

LIQUITEC ROOF SYSTEM

TECHNICAL INSTALLATION GUIDE

INTRODUCTION AND CONTENTS

This manual provides important guidelines for Approved Bauder Contractors and their operatives in the recommended preparation and application requirements for installing the Bauder LiquiTEC Cold Liquid Applied Roof system. Information also includes a guide to safe handling and storage of the various products and the related installation equipment required.

The information contained within this technical guide is designed to be used in conjunction with a Bauder specification. Bauder continually updates and reviews both the technical guidance and installation techniques to ensure the most up-to-date methods are employed.

Bauder technical department provides support to answer any queries which may not have been covered in this guide, or on matters relating to general flat roof construction.
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Some of the information contained within this document is taken from BS/EN standards and is correct at the time of production, however, confirmation should be sought from the correct authority if using the quoted standards in this document.

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SYSTEM OVERVIEW AND MAIN ATTRIBUTES

What is Bauder LiquiTEC Cold Liquid Applied Roof System?

The Bauder LiquiTEC Cold Liquid Applied Roof System combines catalyst activated PMMA based liquid resins and polyester reinforcement fleece to form a fast curing, tough and durable roof waterproofing membrane, which can be used in both new build and refurbishment flat roof applications directly to a variety of substrates and existing waterproofing materials. It is also possible to incorporate warm roof insulation into the system, refer to page 36 for full details.

The system comprises:

Bauder LiquiPRIME 1 (if required) – resin for priming timber, asphalt, bitumen and APP felt.

Bauder LiquiPRIME 2 (if required) – resin for priming cementitious materials, brickwork and blockwork etc.

Bauder LiquiPASTE (if required) – resin for repairing cracks and holes in the substrate.

Bauder PMMA Cleaner – for cleaning metal and plastic substrates, re-activating previously applied resin and cleaning tools. Supplied in screw top metal containers.

Bauder LiquiDETAIL – resin for waterproofing upstands and details.

Bauder LiquiFIBRE – resin for waterproofing awkward shapes and areas where access is restricted.

Bauder LiquiDEK – resin for waterproofing main roof areas.

Bauder 110g reinforcement fleece – reinforcement fleece for LiquiDEK and LiquiDETAIL, available in various convenient widths of 50M long rolls.

Catalyst – powder to be added to resins prior to application to trigger the curing process. Supplied in small polybags or larger bags (0.1kg, 1.0kg and 25kg).

Anti-skid granules (if required) – for non-slip finish.

Bauder Quartz (if required) – a heavy duty wearing layer for areas such as fire escape routes or maintenance walkways.

Bauder LiquiFINISH (if required) - finish coat resin, used to provide alternative colours, or when anti-skid granules or wearing layer is required.

Liquid Thixo (if required) – Thixotropic agent for use as an additive to LiquiPRIME and LiquiFINISH when treating upstands over 250mm high. Can also be used with LiquiDEK when waterproofing sloped roofs over 10°.

The resins are packaged in re-sealable metal containers which will be supplied separately or on pallets.

What is PMMA?

PMMA is an abbreviation for Poly Methyl Methacrylate. Methyl Methacrylate (MMA) was first synthesised in 1903, with the first practical and commercial applications coming in the early 1930's. It was originally used for dentures due to its low water absorption, lack of toxicity and dimensional stability, and then during the Second World War for aircraft windshields (Plexiglas). Plexiglas and its derivatives are still used today - half the weight and 17 times stronger than glass. MMA has been used since the 1950's for bone cements, dental cements and fillings, and was later used to make contact lenses.

SYSTEM OVERVIEW AND MAIN ATTRIBUTES

In construction, the development of MMA for use in flooring goes back to the 1960's. The resins and systems were designed to be:

- Impact resistant;
- Abrasion resistant and resistant to mechanical wear;
- Impermeable to liquids;
- Hygienically safe;
- Highly durable;
- Resistant to chemicals and weathering;
- Non-sensitive to humidity;
- Easy to overcoat;
- Variable in colour and design characteristics;
- Usable over wide temperature range.

