**‘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' ZONES - ALTERNATIVE MEMBRANES AND APPLICATION. The ‘Torch-Free’ & ‘Safe to Torch’ zone detailing and method of application will be described in the Additional Items section and the 'Torch-Free' & 'Safe to Torch' zones section of this specification and further detailed in the Bauder 'Torch-Free' & Bauder Bituminous detail drawings.*

*This specification should be read in conjunction with the Bauder Roof Survey Report (supplied separately) and the ‘TORCH-FREE ZONES REPORT‘ attached.*

**SYSTEM CONSTRUCTION**

**Waterproofing System:** Bituminous System – Warm roof construction

**Substrate:** Asphalt Overlay

**Roof Fall:** 1° - 6°

It is imperative that should this information change for whatever reason, then Bauder should be contacted so that the specification can be amended accordingly.

**ASPHALT OVERLAY**

Carefully remove all surface chippings, debris etc. from the surface of the asphalt. Also Strip and/or remove any felt patch repairs, loose or flaking solar reflective paint, liquid overlays etc. Carefully cut away and remove the existing asphalt skirting from all upstands and perimeter edges and prepare the exposed surfaces to receive the new waterproofing.

Repair all cracks and blows in the asphalt and prepare to leave a smooth even surface. We recommend that deflected areas of asphalt be levelled up to minimise ponding.

Where it has not been possible to ascertain whether there is existing insulation; should it be discovered that existing insulation is found within the ceiling void space, there may be a requirement for this to be removed to prevent interstitial condensation forming.  Please contact **Bauder** in order that the build-up and proposals are assessed before works commence/continue.

**PRIMER**

**Bauder Primer-Activator (Canister), APR01-Black.** All areas receiving the new self-adhesive membranes to be thoroughly primed with **Bauder Primer-Activator (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 after4 hours exposureif 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.

**AIR AND VAPOUR CONTROL LAYER**

2.5mm thick, aluminium lined, self-adhesive elastomeric bitumen air and vapour control layer, cold applied by removing the peel off release film. Side laps to be 100mm and head laps to be 100mm and staggered and sealed by hot air welding/torching and rolling (depending on ‘Torch-Free’ & ‘Safe to Torch’ zoning), to extrude a continuous bead of bitumen. Care should be taken to ensure adhesion when the temperature is below +5ºC. At all abutments and details the bitumen bead must be extruded from the lap joints to ensure a seal.

For ‘Torch-Free’ zones 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 of fire to exposed combustible materials. The contractor is also to form all details in such a way that a fully bonded 100mm lap is obtained between the air and vapour control layer and the underlayer – Please see Bauder ‘Torch-Free’ detail drawings.

**FA-TE INSULATION**

**Product:** BauderPIR FA-TE

**Description:** aluminium faced, rigid urethane flatboard insulation.

**Thickness:** 120mm thick\*.

**Performance:** Zero ODP, and a Green guide rating of ‘A’.

**Application:** Bonded to the upper surface of the air and vapour control layer using suitable Bauder Polyurethane Insulation Adhesive.  (Product selection assistance available from Bauder – It is not recommended to use Bauder PU Insulation Adhesive – Tin, for adhering two foil surfaces together).  The adhesive should be applied in strips following the direction of the board length giving 2 no. (increase to 3 no. at roof perimeter)\*\* continuous and equally spaced adhesive beads within each 600 mm board width.  It is essential that the surface of the air and vapour control layer is clean, dry and free from dust etc., before applying the adhesive.  The boards are to be close butted and staggered.

Adhesive bead widths are stated on appropriate product label and datasheet.

**Important Note:** Foil to foil installation (e.g. FA-TE to FA-TE) must not be carried out using Bauder insulation adhesive from the 6.5 Kg tin.

*\*’U’ value available on request*

*\*\*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.*

**Note:-**

The inclusion of flat board insulation will not improve upon the existing fall present within the roof area. If ponding water is considered undesirable, then consideration should be given to improving the fall. In the event of any queries **Bauder Limited** should be contacted.

**SLOPED AREAS ONLY:**

**MECHANICAL FIXING OFJ41/MECHANICALMECHANICAL BITUMEN MEMBRANES ON ROOFS PITCHED MORE THAN 5°**

**MECHANICAL RETENTION PLATE**

**Material:** New exterior grade plywood or OSB3 timber laminate plates, conforming to BS EN 636-3 for plywood & BS EN 300 for OSB3, & CPD/CE compliance, fixed directly through the insulation to the deck using recommended screw fasteners.

