CLIENT: DAY CUMMINS LTD
REF No: B181325
PROJECT NAME: DALES COUNTRYSIDE MUSEUM
ROOF AREA NAME: ROOF AREA 1
DATE: 01.05.2018

'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 ROOF PLAN' contained within this specification.

SYSTEM CONSTRUCTION

Waterproofing System: Bauder Total Roof System – Cold roof construction
Substrate: Asphalt Overlay
Roof Fall: (1°) **1:60**

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 Multi-Purpose Primer. All areas receiving the new self-adhesive membranes to be thoroughly primed with **Bauder Multi-Purpose Primer.**
Purpose: Special 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.

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Application method: Spray Applied to provide even and full coverage. Avoid pooling. Never attempt torching within 30 min of primer application, even if the surface appears dry.
Application rate:
300mm wide spray
Coverage: Approx. 80 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.

OR

Bauder SA Bonding Primer. All areas receiving the new self-adhesive membranes to be thoroughly primed with **Bauder SA Bonding Primer.**
Purpose: Special 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: Apply by brush or roller to provide even and full coverage. Avoid pooling.
Application rate:
- Timber/Metal: Approx. 200 g/m²
- Concrete / brickwork: Approx. 200-300 g/m² depending upon roughness and porosity.
- Two coats may be required for very porous substrates.

Application temperature: 5-25°C
Drying time: Approx.30 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.

UNDERLAYER

BauderTEC KSA DUO, 3mm 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 vapour barrier by a minimum 100mm.

UNDERLAYER INSPECTION

The Approved Contractor must give reasonable notice to **Bauder** of their intention to commence laying capping sheet. This will allow a discretionary inspection of the underlayer to take place, so that any remedial treatment necessary can be carried out prior to installing the capping sheet. This is particularly important when tapered insulation has been used to ensure that any areas of ponding water that may remain can be addressed.

CAPPING SHEET

Bauder K5K, 5mm 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. A continuous bead of bitumen must extrude from all laps.

UPSTANDS AND DETAILING

Detail work to be carried out in Bauder K5K 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 cills, 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.

Provision should be made by the installer for mechanically fixing the top leading edge of all upstand details in excess of 250 mm in height using appropriate fasteners. In the event of doubt, Bauder should be consulted regarding any specific requirement.

'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 Multi-Purpose Primer** or **Bauder SA Bonding Primer** 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: -
    - **Bauder G4E** to be replaced with **Bauder KSA Duo**

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- **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 Multi-Purpose Primer** 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 only 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.

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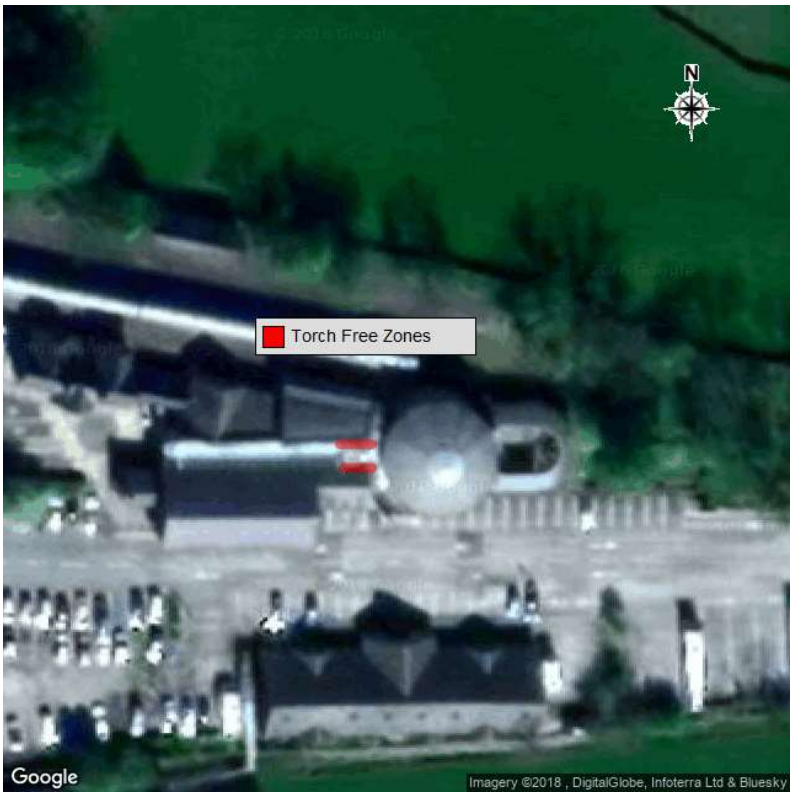
"TORCH-FREE" ZONES ROOFPLAN



