**‘Safe2Torch’ advice:**

*Follow LRWA Guidance Note No.13 for safe drying of damp substrates. Particular care should be taken in areas deemed to be “Torch Free”*

*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 to provide assistance in the assessment of the risks where the use of a gas torch is being considered.*

**SYSTEM CONSTRUCTION**

**Waterproofing System:** Bauder LiquiTEC Cold Roof System

**Substrate:** Overlay Existing Asphalt waterproofing

**Roof Fall:** 3°

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

**Always refer to the Bauder LiquiTEC System Installation Manual for preparation methods, storage requirements and the application of each product.**

**Where there are any doubts as to adhesion, carry out an adhesion test, in accordance with the instructions given or consult the Bauder Technical Department on 01473 257671**.

**TEMPERATURE LIMITATIONS**

**Product Storage:** Bauder LiquiTEC products should not be stored in direct sunlight or in ambient temperatures above 25°C and must be protected from frost.

**Product Application Temperatures:** Please refer to the Bauder LiquiTEC Technical Installation Manual for details of ambient and substrate temperature limitations. All substrates to be tested with an appropriate Infrared non-contact digital temperature gauge before and during installation.

**ASPHALT OVERLAY (NO HOT WORKS!)**

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. If any details are defective, 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.

**Preparation Notes:** Scarify, grind or lightly bead blast before priming. Blisters and high spots must be cut away using a grinder. **Do not heat and trowel**.

**Falls:**

A design fall of minimum 1:40 is recommended in order to achieve a constructed fall of minimum 1:80. However, the Bauder LiquiTEC system is suitable for application to zero pitch roofs. Any areas of backfalls or deflection must be levelled prior to installing the system.

**PRIMER**

**Before application:** All surfaces must be dry, clean and free from dust, laitance, dirt, oil, grease, loose material and any other contaminants.

**DETAILS AND UPSTANDS – To be primed FIRST**

All Details and Upstands receiving the new Cold Applied Liquid Waterproofing System are to be thoroughly primed with the relevant **Bauder LiquiTEC Primer.**

The following primers must be used as required:

* **Bauder LiquiPRIME 1**: For Timber, Plywood or OSB/3 or KLH, Asphalt, Exposed Bitumen, Bitumen Bleed
* **Bauder LiquiPRIME 2**: For Non-Porous Concrete, Screed, Blockwork
* **Cryl Primer 287:** For New/Porous Concrete, Screed, Blockwork
* **Special Primer 610:** For EPDM
* **No Primer Required:** For Metals, Hard Plastics, PVC-P and existing Liquid Waterproof coatings (Subject to adhesion testing).

Application: Add catalyst to the primer at the rate indicated on the container (except Pox R103 & Special Primer 610). Apply catalysed primer using a synthetic deep pile roller to upstands and details first, before applying to the main area. Ensure that primer is applied into the joints between panels to fill the gaps.

Note: When using LiquiPRIME on upstand details in excess of 250mm high, add 1% (by weight) Liquid Thixo to the catalysed resin and stir thoroughly prior to application.

For other substrates, consult the Bauder Technical Department on 01473 257671 for required preparation methods and priming.

**MAIN ROOF AREA – To be primed after the Details/Upstands**

The main roof area receiving the new Cold Applied Liquid Waterproofing System is to be thoroughly primed with **Bauder LiquiPRIME 1.**

**Application method:** Add catalyst to the primer at the rate indicated on the container. Apply catalysed primer using a synthetic deep pile roller to upstands and details first, before applying to the main area.

**Application rate:** 0.4kg/m² min.

**Rainproof Times:** After approx. 30 minutes.

**Next Coat / Subject to Stress:** Can be walked upon/next coat applied after approx. 45 minutes.

SUBSTRATE REPAIRS AND FILLING

To be applied after priming:

* Bauder LiquiPASTE: Minor indentations, cracks and voids
* Bauder LiquiPASTE Mortar: Larger indentations
* Cryl RS 240: Cementitious substrates and Asphalt substrates

Application: Add catalyst at the rate indicated on the container (excluding RS 240). In the case of LiquiPASTE Mortar, catalyst must be added before adding the filler.

Apply catalysed resin using a suitable smoothing trowel and allow to cure for a minimum of 1 hour.

**WATERPROOFING TO UPSTANDS AND DETAILS**

**IMPORTANT NOTE**

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.