**Dimensions:** 18mm thick, 300mm in width and 2400mm in length, (cut from a 1200 x 2400 mm standard sheet to produce four equal width plates with no wastage). A continuous run of the retention plate will be required for each row where the cap sheet head laps are staggered. Head laps should not be fixed in a continuous line, unless the roof is less than the length of the roll from the ridge to the gutter eaves.

**Insulation thickness:** Where the mechanical retention plate is to be incorporated, the insulation below needs to be 20mm thinner to ensure the plate finishes virtually flush with the main area insulation. Mechanically fix the plate through to the deck using the specificed thermally broken fasteners.

**Priming:** **Bauder Primer-Activator (Canister), APR01-Black** to seal and prepare the surface of the mechanical retention plate prior to the application of Bauder membranes.

**Substrates generally:** Substrate to be fixed to should be secure, clean, dry, smooth, and free from frost, contaminants, voids and protrusions.

**Moisture content and stability of substrate:** Must not impair roof integrity.

**Preparation:** 12 no. fastener holes to be pre-drilled in accordance with the Bauder guidance document for the mechanical retention plate. The heads of the SFS Isotak tube fasteners are not required to be recessed into the plate.

**Metal decks only:** The hole positions in the plate must be drilled to correspond with the centres of the deck crowns of the specified deck. For metal decks with larger crown/ trough profile, it may be necessary to use a plate wider than 300mm to pick up the crown centres and ensure that the plate can be fixed along both sides of its length and remain fully supported.

**Setting out of membranes:** Parallel to roof slope, with successive layers carried over ridges.

**Lengths (maximum):** As per roll length.

**End laps:** Half stagger and align on alternate bitumen membranes.

**MECHANICAL FASTENERS (MECHANICAL RETENTION PLATE ONLY)**

**Type:** Iso-Tak Insulation tube fastener

**Purpose:** Used for securing the mechanical retention plate to the deck.

**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](http://www.ribaproductselector.com/Weblink.aspx?ac=&linkurl=http://www.sfsintec.biz/uk&linktype=web&from=6668)

**Product reference:** Iso-Tak InsulationTube fastener with a minimum 45mm round head - Tube length must be a minimum of 70% of the total depth of the insulation. The screw fastener type as recommended by the supplier for the particular deck substrate. Please note that long screws and 80 x 40 mm washer plates are not suitable nor permitted for this application).

**UNDERLAYER**

2mm thick, 200g/m² glass grille reinforced, self-adhesive elastomeric bitumen underlayer, 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 fully heat sealed/torched (depending on ‘Torch-Free’ & ‘Safe to Torch’ zones) with the air and vapour control layer by a minimum 100mm.

**Optional 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 **Bauder EGV 3.5** underlayer where this product is considered to be better for application to these surfaces. For all other situations, and particularly to vertical insulation, the Sprint Duo underlayer must be used.

**SLOPED AREAS ONLY:**

**MECHANICAL FIXING OFJ41/MECHANICALMECHANICAL BITUMEN MEMBRANES ON ROOFS PITCHED MORE THAN 5°**

All head laps of the capping sheet need to be mechanically fixed using 5 no. fixings per sheet at 200mm centres, using screw fasteners as per below, together with associated galvanised pressed steel washer plates. Screw fix into the underlying plywood/OSB3 timber laminate plate, ensuring that the pressure plates lie flush within membrane surface. Sheets should be set out parallel to roof slope, with successive layers carried over ridges, where these occur. End laps should be half-staggered and aligned on alternate bitumen membranes. If there is any doubt as to the exact requirements, please contact Bauder Limited before proceeding.

**MECHANICAL FASTENERS (CAPPING SHEET ONLY)**

**Type:** IWF-5.2x35 screws (suitable for plywood or OBS3) together with associated IFC/IW–82x40 galvanised pressed steel washer plates. Purpose used for fixing the membrane to the mechanical retention plate.

**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](http://www.ribaproductselector.com/Weblink.aspx?ac=&linkurl=http://www.sfsintec.biz/uk&linktype=web&from=6668)

**CAPPING SHEET**

4mm thick, 250g/m² polyester reinforced, elastomeric bitumen capping sheet, charcoal grey slate finish, fully bonded to the underlayer by torching in the approved **Bauder** manner. Head laps to be 100mm, side laps to be 80mm, torch sealed to provide a continuous bitumen bead extrusion from all laps.