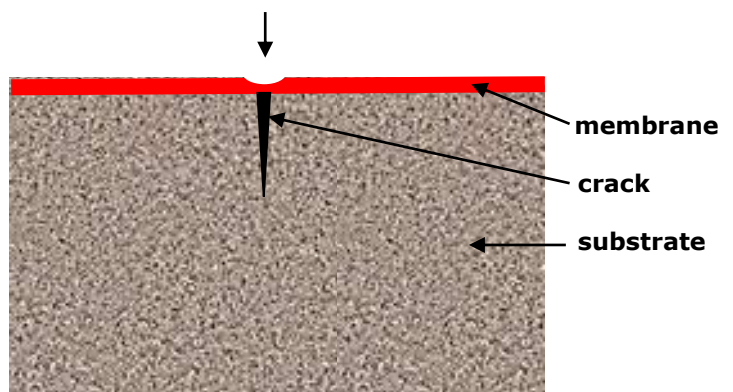
By introducing flexibility and other properties into the MMA (PMMA) resins, flooring systems were developed into other applications in the 1970's

PMMA roofing systems now have a greater than 20 year track record.

Why use a reinforcement fleece?

Whatever the elastomeric properties, any un-reinforced, fully bonded liquid applied material will have difficulty in bridging unforeseen cracks. As movement occurs, the system remains fully bonded either side of the crack. The movement must be accommodated within the free width of the membrane over the crack and within the thickness of the system. See diagram below.

Concentration of movement

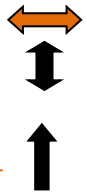


- Membrane remains fully bonded either side of crack
- Membrane will thin out over crack prior to failure
- Elastomeric properties will become irrelevant
- The unique elastomeric waterproofing resins, Bauder LiquiDEK and LiquiDETAIL, in conjunction with the special Bauder 110g reinforcement fleece provides the system with:
 - Exceptional long-term resistance to regular and unforeseen movement.
 - Exceptional long-term resistance to flexural fatigue.

SYSTEM OVERVIEW AND MAIN ATTRIBUTES

The Bauder 110g reinforcement fleece helps the Bauder LiquiTEC system to achieve the following technical characteristics:

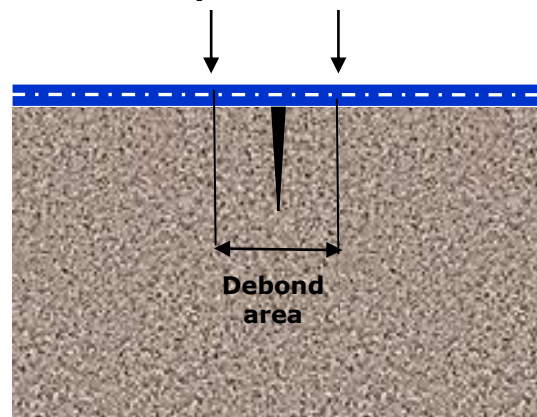
- Tensile Strength: ————— c.a 6.50 N/mm²
- Inter Layer Adhesion: ————— c.a 3.30 N/mm²
- Adhesion to Substrate: ————— min – 0.80 N/mm² max – 2.50 N/mm² —————



The diagram below shows the positive effect of the Bauder 110g reinforcement fleece.

Movement is spread between these points

- The membrane de- bonds when movement is excessive: It is easier to break the bond to the substrate than tear the membrane
- This allows a greater free width of membrane to provide the required elastomeric properties



SUBSTRATE SUITABILITY

Bauder LiquiTEC is suitable for both New Build and Refurbishment applications as a Cold or Inverted Roof design. It can be applied directly onto concrete decks and can also be applied to most existing waterproofing membranes as an overlay membrane. Timber decks will require the prior application of a carrier membrane to bridge panel joints and take up any movement between them. Refer to the specific project specification for further details.

It is essential that a proper assessment of the substrate is carried out in all cases and that adhesion tests and thorough preparation are undertaken before commencement.

Substrate assessment

• Structural assessment

- Ensure that the structure is designed to withstand the proposed loadings.
- Any existing known structural defects must be rectified prior to overlay.
- Concrete structures should be designed in accordance with BS8110/CP110.
- Timber / plywood decks must be constructed from minimum 15mm exterior grade plywood, with joists at max 450mm centres and minimum 18mm for up to 600mm centres. Deck to be mechanically fixed with countersunk fixings at 100mm centres along all joists and noggins.

• General substrate assessment

- Assess the stability of the underlying substrate prior to the commencement of work.
- Surfaces to be coated including existing repair materials must be firmly fixed.

• Dimensional stability

- All factors which may affect the subsequent performance of the roof, e.g. saturated insulation, failed structural elements etc. must be removed, repaired or replaced.

• Falls

A design fall of minimum 1:40 is recommended in order to ensure a constructed fall of minimum 1:80 is achieved. However, the Bauder LiquiTEC system is suitable for application to zero pitch roofs, but it is essential that any areas of backfalls or deflection are levelled prior to installing the system.

• Surface moisture

The surface must be dry prior to overlay with Bauder LiquiTEC.

