

**BAUDER**



# LIQUITOP SYSTEM

COLD LIQUID APPLIED  
FLAT ROOF SOLUTIONS

# OVERVIEW OF WATERPROOFING SYSTEM



## ASSYNT WATER TREATMENT WORKS

Location: **Inverness**

The LiquiTOP system is quick and easy to install and was ideally suited to this refurbishment roof where the constricted working area and high levels of detailing would have created challenges for a membrane type system. The waterproofing forms to the contours of the existing roof and around complex details effectively to create a seamless high-performance waterproofing solution.

**Mike Bradbury, Product Manager - Cold Liquids  
Bauder Ltd**

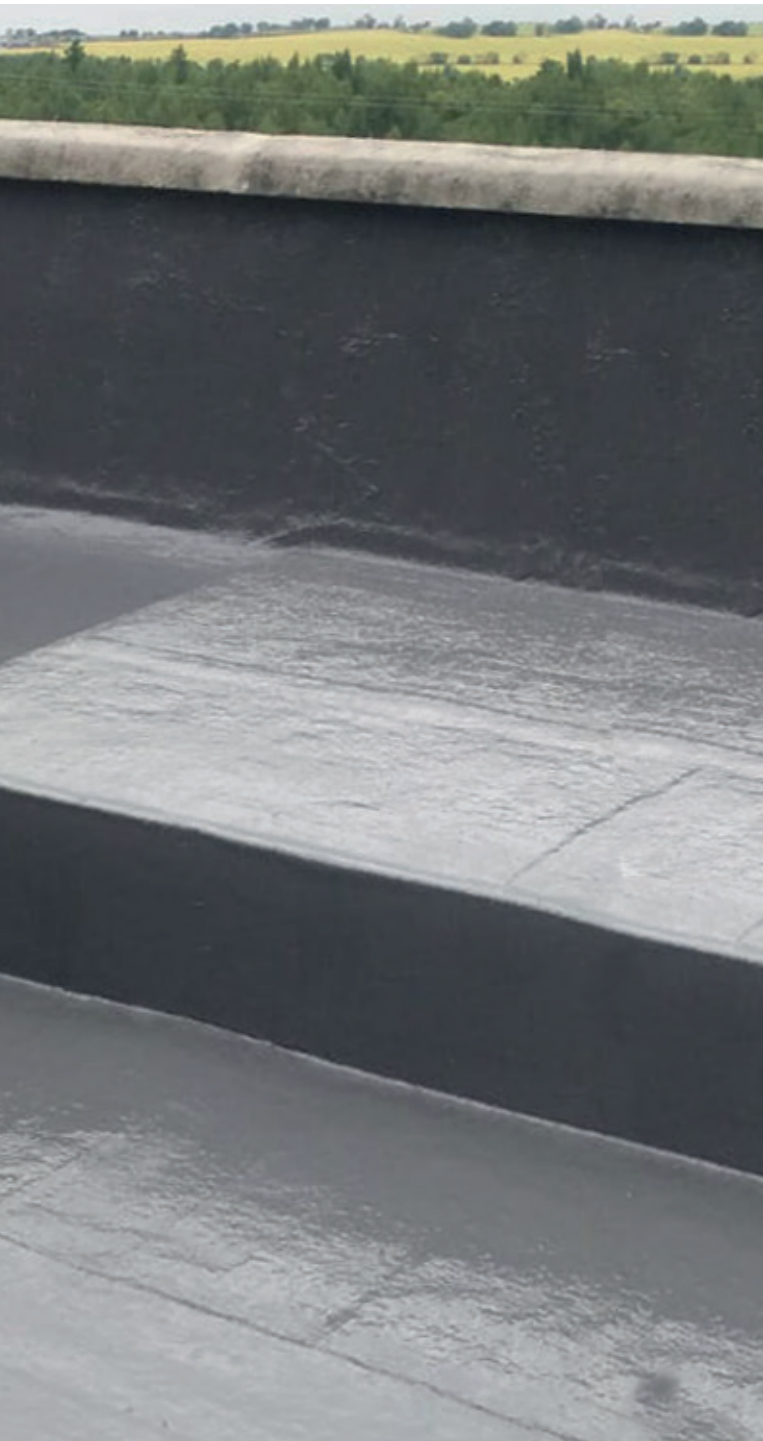
## Specification Support



**Specification downloads:**  
[www.bauder.co.uk/technical-centre](http://www.bauder.co.uk/technical-centre)



**Telephone helpline:**  
0845 271 8800



The Bauder LiquiTOP System is a cold liquid applied waterproofing based on single-component, moisture-triggered polyurethane that incorporates a glass fibre mat reinforcement. This long-lasting, durable and seamless waterproofing is suitable for refurbishment and new build projects. Key attributes of this system type are its versatility for contouring to complicated roof details, waterproofing in constrained areas of access, and around high concentrations of rooftop plant.