**UPSTANDS AND DETAILING**

Detail work to be carried out in Bauder capping sheet in accordance with current British Codes of Practice. Side laps to be 80mm, head laps to be 100mm. A continuous bead of bitumen must extrude from all laps.

The minimum recommended height for constructing waterproofing details is 150mm from the top of the waterproofing. Special attention should be paid to all structures, such as rooflights, counter-flashings, window and door sills, etc. These may have to be raised to enable a 150mm high waterproofing detail to be formed. Bauder cannot take responsibility for water ingress over waterproofing details insufficiently high.

Separate flashings must always be formed. The capping sheet taken up a detail in one piece will not be permitted.

**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.
* 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 (Bauder KH-60 linear drain is suitable for this purpose) in front of the access door threshold, to help prevent rainwater splash back and snow build-up.

**ADDITIONAL FIXING OF BITUMEN MEMBRANES TO UPSTANDS**

**Torch Applied Capping Sheets:** Upstand details in excess of 250 mm in height; the top leading edge of the capping sheet will need to be mechanically fixed using 5 no. fixings per sheet at 200mm centres, using screw fasteners as stated below.  Screw fix through into the underlying substrate, (for cold roofs, ensuring that the pressure plates lie flush within membrane surface), utilising a separate flashing of capping sheet to cover the lap and fixings.  In the event of doubt, Bauder should be consulted regarding any specific requirement.

Up to and including 250mm, it is permissible to use a **Bauder Termination Bar** to mechanically fix the top leading edge. **Please note:** Termination bars are not suitable for brickwork substrates.

* **Underlayers:** Upstand details in excess of 500mm, provision should be made to mechanically fix through the underlayer using 5 no. fixings per sheet width at 200mm centres, using screw fasteners as stated below.  The underlayer will also need to be fixed every 500mm thereafter.

For insulated upstands, please use appropriate tube fasteners to prevent cold bridging from occurring.

**Self-Adhesive Capping Sheets:** The capping sheet will need to be mechanically fixed at 500mm in height and every 500mm thereafter using 5 no. fixings per sheet at 200mm centres, using screw fasteners as stated below. Screw fix through into the underlying substrate, (for cold roofs, ensuring that the pressure plates lie flush within membrane surface), utilising a separate flashing of capping sheet to cover the lap and fixings.

Up to and including 250mm, it is permissible to use a **Bauder Termination Bar** to mechanically fix the top leading edge. **Please note:** Termination bars are not suitable for brickwork substrates.

**Note:** It is not necessary to mechanically fix the underlayer when using Self-Adhesive Capping Sheets.

**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](http://www.ribaproductselector.com/Weblink.aspx?ac=&linkurl=http://www.sfsintec.biz/uk&linktype=web&from=6668)

**Mechanical Fasteners (Cold Roof Upstands):**

**Type:** IWF-5.2x35 screws together with associated IFC/IW–82x40 galvanised pressed steel washer plates.

**Mechanical Fasteners (Warm Roof Upstands):**

**Type:** Respective tube washers to be used for both membrane and insulation.

**Product reference:** Tube fastener - Tube size and fastener type for both membrane and insulation as recommended by supplier specifically for project and installed in accordance to their fixing plan. Please note that insulation tubes (round) differ from membrane tubes (rectangular 80 x 40 mm).

**‘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.
* **Primer:** **Bauder Primer-Activator (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.
* **Capping sheets:** Where appropriate, the installing contractor can use **Bauder** **KSO-P SN / KSO SN** self-adhesive capping sheet, applied using the hot air hand tools approved for use with bituminous systems. Please note that **Bauder Primer-Activator (Canister), APR01-Black** must be applied to the underlayer prior to installation of the self-adhesive capping sheet.

**Bauder KSO-P SN** is only available in one colour – Charcoal Grey.

**Bauder KSO SN** is available in two colours – Natural Slate or Brown.

**Self-adhered membranes** - Mechanically fix the top leading edge of all upstand details at 300mm centres using appropriate fasteners, and suitable termination bar if required.