Bauder **LiquiDETAIL** incorporating Bauder 110g Reinforcement Fleece must be used wherever it is practical to incorporate a reinforcement fleece. Bauder **LiquiFIBRE** may only be used for waterproofing complex shapes or in areas where the use of a fleece is impractical.

GENERAL AREAS: Linear Upstands / Details

Bauder LiquiDETAIL, Blue grey (Approx. RAL 7031) two layer ‘wet-on-wet’ liquid applied cold roof covering system, with encapsulated Bauder 110g Reinforcement Fleece, to be used wherever it is practical to incorporate a reinforcement fleece.

**Application:** Add catalyst to the Bauder LiquiDETAIL at the rate indicated on the container. Apply catalysed Bauder LiquiDETAIL (2.0 kg/m² min.) with a synthetic deep pile roller. Roll a strip of Bauder 110g Reinforcement Fleece into the wet resin, pressing trapped air free using the synthetic deep pile roller, ensuring a minimum 50mm overlap between adjacent sections of Bauder 110g Reinforcement Fleece.

Ensure the Bauder 110g Reinforcement Fleece is always fully saturated before applying a further coat of catalysed Bauder LiquiDETAIL (1.0 kg/m² min.) wet on wet.

**Rainproof Times:** After approx. 30 minutes.

**Next Coat / Subject to Stress:** Can be walked on/next coat applied after approx. 45 minutes.

**COMPLEX AREAS: Complex NON Linear Details ONLY**

**Bauder LiquiFIBRE,** Blue grey (Approx. RAL 7031), may **ONLY** be used for waterproofing complex shapes or in areas where the use of a fleece is impractical.

**Application**: Add catalyst to the Bauder LiquiFIBRE at the rate indicated on the container. Apply catalysed Bauder LiquiFIBRE (1.5 kg/m² min.) with a brush and allow to cure for a minimum of 45 minutes.

Apply a further layer of catalysed Bauder LiquiFIBRE (1.5 kg/m² min.) by brush, using brush strokes at 90° to the first layer.

**Rainproof Times:** After approx. 30 minutes.

**Next Coat / Subject to Stress:** Can be walked on/next coat applied after approx. 45 minutes.

WATERPROOFING TO MAIN FLAT AREA

**Bauder LiquiDEK,** Blue grey (Approx. RAL 7031)two layer ‘wet-on-wet’ liquid applied cold roof covering system, with encapsulated Bauder 110g Reinforcement Fleece.

**Application:** Add catalyst to the Bauder LiquiDEK at the rate indicated on the container. Apply an even layer of catalysed Bauder LiquiDEK (2.0 Kg/m2 min) with a synthetic deep pile roller. Roll Bauder 110g Reinforcement Fleece into the wet resin, pressing trapped air free using the synthetic deep pile roller, ensuring a minimum 50mm overlap between adjacent sections of Bauder 110g Reinforcement Fleece.

Ensure the Bauder 110g Reinforcement Fleece is always fully saturated before applying a further coat of catalysed Bauder LiquiDEK (1.0Kg/m2 min) wet on wet.

**Rainproof Times:** After approx. 30 minutes.

**Subject to Stress:** Can be walked upon after approx. 45 minutes. Able to withstand stress after approx. 2 hours.

**IMPORTANT NOTE**

There may be a difference in colour pigmentation between LiquiDETAIL, LiquiFIBRE and LiquiDEK. If aesthetic appearance is considered important then it will be necessary to incorporate a separate coat of Bauder LiquiFINISH to ensure that the finished colour is even across all areas.

**HEAVY DUTY WEARING COURSE**

Bauder LiquiDEK incorporating Bauder quartz (0.4-1.2mm)

**Location: MAINTENANCE WALKWAYS/FIRE ESCAPE**

Application: Add catalyst to the Bauder LiquiDEK at the rate indicated on the container. Apply catalysed Bauder LiquiDEK to the designated areas (1.5Kg/m2 min) with a synthetic deep pile roller. Embed into the liquid layer a full cover of Bauder quartz (0.4-1.2mm) (7.0Kg/m2 approx). Allow to dry for a minimum of 1 hour, sweep away excess aggregate and vacuum clean. Do not re-use aggregate.