Our LiquiTOP System can be applied as a two coat or three coat (LiquiTOP 3COAT System) solution and utilises the latest fast-curing and cross-linking technology to ensure a full bond to a wide variety of substrates and consistency of application for the full period of shelf life.

The BBA certificate states that under normal service conditions it has a service life of at least 20 or 25 years depending upon the number of coats. The system can achieve a B<sub>ROOF(t4)</sub> rating for both flat and sloping roofs.

The system can be configured for overlay/cold or warm roof construction. Within the warm roof solution, our self-adhesive elastomeric bitumen membranes are used for the air and vapour control layer and the carrier membrane on which the LiquiTOP PU products are applied. There are two PU waterproofing colours available, Dark Grey and Mist Grey, each are interchangeable as embedment and top coats and both colours are UV stable giving a waterproofing membrane that is UV stable throughout.

#### When to specify

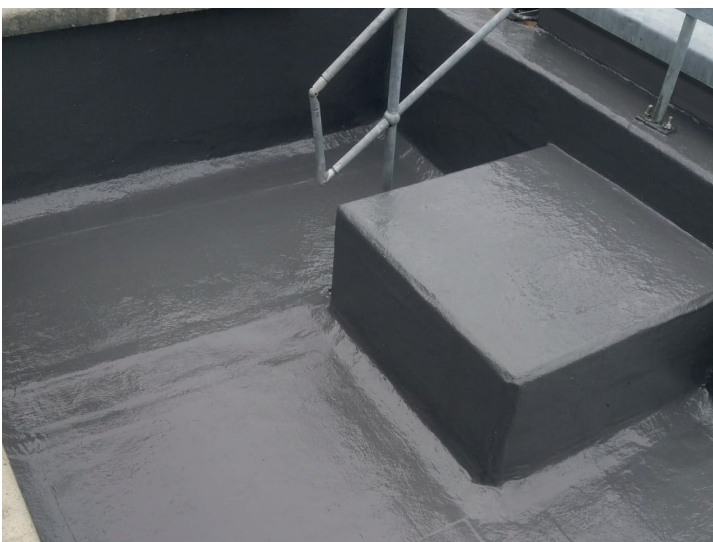
The Bauder LiquiTOP System is excellent on refurbishment and new build projects particularly where the complexity of the roof involves intricate areas to be detailed that are not easily achieved with a membrane, or the actual working space on the roof is constricted.

The compatibility and strong bond achieved over many existing roof systems, combined with a vapour permeability that allows the membrane to breathe and reduce vapour pressure build-up makes the Bauder LiquiTOP system ideal for roof overlays where the existing roof system may contain some moisture and is still securely attached.

The cold application means hot works are not necessary for the installation of the system making it ideal for many sites, e.g. production facilities where fire safety constraints apply.

#### Key Features

- Single component liquid, totally cold applied, two- or three-coat option.
- Moisture triggered curing, UV stable, polyurethane.
- Monolithic seamless membrane for free draining.
- Compatible with a wide variety of substrates.
- Suitable as an overlay system where the existing roof system is secure.
- Glass fibre reinforced for crack bridging strength.
- Early rain resistance quickly provides initial waterproofing of building.
- Warm roof options using BauderPIR, BauderROCK or BauderVIP.
- Can achieve B<sub>ROOF(t4)</sub> external fire performance on both flat and sloping roofs.
- Vapour permeable.



# SYSTEM CREDENTIALS

## ENVIRONMENTAL CREDENTIALS

### Environmental Product Declarations (EPD)

The Eco Platform accreditation is recognised by the BRE as valid and transferable environmental documentation towards obtaining BREEAM credits within its assessment process for BREEAM UK New Construction 2018.

Within our cold applied PU system we have the following EPD certification.

- **LiquiTOP PU Products**  
EPD-FEI-20180092-IBG1-EN
- **Bitumen Membranes**  
S-P-00414
- **PIR Insulation - Aluminium Facing**  
EPD-IVP-20140207-IBE1-EN
- **Mineral Wool Insulation**

### Life-cycle costings

The flexibility of the LiquiTOP PU is such that it can be overlaid at the end of its service life with the application of an additional layer to extend the lifespan of the roof by a further ten years each time.

