 'SAFE TO TORCH' ZONES - ALTERNATIVE MEMBRANES AND APPLICATION

For detailing application in locations constructed from or within the 'Torch-Free' & 'Safe to Torch' zones to potentially combustible materials or otherwise where it is considered appropriate by the contractor necessary to minimise the potential risk.

- **Primers: Bauder Activator-Primer (Canister), APR01-Black**, must be used when using Bauder self-adhesive membranes and a 'TORCH-FREE' application is required.
- **Underlayers:**
  It is permissible to use a Bauder self-adhesive membrane so long as this product is a recognised component of the system specified.
  Acceptable alternatives underlayers are listed below: -
  - **BTRS: BauderFLEX G4E** to be replaced with **BauderTEC KSA DUO**
  - **BauderFlex: Bauder EGV 35 TF** to be replaced with **BauderTEC Sprint DUO**
  - **BTRS Plus:** N/A
  - **System Airtech:** N/A

  NB: Where surface is uneven or not suitable for a self-adhesive membrane and where the surface is of a non-combustible material and is not required to be a 'Torch-Free' or 'Safe to Torch' zone – it is permissible to use a Torch Applied underlayer, so long as the product is a recognised component of the system specified.
  Acceptable alternative underlayers are listed below:
  - **BTRS: BauderTEC KSA DUO** to be replaced with **BauderFLEX G4E**
  - **BauderFlex: BauderTEC Sprint DUO** to be replaced with **Bauder EGV 35 TF**
  - **BTRS Plus:** N/A
  - **System Airtech:** N/A
- **Capping sheets:** Where appropriate, the installing contractor can use **BauderTEC KSO-P SN / KSO SN / KSO ALP SN** self-adhesive capping sheet, applied using the hot air hand tools approved for use with bituminous systems. Please note that **Bauder Activator-Primer (Canister), APR01-Black**, must be applied to the underlayer prior to installation of the self-adhesive capping sheet.
  BauderTEC KSO-P SN is only available in one colour – Charcoal Grey.
  BauderTEC KSO SN is only available in one colour – Grey Slate.
  BauderTEC KSO ALP SN is only available in one colour – Brown.
  Self-adhered membranes - For upstands using only self-adhesive membranes, these will need to be mechanically fixed at the top leading edge of the membrane with Bauder aluminium peel bar regardless of the upstand height. This will be for System Airtech and for areas referred to as 'Torch-Free' zones. Please refer to Bauder Bituminous Standard Detail Drawings.
- **Green Roof Notes:** Please note it is strictly only permissible to use self-adhesive capping sheet for flashings and detailing work when installing **BauderGREEN XF 301 Sedum Blanket** or Hard landscaping finishes.
- **Approved Hot Air Equipment**
  The **BauderTEC KSO-P SN / KSO SN / KSO ALP SN** membrane must be applied using the approved hot air hand tools. The list of permissible hot air electrical equipment suppliers for installing Bauder waterproofing membranes are stated below. These are available either for purchase or hire from the below companies:

  HOT AIR WELDING EQUIPMENT

  LEISTER

  Contact: Welwyn Tool Group, Tel 01707 331 111, http://www.welwyntoolgroup.co.uk

  SIEVERT

Contact: Lister Gas Pro, Tel 0800 801 046, ch300@lister.co.uk

775 SKIRTINGS AND UPSTANDS

- **Angle Fillets: BauderPIR T KL 50 angle fillets (50 mm x 50 mm)** must be used at all right-angled upstands.
  - Warm Roof Construction: Provisionally bonded in suitable **Bauder Polyurethane Insulation Adhesive** or **Bauder Activator-Primer (Canister), APR01-Black**, and subsequently retained once the underlay detailing is applied.
  - Uninsulated/Inverted Roof Construction: Coat both the surface area to receive the angle fillet and the angle fillet with **Bauder Activator-Primer (Canister), APR01-Black**. Once both surfaces are tacky, place the angle fillet in the correct location and apply pressure to the angle fillet to ensure adhesion is achieved.