Theoretical check:

- The surface temperature must be higher than the dew point (this can be calculated – see page 16).

SUBSTRATE SUITABILITY

Practical checks:

- If it looks wet, feels wet, appears wet – it is unlikely to be dry!
- Apply a tissue to the surface and ensure dry when removed.

• Moisture content (cementitious materials)

Prior to overlay with Bauder LiquiTEC systems, the equilibrium moisture content of the substrate must not exceed 6% by weight or 75% RH.

Ensure that moisture will not come into contact with the underside of the coating due to structural conditions. Bauder LiquiTEC is **not** a DPM.

Measured checks:

- Carry out RH test in accordance with British Standard using a suitable hygrometer (eg. GE Protimeter MMS). Please note this is a non-destructive method but lacks accuracy.



- Carry out equilibrium moisture test with CM tester. This is a destructive method to check the actual moisture content of the sample.



Note: Both methods give a result for the sample only and not the deck as a whole.

Practical advice

Lower risk scenarios:

- Refurbishment (hydration complete)
- If the surface is closed with few voids e.g. power floated
- If the substrate is white / light grey
- If the substrate looks impermeable
- If there is no buried membrane or permanent formwork
- If the substrate has previously been waterproofed
- If the cementitious material is polymer modified
- If the area has good falls

SUBSTRATE SUITABILITY

- If the area is under cover

Higher risk scenarios:

- New build (hydration incomplete – green concrete)
- Sand and cement screeds
- Anything brown
- If the surface is open with voids
- If the substrate looks porous / contains porous aggregates (lytag)
- If there is a buried membrane* or permanent formwork
- If the substrate has never previously been waterproofed
- If the area has poor falls
- If the area is exposed

*Do not proceed without Bauder technical advice

Practical checks:

- Dry core and break the sample or simply remove a sample (hammer and chisel) and observe apparent moisture levels at the surface and deeper within the build up. If anything looks damp / wet do not proceed
- Use adhesion testing / observation of primer coat
- Prepare and prime an area and look for:
 - Blisters
 - Blooming / milkiness
 - Adhesion: If a risk is perceived set a limit for adhesion higher than standard (e.g. 2.0N/mm²)

Minimising the risk:

- Prime the higher risk areas first, but leave as long as possible before overlaying. If the primer shows any of the problems listed above, the substrate is not sufficiently dry.

Specific advice for new concrete:

- Consult the engineer / concrete supplier for details of the mix and the estimated hydration times.
- Allow minimum 28 days.

Note: A high moisture content will result in blisters and / or poor adhesion.

SUBSTRATE SUITABILITY

- **Hardness**

Substrates should achieve a minimum hardness of 25N/mm².

Measured checks

- Carry out compressive strength tests with a "Schmidt" hammer



Practical checks

- With particular regard to cementitious substrates, if the surface is not friable, cannot be eroded with the heel of a shoe, does not feel soft or crumbly, the compressive strength is likely to be higher than 25N/mm².
- If the existing substrate is trafficked and has been subjected to point loadings without indentation, then it is likely to be suitable for overlay with a trafficable system.

Substrate Preparation

Basic requirements

- The substrate must be clean, dry and free from dust, laitance, grease, oil and any other contaminants.
- Where there are existing coatings, paints or sealers fully remove (or carry out on site adhesion tests to determine suitability for overlay).
- For timber / plywood decks, a suitable carrier membrane is to be applied prior to applying the Bauder LiquiTEC system. Refer to specific project specification for more details.

Initial Cleaning Equipment / Methods Pressure Washer (2,000 psi)

- Washing down / organic growth removal.

Typical Preparation Equipment

Brushing – use of a stiff brush for removal of dirt and dust.

Scarifier - for de-chipping/preparation of certain cementitious materials etc.