### Product composition

The low-monomer, low VOC content in Bauder LiquiTOP PU products reduces the amount of volatiles emitted into the environment during application to offer a safer and more environmentally conscious alternative than many other liquid waterproofing products on the market, providing a more secure working environment for the client and contractor.

This low-monomer formulation makes Bauder LiquiTOP PU one of the safest and environmentally friendly, single-component moisture-triggered polyurethane waterproofing system products on the market.

### PIR Insulation

Our BauderPIR insulation holds EPD certification EPD-IVP-20140207-IBE1-EN. It has extremely high thermal efficiency and is CFC and HCFC free for zero ODP. As part of our PIR insulation manufacturing process, offcuts and waste are readily recycled and used in the production of hand cleansers and decking materials.

The embodied energy of our rigid polyurethane PIR insulation accounts for as little as 4% of the energy the board can save during its serviceable life. The inclusion of insulation when installing new or refurbished roofs plays a significant part in reducing CO<sub>2</sub> emissions.

## TECHNICAL CREDENTIALS

### BBA Certification

Bauder LiquiTOP systems have been tested and certified by the BBA and carry certificate number 20/5789 which covers LiquiTOP and LiquiTOP 3COAT under separate product sheets.



### External Fire Performance - Insulation

#### BauderPIR Insulation

Within a warm roof waterproofing system the BauderPIR insulation, is not exposed and is therefore protected through the performance of the liquid applied membrane and achieves the highest system classification B<sub>ROOF</sub>(t4) for both flat and sloping roofs.

#### BauderROCK

This insulant is non-combustible and used for construction projects requiring additional safety criteria.

### Durability

The system incorporates a high-grade 225 g/m<sup>2</sup> glass fibre mat to provide increased membrane strength, life expectancy and resistance to cracking, whilst on concrete surfaces providing enhanced crack bridging.

### Safety Conscious Installation Technology

The Construction, Design and Management Regulations 2015 place specific duties on designers, contractors and building owners to take fire safety into account throughout a building's life cycle, making sure that all people on site are protected if a fire does ever occur.

The LiquiTOP System is cold applied and no hot works are required for installation, this eliminates the risk of fire. This installation method means that in refurbishment situations buildings can remain fully operational throughout, with minimal disruption.

### Bonding Superiority

The LiquiTOP PU delivers superior adhesion between layers as well as to most deck structures or existing waterproofing that requires an overlay solution including concrete, reinforced bitumen membranes (RBM), PVC single ply, liquid applied membranes (LAM), and asphalt.



# ROOF REFURBISHMENT

When an existing roof is nearing the end of its serviceable life and remains sufficiently attached and watertight, the Bauder LiquiTOP System is an ideal overlay solution. Refurbishment of insulated roofs are also suitable, providing they do not suffer from moisture contamination or degradation problems.

Depending on the desired life expectancy, the system can comprise two or three coats of high-performance polymer coatings fully reinforced with an embedded high-performance glass fibre mat. The LiquiTOP PU fully bonds to and follows the contours of the existing substrate.

The system is permeable to water vapour whilst also delivering a completely waterproof covering making it possible to overlay existing waterproofing where a small amount of entrapped moisture is present. The LiquiTOP PU allows vapour pressure to dissipate in a controlled manner, reducing the possibility of post-installation surface blistering.

## Key advantages for refurbishment projects

- Fully reinforced seamless waterproofing with no laps on a wide range of existing surfaces and substrates.
- Can be used on combustible construction materials.
- Easily applied to complex and awkward details or areas that are difficult to access.
- The BBA certificate states that under normal service conditions it has a service life of at least 20 or 25 years depending upon the number of coats.
- Top-up option to extend the life of the waterproofing.
- Low VOC, for installation on projects sensitive to odour.
- Tolerant of substrate moisture.
- Low maintenance.
- Renowned Bauder service and guarantee.

## Improving thermal efficiency

Where a thermal upgrade is required, the existing waterproofing can be either stripped to the deck or repaired depending on its condition. In these projects, the Bauder self-adhesive bitumen air and vapour control layer (AVCL) and the carrier membranes are specified. Our range of insulation gives a choice of flat board or tapered to improve roof falls.

## Over existing roof finishes

If the roof has acceptable thermal performance, the system can be applied direct to most existing waterproofing. Overlaying an existing system can make commercial sense as there is less disruption to the building's use and occupiers, and less waste materials are removed and sent to landfill giving cost savings and environmental advantages.