**Approved Hot Air Equipment**

* The **Bauder KSO-P SN / KSO 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

**NON-COMBUSTIBLE SURFACES - ALTERNATIVE DETAILING MEMBRANES**

* 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.

**TECHNICAL NOTES**

1. 50mm x 50mm **BauderPIR angle fillets** must be used at all right-angled upstands. **Angle fillets will need to be installed using Bauder insulation adhesive**, or a suitable bitumen adhesive. Under no circumstances must fillets of an alternative material be incorporated (i.e. timber, cork, fibre, etc.) as this would invalidate the guarantee.
2. Against all insulation boards where the edge of the board is susceptible to mechanical damage, provision is to be made to supply and fix a timber protection batten 10mm thinner than the insulation. This to be suitably mechanically fixed to the roof deck. On internal details such as internal gutters/outlets it is permissible to use a metal hard edge angle.
3. When the ambient temperature is below 5°C, care should be taken to ensure proper adhesion of the self-adhesive membranes.
4. Any peculiarities or details discovered, which might affect the performance of the **Bauder** system, should be reported immediately to the specifier and **Bauder Limited** in order that they may assist in overcoming the problem.
5. 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.

No mopping or loose covers will be permitted.

1. 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 until all associated trades are complete and the roof areas are clear from all debris and protection layers.
2. 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 recommissioned on completion of the roofing works in accordance with the client's detailed specification.
3. 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 all round. In the case of heavy items it may be necessary to introduce a load spreading slab, please contact **Bauder** for further advice.

**DRAINAGE CHUTES**

[1] All chute liners must be examined for damage and proper fixing. Any faults must be rectified.

[2] The contractor must ensure that the waterproofing is firmly sealed to the chute liner.

[3] The contractor must ensure that all chutes are unobstructed and hopper heads free from blockages during and at the completion of the contract.

[4] The contractor is to provide suitable wire baskets to hopper heads on completion of the contract.

[5] A sump must be created around all chutes by installing a minimum 30mm thick section of insulation board.

**INTERNAL OUTLETS**

[1] Where the existing outlets are to be retained they must be carefully examined for damage and proper seating. Any faults must be rectified.

[2] When insulation is incorporated in the system a sump must be created around the outlets, by installing a minimum 30mm thick section of insulation board.

[3] The contractor must ensure that the waterproofing is firmly sealed to the outlet.

[4] The contractor must ensure that all outlets are unblocked during and at the completion of the contract.

[5] The contractor is to provide suitable grilles/wire baskets to the outlets on completion of the contract.

**ADDITIONAL ITEMS**

**Provision should be made by the contractor to:-**

* **New Chase & suitable flashing to Brickwork Upstand** (A01)

Cut new chases into brickwork upstands. The chase is to be a minimum of 25mm deep and 150mm above the finished surface level. Install suitable counter-flashing, this is to be base clipped and suitably plugged at 300mm centres. Lengths should not exceed 1.5 linear metres and laps should be not less than 150mm. All chases should be brushed clean and sealed using **Bauder sealant primer** prior to the application of **Bauder sealant**. All work should be carried out by competent tradesmen in accordance with current British Codes of Practice.

* **New Chase & suitable flashing to Rendered Upstand** (A03)

Cut new chases into rendered upstands. The chase is to be a minimum of 25mm deep and 150mm above the finished surface level. The new waterproofing is to be dressed so as to finish flush with the bottom of the new chase. Install suitable counter-flashing, this is to be base clipped and suitably plugged at 300mm centres. Lengths should not exceed 1.5 linear metres and laps should be not less than 150mm. All chases should be brushed clean and sealed using **Bauder sealant primer** prior to the application of Bauder sealant. All work should be carried out by competent tradesmen in accordance with current British Codes of Practice. A new render stop to be installed above the new flashing and re-rendered to match the existing and re-decorated according to any specific instruction by the client.

* **Dress Waterproofing up Behind Pitched Slates/Tiles** (A15)

Remove sufficient courses of slates/tiles and thoroughly inspect the area around the upstand and clear out any combustible material that may have accumulated there. Install the new waterproofing to be dressed up a minimum distance of 200mm (and a minimum vertical height of 150mm from the finished surface level) behind the slates/tiles. Care should be taken on the replacement of the slates/tiles. Any existing under slating must be lifted clear and secured. Tile battens should be temporarily removed for this purpose. Self-adhesive membranes **must** be used in this area to avoid the risk of fire. Should the existing support to the slope be insufficient, provide or extend the lay board as necessary. Reinstate battens (taking care that any rotten or defective timbers are replaced) and tiles ensuring that the under slating felt laps over the new waterproofing and that any damaged or degraded under slating is renewed. Any broken, missing or damaged tiles/slates must be replaced.