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. The contractor is to ensure water tightness of the roof at all times. Proper day joints must be formed at the end of each working day to provide a temporary seal. No mopping or loose covers will be permitted.
6. 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.

7. 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.
8. 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.

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.

- **Modify Existing Rendered Upstand** (A10)
  Carefully cut away sufficient render from the abutment wall to allow for the formation of the new waterproof upstand detail meeting the minimum required height of 150mm above the finished surface level. Cut a new chase into the upstand at the required height. The chase is to be a minimum of 25mm deep. The new waterproofing is to be dressed so as to finish flush with the bottom of the new chase. Install new 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 flashing work should be carried out by competent tradesmen in accordance with current British Codes of Practice. Supply and install a new render stop above the new flashing and carry out render repairs and re-decorate in accordance with the client's detailed specification. Please note finished waterproofing must be adequately protected from render or paint spillage or additional works by other trades.

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- **Infill Recess at Abutment Upstand** (A14)
  Infill the recess at the abutment upstand using a combination of timber and plywood to provide a flush fitting vertical upstand suitably prepared to receive the new waterproofing.

- **Welted Drip to Mansard Roof** (C09)
  Supply and fix a suitably sized soft wood tanalised timber drip batten to the top face of the perimeter edge to mansard detail. A new lead flashing is to be installed behind the batten and dressed down over the top mansard tiles. 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 using Torch-Free methods, stagger nailed at 50mm centres with large headed galvanised clout nails and turned back around a mechanically fixed, suitable former and dressed onto the roof by a minimum of 150mm.

- **Re-Use Coping Stones & Plyclad Upstand** (E02)
  Carefully remove all existing coping stones and set aside for re-use. Prepare the parapet wall by mechanically fixing 19mm exterior grade plywood to the inner vertical surface. Prepare all exposed surfaces so as to receive the new waterproof flashings. 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 underlay is to be dressed up and across the parapet by a minimum of 100mm. The capping sheet is to be dressed up and across the top of the parapet and taken to the outside edge. An overhang of 10mm should be allowed. The existing coping stones should be cleaned down and be re-bedded in suitable mortar. Any damaged or broken copings should be replaced to match existing.

- **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.

- **New Bauder Euroglaze Modular Rooflight/Access Hatch** (L01)
  Supply and install new **Bauder** Euroglaze modular rooflight / access hatch units, as detailed on the forthcoming 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.

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- **Temporarily Disconnect And Re-Route Cables Using Felt Straps** (P05)
  Temporarily remove all service cables so as to facilitate the installation of the new waterproofing system. Consultation should be undertaken with the client to determine the best way in which this can be approached. The cables are to be replaced on completion and re-routed as necessary. They should be fixed using 150mm x 75mm pieces of **Bauder** capping sheet fixed at 1m centres using suitable heating methods.

WORKMANSHIP

[1] The **Bauder** System must only be laid by properly certified operatives, who have been trained by **Bauder Limited** or approved by **Bauder Limited** and hold the certificate of approval.

[2] The **Bauder** System must be laid with the use of roll bars, and Long Handled Lap Rollers as provided by **Bauder Limited**.

[3] Workmanship that is incorrect 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.

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

[5] 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. 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.

[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 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 installed by a Bauder Approved Contractor, to be eligible for guarantee. The system comprises the waterproofing membranes, insulation, 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.

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Site Technician: Bryan Turner, Tel. 07545 642311