**Next Coat / Subject to Stress:** Can be walked upon/next coat applied after approx. 45 minutes. Able to withstand stress after approx. 2 hours.

**FINISH COAT TO MAINTENANCE WALKWAYS/FIRE ESCAPE**

**Bauder LiquiFINISH, Traffic grey (approx. RAL 7043)**

**Application:** Add catalyst to the LiquiFINISH at the rate indicated on the container and apply using a synthetic deep pile roller at the rates indicated below.

**Upstands & Details:** Apply LiquiFINISH (0.5kg/m² min).For upstand details in excess of 250mm high, add 1% Liquid Thixo to the catalysed resin and stir thoroughly prior to application.

**Main Area:** Apply LiquiFINISH (0.65kg/m² min).

**Rainproof Times:** After Approx. 30 minutes.

**Subject to Stress:** Can be walked upon after approx. 1 hours. Able to withstand stress after approx. 3 hours.

**INTERNAL/PARAPET 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] The contractor must ensure that the waterproofing is firmly sealed into the outlet.

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

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

**TECHNICAL NOTES**

1. It is the Contractor's responsibility to ensure that the substrate is suitable and that the system is applied in all areas in accordance with Application Guidelines in force at the time.

[2] **Coverage Rates** given are guidelines based on smooth, level substrates. Allowances must be made if the substrate is uneven, rough or porous.

[3] **Drying times** stated are at +20°C and are dependent upon weather conditions.

[4] **Interruptions During Works** - If work is interrupted for more than 12 hours, use Bauder PMMA Cleaner to clean and reactivate the transition area. **Evaporation time:** at least 20 minutes - overlay within 60 minutes.

For details including Bauder 110g Reinforcement Fleece, the subsequent waterproofing layers must overlap by at least 100 mm, including the Bauder 110g Reinforcement Fleece.

[5] 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.

[6] The contractor is to ensure water tightness of the roof at all times.

[7] 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 system. The final inspection will not be carried out until all associated trades are complete and the roof areas are clear from all debris and protection layers.

[8] 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.

[9] If any items of plant/equipment are to be situated on the finished roof, suitable protection should be applied in accordance with this specification. 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:-**

* **Raise Door Cill** (A12)

Raise all door cills to ensure that a minimum upstand height of 150mm is achievable above the finished surface level. The method of raising the cill should be determined and specified by the client.

* **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.

* **New chase & Bauder Sealant** (A21)

Cut new chases into brickwork upstands, a minimum of 25mm deep, & 150mm above the finished surface level of the new waterproofing. The chase is to be brushed clean and primed with Bauder LiquiPRIME 2 in accordance with the preparation and priming schedule. The new waterproofing is to be dressed in to the new chase. All chases should be sealed using **Bauder sealant**.

* **Clean & Prepare Rainwater Outlet (Cast Iron)** (J12)

Carefully remove the retaining bolt, clamping and grille from all cast iron outlets and prepare in accordance with the preparation and priming schedule. Treat and re-decorate all exposed parts of the outlets with a rust inhibitive paint in accordance with the client's detailed specification.

* The stairwell is to be raised to allow the new system to be installed.
* The new waterproofing system is to be taken up beneath the coping and a new chase formed. This is then to be sealed using polysulphide.
* The coping joints are to be raked out and re-pointed in accordance with the clients’ requirements.

**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 LiquiTEC System Installation Manual, Standard Details and project specific Details are to be read as an integral part of this specification.

[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 LiquiTEC 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.

**HEALTH & SAFETY INFORMATION – ROOFING WORK**

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

[2] 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

[3] 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.

[4] Similarly, the contractor must 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.

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

[6] Whenever possible, access to the roof must 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 must 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 must be applied from the Work at Height Regulations 2005. Means of access must be by fixed ladder, passenger hoist or scaffolding.

[7] 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.

[8] 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.

[9] All persons working on the roof must 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.

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

[11]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.

[12] 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.

[13] 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 15 year Bauder LiquiTEC system product and workmanship guarantee is to be provided upon completion following a satisfactory 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.

**CONTACT INFORMATION**

***For further information contact Bauder Limited.***

***Head office: T: 01473 257671 E:*** ***technical@bauder.co.uk***

***Area Technical Manager: Chris Rea, Tel: 07825 795280***

***Site Technician:*** ***Anthony Symondson, Tel: 07741 311273***

*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.  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.*