  Important note - under no circumstances must fillets of an alternative material be incorporated (i.e. timber, cork, fibre, etc.) as this would invalidate the guarantee.
- **Layers of bitumen membrane:** Carry in staggered formation up the upstand, with each layer fully bonded.
- **Upstands:**
  - **At ends of rolls:** Underlay layer only, form with bitumen membrane carried up without using separate strip.
  - **Elsewhere:** Form with matching strips of bitumen membrane, maintaining laps.
- **Upstand details (150mm minimum height):** This must be taken from the finished roof surface. Please note that for landscaped roofs, this minimum height is measured from the finished landscape surface as opposed to the waterproofing surface. *Special attention should be paid to all structures, such as rooflights, counter-flashings, window and door cills, pipes etc. Bauder cannot take responsibility for water ingress over waterproofing details constructed below the recommended minimum height.
- **Level Thresholds:** Acceptable, providing conforms to BS6229:2018 and current NHBC Standards, chapter, 7.1.

  Requirements:
  - Minimum 75mm upstand height. (This must be taken from the waterproofing or top of the insulation if an inverted roof).
  - Falls are directed away from the door cill.
  - Waterproofing is dressed up and under the door cill. Prior to installation of the door frame, the membranes must be dressed up the reveal to a minimum 150mm in height.
  - Door cill has a minimum 45mm overhang.
  - Provision is made for emergency overflow to prevent water getting to the waterproofing and cill interface.

  Any level threshold details not meeting this standard cannot be guaranteed by Bauder.

  Note: Bauder recommends the installation of a linear drain (**BauderGREEN ER MR 150/60 linear drain and grill plate** is suitable for this purpose) in front of the access door threshold, to help prevent rainwater splash back and snow build-up.
- **Flashings:** Separate flashings must always be formed. Capping sheet taken up the upstand in one piece will not be permitted.
- **Green Roof Notes:** If the client should desire not to see a green mineral finish then it is permissible to install a piece of suitable colour Bauder bituminous capping sheet membrane. The Bauder root resistant capping sheet must be taken a minimum 150mm from the finished landscaping surface*. The suitable coloured Bauder bituminous capping sheet must be lapped onto the Bauder root resistant capping sheet by a minimum 150mm and lapped onto the structure by a minimum of 100mm.
- **Fixing of bitumen membranes to vertical upstands:**

Where upstands terminate in excess of 250mm above the finished surface of the main field area capping sheet, screw fix through into the underlying substrate as per the requirements set out below and in accordance with the Bauder Reinforced Bitumen Membrane Installation Guide.

UNDERLAYER - INSULATED UPSTANDS ONLY:

Prior to the installation of the self-adhesive underlayer, ALL insulation board types used to create an insulated upstand require a coating of **Bauder Activator-Primer** applied to the surface of the insulation board. The Activator-Primer should be applied at a rate of 96g/m².

Insulated upstands exceeding 600mm in height will require additional fixings through the insulation board depending on the board type used, at a rate of:

- **BauderPIR FA-TE**, 5No. fixings, one in each corner and one in the centre
- **BauderROCK**, 1No. fixing, in the centre of the board.
- **BauderGLAS** 1No. fixing, in the centre of the board.

CAPPING SHEETS - ALL UPSTANDS:

Terminating on the vertical: Where the capping sheet is required to terminate on a vertical face, a **Bauder Aluminium peel bar** is to be used, mechanically fixed at 150mm centres (as per pre-drilled holes) with appropriate fixings suitable to the substrate. Unless protection is being provided to the top leading edge of the membrane by an external component, the termination should then be covered with the specified counter flashing material dressed over the top to ensure waterproofing integrity.

Should a traditional lead counter flashing be used, then a separating tape will need to be used between the aluminium bar and lead flashing.