* **Behind Slates/Tiles Abutting Gutter “Asphalt Overlay”** (A16)

Carefully remove sufficient roof tiles/slates to expose and gain access to overlay the existing asphalt gutter lining. Thoroughly inspect the area around the upstand and clear out any combustible material that may have accumulated there. Slumping or blown skirtings’ must be cut away unless isolated repairs can be successfully carried out. Where support to the slope is insufficient or needs increasing, provide sufficient lay board to suit. Any existing under slating must be lifted clear and secured. Tile battens should be temporarily removed for this purpose. Thoroughly clean and prime the existing asphalt prior to re-waterproofing. Overlaying the asphalt - Self-adhesive membranes **must** be used in this area to avoid the risk of fire. The membranes are to provide a minimum vertical upstand height of 150mm. Install the perimeter edge detail as dictated by our specification. Reinstate battens and slates/tiles ensuring that the under slating felt laps over the new waterproofing and that any damaged or degraded under slating felt is renewed. Any broken, missing or damaged tiles/slates must be replaced.

* **Behind Slates/Tiles Abutting Gutter “Strip Gutter”** (A17)

Carefully remove sufficient roof tiles/slates to expose and gain access to re-waterproof. Thoroughly inspect the area around the upstand and clear out any combustible material that may have accumulated there. Any existing under slating must be lifted clear and secured. Tile battens should be temporarily removed for this purpose. Strip out and remove the existing waterproofing from the gutter detail. Should the existing support to the slope be insufficient, provide or extend the lay board as necessary. Self-adhesive membranes **must** be used in this area to avoid the risk of fire. The membranes are to provide a minimum vertical upstand height of 150mm. Provide the final edge detail in accordance with our specification. Reinstate battens and slates/tiles ensuring that the under slating felt laps over the new waterproofing and that any damaged or degraded under slating felt is renewed. Any broken, missing or damaged tiles/slates must be replaced.

# Behind Vertical Slates/Tiles (A19)

Carefully remove sufficient courses of slates/tiles to allow the waterproofing to be dressed a minimum height of 150mm up the upstand. Any existing under slating must be lifted clear and secured. Self-adhesive membranes **must** be used in this area to avoid the risk of fire. Re-instate slates/tiles on completion ensuring that the under slating felt laps over the new waterproofing and that any damaged or degraded under slating is renewed. Any broken, missing or damaged tiles/slates must be replaced.

* **Re-Waterproof Rooflight Kerbs (& Raise if Necessary)** (B01)

Remove the existing rooflights from their kerbs. The kerbs are to be inspected for any signs of degradation and repaired as necessary. Check that a minimum 150mm upstand height can be achieved above the finished surface level and raise kerb if required. If a new Bauder rooflight is to be installed onto the kerb, the kerb itself should be modified if necessary to ensure a minimum width of 100mm. 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. The new waterproofing system is to be dressed up and over the top of the kerb finishing flush with the inner edge. All exposed openings are to be temporarily protected and made watertight at the end of each working period. The rooflights are to be reinstalled or replaced with new in accordance with the specification, using suitable fixings.

* **Re-Waterproof Ventilator Kerbs (& Raise if Necessary)** (B03)

Temporarily remove the existing ventilators from their kerbs. The kerbs are to be inspected for any signs of degradation and repaired as necessary. Check that a minimum 150mm upstand height can be achieved above the finished surface level and raise kerb if required. 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. The new waterproofing system is to be dressed up and over the top of the kerb finishing flush with the inner edge. All exposed openings are to be temporarily protected and made watertight at the end of each working period. The ventilators are to be carefully reinstalled using suitable fixings. Provision should also be made for extending the ducting on the underside of the ventilator to suit.

* **Raise Perimeter Kerbs** (B07)

Raise all perimeter kerbs so as to provide a height of at least 50mm above the finished surface level. Method of raising the kerb to be confirmed in the client’s detailed specification. On external faces, allowance must be made for new fascia’s or cladding due to the increased depth of kerb. 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.