On projects where an overlay is proposed, the existing roof system is always checked to ensure it is adequately attached or, where necessary, made secure with additional fasteners.

When the roof is an asphalt or reinforced bitumen membrane with a chipping finish, the chippings are mechanically removed by scarifying or overlaid with a recovery board before the LiquiTOP System is installed.

If the existing roof system is a PVC single ply membrane, the surface requires appropriate cleaning and priming.

Where the original roof already has a polyurethane system, Bauder LiquiTOP Reactivation Primer is used to revive the surface to accept the new LiquiTOP waterproofing system.

## Method of installation

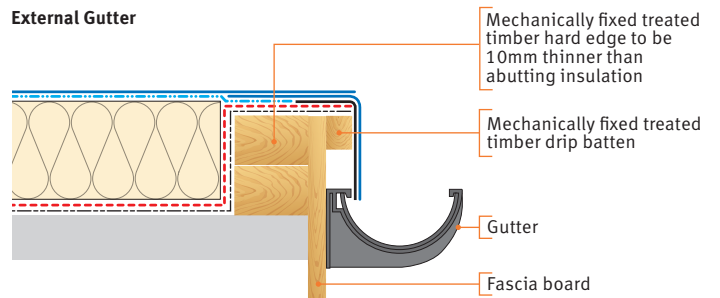
Starting at the details, an embedment coat of LiquiTOP PU is applied and reinforced with LiquiTOP Glass Fibre Mat; then the main roof area receives an embedment coat with reinforcement and the installed areas are allowed to cure, usually overnight. At this stage, the completed reinforced embedment coat acts as temporary waterproofing.

The top coat is then applied wet-on-dry to the cured embedment coat, again, starting at the details then proceeding with the main roof area.

## Thermal Upgrade to roof at external gutter

On projects requiring improved thermal performance, the Bauder bituminous self-adhesive membranes for the air and vapour control layer and carrier membrane encapsulate the specified insulation, and cover the timber and drip batten.

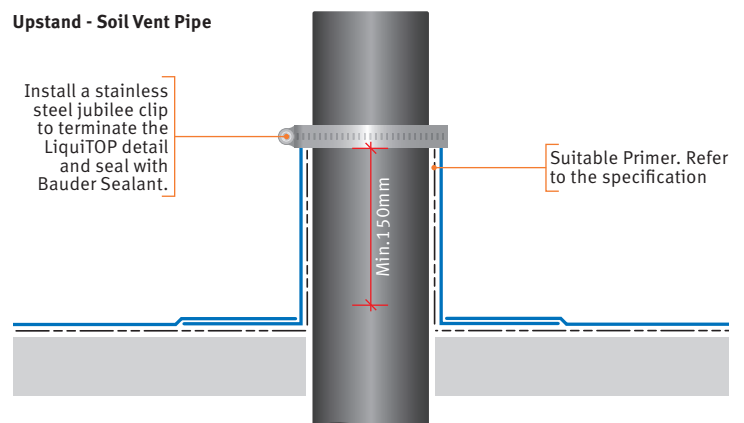
The treated timber hard edge should be 10mm thinner than the abutting insulation and the drip edge requires a Bauder GRP Trim Angle leading into the gutter on which the LiquiTOP waterproofing is installed.



## Pipe penetration

The detail is appropriately prepared and primed, depending on substrate and penetration material.

As with all PU systems, the waterproofing is not self-terminating and so a stainless steel pipe-band, such as a jubilee clip, is required.



# LIQUITOP ROOF SYSTEM

## Example System Configurations

LiquiTOP PU is available in two colours, Dark Grey and Mist Grey, each are interchangeable as embedment and top coats for the specifier to select the visible appearance of the completed roof.

### WATERPROOFING SYSTEM

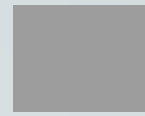
The system is compatible with most existing waterproofing products and deck types.

### Membrane Colours

The following finish colours are available as standard.