Please note: *A Bauder termination bar is not to be used in this scenario unless it has been specified by Bauder. Termination bars are not suitable for brickwork substrates. No additional membrane cover flashing is required.*

Terminating on the horizontal: Where the capping sheet is taken onto the horizontal, e.g. on top of the parapet, the membrane must be fixed (using fixings appropriate and suitable to the substrate) with either:

- A **Bauder Aluminium peel bar**, mechanically fixed at 150mm centres (as per pre-drilled holes).
- 5No. screws and washers per capping sheet width, one fixing set in 50mm from the edge of either side of the sheet, with the three remaining fasteners equally spaced in between.
- A **Bauder GRP Trim**, mechanically fixed at 300mm centres (maximum) using screw fasteners of type appropriate to kerb or deck substrate. Nail fixing is not permitted.

Capping sheet cover flashing: - A separate flashing of Bauder capping sheet will be required to cover the fixings (please see Bauder detail drawings).

Please note: *Upstands using only self-adhesive membranes (E.g. System Airtech and areas referred to as 'Torch-Free' zones) will need to be mechanically fixed at the top leading edge of the membrane with a Bauder aluminium peel bar regardless of the upstand height, unless it is retained by a GRP Trim on the horizontal.*

Where an exposed edge of Bauder capping sheet terminates on its vertical edge, a separate lead cover flashing must be installed to protect the edge of the exposed membrane. This lead flashing must extend onto the membrane by a minimum 100mm and to the full height of the vertical flashing, then extended underneath the horizontal cover flashing to protect the top leading edge.

Upstands that exceed approximately 1100mm: -

Bauder Ltd do not advocate the use of bitumen waterproofing on upstands exceeding approximately 1100mm due to consideration of the fire regulations. This should be carried out in an appropriate alternative as specified by the client. Please consult with Building Control for confirmation of upstand waterproofing requirements where the height exceeds 1100mm.

MECHANICAL FASTENER SUPPLIER

SFS Group Fastening Technology Ltd. 153 Kirkstall Road, Leeds, West Yorkshire. LS4 2AT
Tel: +44 (0)113 208 5500, Fax: +44 (0)113 208 5539, Email: uk.leeds@sfsintec.biz
Web: www.sfsintec.biz/uk
Mechanical Fasteners:
Type: IWF-5.2x35 screws together with associated IFC/IW–82x40 galvanised pressed steel washer plates.

777 SECONDARY WEATHERING (PIPES, DUCTING etc.)

- Provision must be made to supply and install a secondary weathering flashing above all waterproof upstand detailing to pipe penetrations, balustrade posts, cable entry pipes, ventilation ducting, sun pipes etc. This can take the form of a welded collar (where appropriate) or a bespoke galvanized cowling or hood sealed with a suitable sealant and fasteners. Solvent welded plastic collars fitted to plastic soil vent pipes.

784A ROOF DRAINAGE OUTLETS

- **Product name: Bauder Bitumen Vertical Outlet**
- **Material:** Cast polyurethane body with integral bituminous connection flange.
- **Product size/ reference:**
  - **Bauder Compact Vertical Outlet DN 100**, 6.1 litres/sec. flow rate, with vertical spigot designed to connect to standard 110mm pipework.
  - **Bauder Vertical Outlet DN 70**, 7.1 litres/sec. flow rate, with vertical spigot designed to connect to standard 75mm pipework.
  - **Bauder Vertical Outlet DN 150**, 7.2 litres/sec. flow rate, with vertical spigot designed to connect to standard 160mm pipework.
- **Flow rate:** (Based upon vertical pipework and a 35 mm head of water pressure – according to BS EN 12056:3:2000).
- **Pipe connection: Bauder High Capacity Vertical Outlet** are suitable for connection to:
  - uPVC "O" ring socketed soil grade pipe to BS 4514: 1983
  - Socketed and socket-less cast-iron pipework to BS 416:1973 and EN 887. Socketed pipework will require cold caulking or PVC to cast iron adaptors. Socket-less pipework can be connection using an appropriate SML mechanical coupling.
  - HDPE pipework with appropriate SML mechanical coupling
- **Type of grate/ fittings:** supplied with a tough polyamide Dome Grate leaf guard.
  Alternative: **Bauder Locking Leaf Guard Long Leg:** Additional component where higher durability or security is required.
- **Bauder Extension/Compact Extension Unit - Warm roofs only:** When the outlet is used as part of a warm roof build-up and the insulation thickness exceeds 60 mm, an additional extension component must be used. The **Bauder Extension Unit** is suitable for use with Insulation:
  - 60mm - 220 mm.