* **Form a Welted Drip to Edge Kerb** (C01)

Supply and install a suitable sized soft wood tanalised timber drip batten to all edge kerbs. Fixings are to be screwed at 300mm centres, using plugs when fixing into masonry or concrete. A welted drip detail is to be formed in Bauder self-adhesive capping sheet if using Torch-Free methods or Bauder slate finished torch applied capping sheet for Safe to Torch methods, stagger nailed at 50mm centres with large headed galvanised clout nails and turned back around a mechanically fixed, pre-primed, suitable former and dressed onto the roof by a minimum of 150mm.

Please refer to Bauder standard detail for Welted Drip.

* **Welted Drip to External Gutters (Flat Board System)** (C06)

Supply and fix a treated timber edge plate to all perimeters which are designed to shed water. The plate is to be 10mm less than the thickness of the insulation and 150mm wide to accommodate the thickness of the drip flashing so as to prevent a water check from occurring. Supply and fix a suitably sized soft wood tanalised timber drip batten to the top edge of the perimeter face. Fixings are to be screwed at 300mm centres, using plugs when fixing into masonry or concrete. A welted drip detail is to be formed in Bauder self-adhesive capping sheet if using Torch-Free methods or Bauder slate finished torch applied capping sheet for Safe to Torch methods, stagger nailed at 50mm centres with large headed galvanised clout nails and turned back around a mechanically fixed, pre-primed, suitable former and dressed onto the roof by a minimum of 150mm.

Please refer to Bauder standard detail for Welted Drip.

* **New GRP Trims** (D01)

**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:** 3 mm (minimum) clear from walls, fascia and 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.

* 150mm deep trims – 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.

 - **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-Activator (Canister), APR01-Black**.

 - **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.

**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.

* **Retain Copings, Plyclad Vertical, And Apply New Trim** (D06)

Prepare the parapet wall by mechanically fixing 19mm exterior grade plywood to the vertical surface.

**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:** 3 mm (minimum) clear from walls, fascia and 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.

* 150mm deep trims – 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.

 - **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-Activator (Canister), APR01-Black**.

 - **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.

**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.

* **Capsheet Walkway** (H05A - Brown)

Supply and fix a layer of **Bauder** capping sheet (as per main specification), colour brown. This to be laid in the form of a walkway on areas designated by the client and fully bonded to the previous layer of **Bauder** capping sheet. Allowance must be made for drainage channels where the new walkway layer impedes water run-off.

* **Splash Pads** (H09)

Supply and fix a 300mm x 300mm piece of **Bauder** capping sheet beneath all rainwater downpipes and overflows. This to be fully bonded to the previous capping sheet layer using Torch-Free methods to avoid the risk of fire.

* **Layer of Sacrificial Capping Sheet Beneath Existing Equipment** (H13)

Temporarily remove all apparatus/equipment so as to allow waterproofing to be installed beneath. On replacement, an additional sacrificial layer of **Bauder** capping sheet to be loose laid beneath so as to reduce the possibility of damage to the waterproofing system. The pads should extend 100mm beyond the equipment support on all sides.

* **Product name:** Bauder Bitumen Refurbishment Warm Roof Outlet **(I3)**

**Material:** Castpolyurethane body with integral bituminous connection flange.

**Product size/ reference:**

* 63mm Bauder Bitumen Refurbishment Warm Roof Outlet
* 90mm Bauder Bitumen Refurbishment Warm Roof Outlet

**Suitability:** Intended for existing roof overlay situations and limited to use where additional insulation is being provided. The insulation depth requirements for accommodating the bowl of these outlets are: -

* **63mm Outlet** – 70mm min.
* **90mm Outlet** – 105mm min.

Please note that when fitted within existing outlets, the minimum insulation thickness could be reduced further depending upon the bowl size of the existing outlet. This product is not suitable for uninsulated overlay applications. Please refer to product data sheet for further information regarding the minimum insulation thickness required or contact our Technical Department.

**Flow rate:** Based upon vertical pipework and a 35 mm head of water pressure – according to BS EN 12056:3:2000.

* **63mm Outlet** - 6.1 litres/sec
* **90mm Outlet** - 6.9 litres/sec

**Pipe/ outlet connection:** designed to fit inside existing pipework or outlet units using the seals provided, where the internal diameter of the bore is: -

* **63mm Outlet** - between 68mm - 86mm.
* **90mm Outlet** - between 89mm -107 mm.