Dark Grey

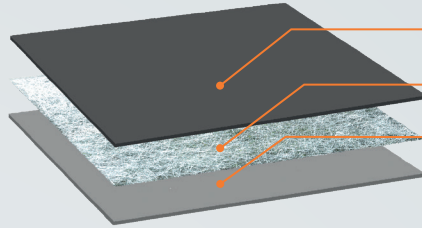


Mist Grey



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### TWO COAT SYSTEM (LiquiTOP System)



#### LiquiTOP PU top coat

(shown here using LiquiTOP PU Dark Grey)

#### LiquiTOP Glass Fibre Mat

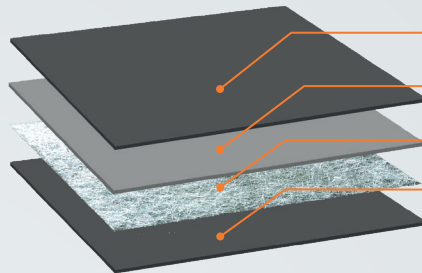
225g/m<sup>2</sup> reinforcement layer

#### LiquiTOP PU embedment coat

(shown here using LiquiTOP PU Mist Grey) on appropriate primer, specified as required.

### THREE COAT SYSTEM (LiquiTOP 3COAT System)

Extended longevity and lifespan.



#### LiquiTOP PU top coat

(shown here using LiquiTOP PU Dark Grey)

#### LiquiTOP PU intermediate coat

(shown here using LiquiTOP PU Mist Grey)

#### LiquiTOP Glass Fibre Mat

225g/m<sup>2</sup> reinforcement layer

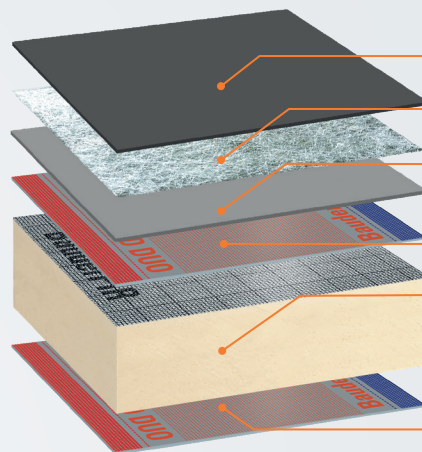
#### LiquiTOP PU embedment coat

(shown here using LiquiTOP PU Dark Grey) on appropriate primer, specified as required.

### INSULATED SYSTEM

Used in new build or refurbishment applications in a warm roof construction and incorporates Bauder insulation and self-adhesive bitumen membranes for the air and vapour control layer and carrier membrane. There is a choice of insulations available depending on the building's thermal performance, weight capacity and fire performance requirements. The insulated system can be a two coat or three coat installation depending on required life-expectancy.

### TWO COAT SYSTEM (LiquiTOP Insulated System)



#### LiquiTOP PU top coat

(shown here using LiquiTOP PU Dark Grey)

#### LiquiTOP Glass Fibre Mat

225g/m<sup>2</sup> reinforcement layer

#### LiquiTOP PU embedment coat

(shown here using LiquiTOP PU Mist Grey) on appropriate primer, specified as required.

#### BauderTEC KSD DUO

self-adhesive elastomeric bitumen carrier membrane.

#### BauderPIR FA-TE Insulation

extremely thermally efficient, lightweight and zero ODP rated. The insulation is foil-faced on both sides for increased thermal efficiency. BauderROCK or BauderVIP can be used as an alternative insulant.

#### Bauder self-adhesive elastomeric bitumen membrane

air and vapour control layer on appropriate primer. Bauder TEC KSD DUO (shown) is generally specified, unless on a concrete deck where BauderTEC KSD Mica is used.

# INSTALLATION SEQUENCE



Embedment coat is applied at the details and the glass fibre mat reinforcement embedded.



Embedment coat and glass fibre mat are dressed into the throat of the existing outlets.



The field area of the roof then receives the embedment coat and reinforcement.



The completed embedment coat is left to cure, usually overnight. At this stage the completed reinforced embedment coat acts as a temporary waterproofing.



The top coat, seen here in Dark Grey is first applied wet-on-dry to the details.



The pipe penetration receives the PU top coat and the weather edge adequately protected.



When all the details have received the top coat, the main roof area receives the top coat.



The completed roof is finished with chase details pointed or sealed, flashings turned down and covers positioned on outlets and penetrations.



# BAUDER

## UNITED KINGDOM

Bauder Limited  
70 Landseer Road, Ipswich, Suffolk IP3 0DH,  
England  
T: +44 (0)1473 257671 E: info@bauder.co.uk  
[bauder.co.uk](http://bauder.co.uk)

## IRELAND

Bauder Limited  
O'Duffy Centre, Carrickmacross, Co. Monaghan,  
Ireland  
T: +353 (0)42 9692 333 E: info@bauder.ie  
[bauder.ie](http://bauder.ie)