  If the insulation is below 60mm a timber frame must be built to accommodate the outlet.
- **Extension Unit Housing** – Polyurethane housing board 500 x 500 x 60mm with pre-molded opening to receive the **Bauder Extension Unit**. Thermal Conductivity 0.025 W/Mk. Compressive Strength 200 kPa and a Density of 50 kg/m³.
  - **Material:** Cast polyurethane body with integral bituminous connection flange.
  - **Fixing:** The extension unit must be mechanically fixed through the PUR rim to the structural deck.
  - **Type of grate/ fittings**: When required the Dome Grate leaf guard is transferred from the **Bauder Compact Vertical Outlet**.
- **Bauder Vertical Outlet - Installation requirements:** These components that form part of the Bauder waterproofing system and for guarantee reasons, should only be installed by Bauder

Approved installers. Connectivity to below deck drainage pipework to be the responsibility of the plumbing contractor.

- **Fixing:** The outlet is to be secured through the rim to the structural deck by a minimum of four fasteners appropriate to obtain an adequate attachment to the deck substrate material. Some deck structures require preparatory works before the outlets can be installed: -
  - **Concrete decks** – the opening for the outlet to be either pre-cast or core-drilled so that the outlet can be installed at the same time as the air and vapour control layer. Provision for a 250 mm dia. opening is required.
  - **Profiled metal decks** – these also require a 250 mm dia. Opening cut into the decking, but in addition will require a 600 x 600 x 1.25 mm galvanised steel reinforcing plate secured to the deck before the outlet can be installed. This item has a pre-cut 250 mm dia. hole and is available from Bauder.
  - For detailed information, refer to the Bauder Product Data Sheet and Bauder Detail Drawing.

785 FIXING PERIMETER TRIMS

- **Bituminous Membranes:**
  - The first layer of membrane **must** be self-adhesive and dressed to the full extent of the detail using Torch-Free methods. This is to ensure that the detail is fully encapsulated to reduce the risk of fire to exposed combustible materials.
  - Dress the underlayer up and over the perimeter detail to provide a 25mm overhang. Please refer to Bauder standard detail drawings.
- **Trim:**
  - **Setting out:** 10mm gap between the back edge of the bottom of the drip to the fascia/wall and 3mm gap between abutting lengths of trim.
  - **Fasteners:** Screw fasteners of type appropriate to kerb or deck substrate. Nail fixing is not permitted.
  - **Fixing:** 30mm from ends and at 300mm (maximum) centres, stagger fixed. Can be used to retain the capping sheet where the capping sheet is taken to the full extent of the detail – please see Bauder detail drawing.
    - 150mm deep trims (type 6) – 3no. additional fixings per length of trim. The fixings are to be face fixed with screws and positioned 75mm down from the top edge, one fixing 100mm in from each end and one in the centre and capped with coloured matched plastic weathering caps. *A fixed timber packer will be required behind the face of the trim to help facilitate ease of fixing.*
    - *For roofs above 10 metres in height* – the 100mm deep trim (type 4) will require face fixing, as per 150mm trim above. *A fixed timber packer will be required behind the face of the trim to help facilitate ease of fixing.*
  - **Jointing sleeves / bridging piece:** All lengths should be close butt jointed using an internal jointing sleeve. This must be provided to each joint.
  - **Corner pieces:** Purpose made.
- **Completion:**
  - **Contact surfaces:** Prime with **Bauder Primer.**
  - **Joints:** Cover with 200mm long pads of bitumen membrane, bonded to trim.
- **Completion of bitumen membrane:**
  - **Top layer/ Capping sheet:** Butt joint to rear edge of trim.
  - **Cover strip:** Fully bond to trim and top layer/ capping sheet of bitumen membrane. Carry over roof edge upstand and lap 100 mm onto roof. The capping sheet is to be dressed tightly into the top lip of the trim, ensuring a bead of bitumen extrudes at the edge. Please see Bauder detail drawing.