**Type of grate/ fittings:** supplied with a tough polyamide leaf guard.

**Installation requirements:** These outlets are components that form part of the Bauder waterproofing system and for guarantee reasons, should only be installed by Bauder Approved installers.

**Fixing:**

* The existing pipe bore should be first cleaned to ensure a good seal.
* The outlet is to be secured to the structural deck by a minimum of four fasteners through the outlet rim to obtain an adequate attachment to the deck substrate material.
* The appropriate seal to suit the internal diameter of the opening must be fitted before the outlet is inserted into the existing pipe/ outlet. The stepped outlet seal can be trimmed to fit.
* When fixing through existing outlets, the long outlet spigot should extend beyond the spigot of the existing unit to from a seal with the downpipe beyond and should then be cut to the length required.
* For detailed information, refer to the manufacturers installation guidelines.
* **Bauder Locking Leaf Guard Short Leg (I8)**

Heavy duty lockable leaf guard. This leaf guard can be retro fitted or used as a replacement to the leaf guard supplied with the Outlet.

**Suitable for use with Bitumen Refurbishment Warm Roof Outlets only.**

Measurements: 210mm Ø

Height: 80mm

Grip Range Diameter: 60 – 220mm

* **New Lead Liner to Chute Outlets Through Perimeter Detail** (J11)

Supply new Code 4 lead chute liners to all drainage chutes. All chute liners are to be site fabricated to suit the individual details with all joints being lead burned. The chute liner should be manufactured to provide a minimum of 100 mm bonding area for the cap sheet waterproofing to lap onto the lead. The flange of the lead sleeve must be positioned between the underlayer and capping sheet to ensure best security. On completion, the lead liner must be turned down and dressed into the hopper head and the ears returned back and chased into the outer wall.

* **New External Rainwater Goods** (J16)

Supply and install all new external rainwater goods in accordance with the client's detailed specification.

* **Modify Downpipes** (J17)

Modify the existing downpipes where required, to accommodate the new surface levels imposed by the new system, ensuring that appropriate angled shoes are fitted to the bottom of each pipe with sufficient clearance from the completed system.

* **Gutter Sole Piece** (J18)

Supply and fix a layer of **Bauder** capping sheet so as to run lengthways along the gutter detail forming a continuous sole piece. All adjacent waterproofing is to be dressed down onto the sole piece to avoid water checks.

* **Extend SVP’s** (K04)

Extend all soil vent pipes, flues, etc., to ensure that a minimum upstand collar flashing height of 150mm can be achieved above the finished roof surface.

* **Upstand To Cold Pipe (Under 100mm Diameter)** (K15)

Supply and install site fabricated Code 4 lead sleeves to all cold pipes under 100mm diameter. A lead base flange must be incorporated to ensure that the new waterproofing forms a watertight seal. This flange must be situated on top of the Bauder underlay stage. A new fully welded cover flashing is to be installed above to protect the membranes.

* **New Bauder Euroglaze Modular Rooflight/Access Hatch** (L02)

Supply and install new **Bauder** **Euroglaze** modular rooflight / access hatch units, as detailed on the rooflight schedule.

This schedule will be accompanied by installation notes, which outline additional work required as part of the rooflight installation process.

**The following items will always be included for refurbishment projects:**

1. Remove existing redundant rooflights and dispose of in accordance with the clients detailed instructions.
2. Carry out any making good that may be required internally as a result of the installation of the new rooflight.
3. All works must be carried out strictly in accordance with the client's detailed specifications.
4. If a lightning protection system exists on the roof, provision should be made to incorporate the new rooflight into the system in accordance with BS EN 62305.
* **New Bauder Structural Rooflights** (L09)

Supply new **Bauder** **Structural Rooflights**, as detailed on the rooflight schedule. These items must be installed by Xtralite Ltd. Tel: 01670 354157.