- **Wall / kerb joints:** The new trim must cover any open joint that may exist at the top of the kerb or wall, by a minimum distance of 20mm.

786 LIGHTNING CONDUCTOR CLIPS

- The lightning conductor is to be fixed using the specified conductor clips, incorporating a colour matched Bauder capping sheet pad, fully bonded to the main capping sheet at 1m centres by the approved Bauder roofing contractor. Lightning conductor retention using bituminous membrane strips are not acceptable.
- Where lightning conductors are required to be fixed to brickwork, upstands, parapet walls etc., proprietary clips mechanically fixed should be utilised. Care should be taken to ensure that fixings do not penetrate the new waterproofing system.

SURFACING

- Extensive green roof landscaping - refer Section Q37-130?

COMPLETION

910 INSPECTION

- **Interim and final roof inspections:** in accordance with the manufacturer's requirements for guarantee.
- **Notification:**
  Final Inspection: It is the responsibility of the approved contractor to advise Bauder Ltd when the roof is ready for Final Inspection. The 'Final Inspection' of the waterproofing must be carried out and approved by Bauder Ltd prior to any landscaping products/materials being installed, otherwise a guarantee cannot be issued. Safe access to carry out this inspection must be provided. **Please note**, there are/maybe further roof 'sign-off' inspections required to complete the roof(s) for this specification. If so, please note the below.
- **Sign-off Inspections:**
  Bauder Extensive Green Roofs: Bauder Extensive or Biodiverse soft landscaped green roof installations similarly require an inspection and it is the responsibility of the installing contractor to inform Bauder Ltd when the installation has been completed. Safe access to carry out this inspection must be provided.
- **Other requirements:** Please also refer to preliminaries / general conditions.
- **If project needs to follow NHBC Requirements:** The waterproofing must be visually inspected and electronically tested for waterproofing integrity, faults rectified, and retested prior to the installation of any landscaping products. The results of the test(s) should be made available to the NHBC.

940 COMPLETION

- **Roof areas:** Clean.
- **Outlets:** Clear.
- **Work necessary to provide a weather tight 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.

950A GUARANTEE

- A 20 year system product, workmanship and design (including consequential loss) guarantee is to be provided upon completion following a Final Inspection by Bauder. Details regarding the full terms and conditions are available separately from Bauder Ltd upon request. This system must be installed by a Bauder Approved Contractor, to be eligible for guarantee. The system comprises the waterproofing membranes, insulation, air and vapour control layer, and attachment of these products.

Bauder reserves the right to amend information and product specifications without prior notice. All reasonable care has been taken to ensure that the information is current and correct at the time of issue. Please note that any future regulation changes could result in this specification requiring an update. In the case of a previous roof survey a new survey will be necessary to establish if the condition has further deteriorated and therefore if the specification requires amendment. The specifier is responsible for ensuring that this specification information is still current prior to issue, as Bauder Ltd can accept no liability for any resulting errors or omissions. Any deviation or modification to this specification without Bauder's consent may result in the system not achieving the stated Fire Performance or Guarantee Requirements.