 **The following items will always be included for refurbishment projects:**

1. Remove existing redundant rooflights and dispose of in accordance with the clients detailed instructions.
2. Carry out any making good that may be required internally as a result of the installation of the new rooflight.
3. All works must be carried out strictly in accordance with the client's detailed specifications.
4. If a lightning protection system exists on the roof, provision should be made to incorporate the new rooflight into the system in accordance with BS EN 62305.
* **Retain Uncoated Lightning Conductor (Type 2 Clip)** (M04)

Temporarily remove the uncoated lightning conductor without buckling or damaging, so as to allow for the new waterproofing to be installed beneath. The lightning conductor is to be replaced on completion, using **Bauder type 2 conductor clips** incorporating Bauder capping sheet pad fully bonded using suitable heating methods to the main capping sheet at 1m centres. The fixing to the new membranes is only to be carried out by the approved Bauder contractor. The re-commissioning of the conductor is to be carried out by a specialist company in conjunction with the roofing contractor.

* **Supply & Fix Ridge Piece Detail** (S01)

Supply and fix a separate piece of capping sheet as a ridge piece. This detail is to be dressed down to a minimum of 200mm onto the sloping area on either side.

* **Create Satisfactory Join-On Detail** (S02)

Create a satisfactory join-on detail to the adjacent roof area which will require stripping to the deck to ensure no sub-layer water flow from the existing roof. Thought should be given to junctions to existing waterproofing with flammable insulation or substrate materials. These areas and existing weathering components need to be assessed and made Torch-Safe before proceeding with hot works alternatively a Torch-Free solution should be considered.

If combustible materials are present, then self-adhesive membranes **must** be used in this area using Torch-Free methods to avoid the risk of fire. The **Bauder** underlayer and capping sheet membranes should be dressed by a minimum distance of 300mm onto the existing roof to create a watertight junction. The exact method of join on may need to be confirmed once on site in agreement with the Bauder Site Technician.

* **Create Satisfactory Change of Level Detail** (S03)

Create a satisfactory change of level detail in accordance with BS8217:2005 and **Bauder** standard details.

* Allow for supplying and installing new RyMar Ventilated Pipe Covers (to all soil and vents pipes), such as those manufactured by FIXFAST, Merlin House, Seven Mile Lane, Borough Green, Sevenoaks, Kent, TN15 8QY Order - 0500 553 222, Enquiries - 0845 450 7483. These are to be installed in accordance with the manufacturer’s instructions, on top of the Bauder under layer.
* The redundant windows on Roof 6 are to be removed and infilled with appropriate materials. These openings are subsequently encapsulated in the full Bauder waterproofing system inclusive of insulation.

**WORKMANSHIP**

[1] The **Bauder** System must be laid with the use of roll bars, as provided by **Bauder Limited** or equal and approved.

[2] Any building work which is the responsibility of the roofing contractor and has a bearing on the life of the **Roof System,** must be carried out by properly trained tradesmen.

[3] Consideration must be given by the contractor at all times to the aesthetic appearance of the roof, i.e. alternate head laps to be in line and no unnecessary short pieces of capping sheet are to be used.

**HEALTH & SAFETY INFORMATION – ROOFING WORK**

[1] Follow the advice shown in the “Safe2Torch 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 fire fighting 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. ln 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.

[14] No work must be carried out on fragile roofs or where there are skylights unless

suitable precautions have been taken to prevent persons falling through fragile roofs and openings. In particular, the following are likely to be fragile:

* Non reinforced fibre cement sheets e.g. asbestos
* Corroded metal decking
* Woodwool slabs
* Rotten chipboard or similar
* Stramit
* Slates or tiles
* Old roof lights
* Glass (including wired)

Specifying non fragile rooflights will help reduce the risk of falls from height. A non-fragility rating is required by the HSE (Health and Safety Executive) in order to comply with CDM (Construction Design and Management) Regulations 2015.

[15] HSE guidance must be followed when carrying out any work involving interference with asbestos.

**IMPORTANT NOTE:**

On sites where asbestos has or has possibly been detected, it is to be treated in accordance with the **Control of Asbestos Regulations 2012.**

Bauder specification documentation is subject to any revisions necessary pending the findings from the above.

GUARANTEE

A 20 year product and workmanship 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.

**IMPORTANT NOTE**

It is imperative that the contractor conforms with the workmanship criteria as listed above. Any deviation from this will result in the contract being considered unguaranteeable by our insurers.

**CONTACT INFORMATION**

***For Further information contact Bauder Limited***

***Head office: T: 01473 257671***

 ***E:*** ***technical@bauder.co.uk***

***Area Technical Manager: Patrick Walton, Tel. 07841 500354***

***Site Technician: Simon King, Tel. 07860412718***

*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. 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.*