Open shot blasting - for coating removal/cementitious materials/asphalt

Hand grinder (diamond / carbide) – for detail preparation

Sanding – for detail preparation/metals/plastic/certain single ply membranes

SUBSTRATE SUITABILITY

Substrate Preparation & Priming Schedule

Substrate	Preparation Notes	Main area	Details
Asphalt	1/8	Bauder LiquiPRIME 1	Bauder LiquiPRIME 1
Polymer modified asphalt	1/8	Bauder LiquiPRIME 1	Bauder LiquiPRIME 1
Oxidised bitumen membrane	2/9	Bauder LiquiPRIME 1 to exposed bitumen only	Bauder LiquiPRIME 1 to exposed bitumen only
SBS modified bitumen membrane	2/9	Bauder LiquiPRIME 1 to exposed bitumen only	Bauder LiquiPRIME 1 to exposed bitumen only
APP modified bitumen membrane	2/9	Bauder LiquiPRIME 1 to exposed bitumen only	Bauder LiquiPRIME 1 to exposed bitumen only
Bitumen	2	Bauder LiquiPRIME 1	Bauder LiquiPRIME 1
Concrete / Screed / brickwork	1/5	Bauder LiquiPRIME 2	Bauder LiquiPRIME 2
New Concrete / Porous concrete	1/5	Cryl Primer 287	Cryl Primer 287
Concrete with 6-10% equilibrium moisture content	1	Seek Bauder advice	Seek Bauder advice
Lightweight concrete / render	1	Seek Bauder advice	Seek Bauder advice
Polymer modified concrete	1/5	Bauder LiquiPRIME 2	Bauder LiquiPRIME 2
Blockwork (porous)	1/5	Bauder LiquiPRIME 2 at 0.6Kg/m ² with maximum catalyst + 1% Liquid Thixo	Bauder LiquiPRIME 2 at 0.6Kg/m ² with maximum catalyst + 1% Liquid Thixo
Steel	3	No primer required	No primer required
Galvanised steel	3	No primer required	No primer required
Stainless steel	3	No primer required	No primer required
Aluminium	3	No primer required	No primer required
Copper	3	No primer required	No primer required
Zinc	3	No primer required	No primer required
Lead	3	No primer required	No primer required
Glass	3	No primer required	No primer required
Wood / timber / ply	2	Bauder LiquiPRIME 1	Bauder LiquiPRIME 1
EPDM	2/6	Special Primer 610	Special Primer 610
Other substrates		Subject to testing	Subject to testing
Single ply membranes:			
CPE	3/7	No primer required	No primer required
EVA	2/7	No primer required	No primer required
PIB	2/7	No primer required	No primer required
PVC-P, nB	3/7	No primer required	No primer required
Other single-ply membranes		Subject to testing	Subject to testing
Plastics (sheets, coatings, mouldings):		Subject to testing	Subject to testing
UPVC / PVC	3	No primer required	No primer required
GRP	3	No primer required	No primer required
Acrylic Glass	3	No primer required	No primer required
PU (polyurethane)	4/6	No primer required	No primer required
PMMA (poly methylmethacrylate)	4/6	No primer required	No primer required
UP (polyester)	4/6	No primer required	No primer required
EP (epoxy)	4/6	No primer required	No primer required

SUBSTRATE SUITABILITY

Preparation notes:

- 1 = Scarify, grind or lightly bead blast.
- 2 = Scrape and sweep away contamination and clean by power washing (with or without approved detergent) as required.
- 3 = Rub down thoroughly with Bauder PMMA Cleaner and abrade / grind metals and hard plastics to achieve a roughened surface. (Steel must be ground or blasted to bright metal – where all rust cannot be practically removed, use “Hammerite No.1 Rustbeater” prior to the application of Bauder LiquiTEC products).
- 4 = Lightly abrade and carry out an adhesion test as described in this manual
- 5 = The equilibrium moisture content of cementitious materials must not exceed 6% or 75% RH. Where moisture levels are in excess of these values seek advice from Bauder regarding possible use of Pox R106.
- 6 = Subject to testing of insitu material and approval by Bauder Technical Team.
- 7 = Where large areas are to be treated, test areas to be carried out to ensure ruckling does not occur.
- 8 = Blisters and high spots should be cut away using a grinder. Do not heat and trowel.
- 9 = Loose areas and blisters to be cut away.

Where there are any doubts as to adhesion, preparation or substrate stability carry out adhesion tests as described in this manual.

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

SUBSTRATE SUITABILITY

The importance of Adhesion

The LiquiTEC system should achieve a minimum bond to the substrate of:

- Cementitious materials / metals / plastics / hard substrates: 1.50N/mm²
- Asphalt and other substrates: 0.80N/mm²
- Unbonded / loose laid substrates where pull off tests not possible (membranes):
Peel strength adhesion 30N/50mm

Measured checks:

- Carry out pull off tests using minimum 50mm dollies and carefully assess results
- Carry out DIN EN 12316 peel strength adhesion tests



After applying a test area of Bauder LiquiDEK (and recommended primer if required), cut a circular hole through the Bauder coating and upper layers of the substrate with a hole saw. Adhere 50mm dolly to the surface of the LiquiDEK within the cut area and allow adhesive to cure.

Carry out adhesion test with calibrated hydraulic test rig.

Practical checks:

- Carry out pull off tests using minimum 50mm dollies and calibrated hydraulic test rig and carefully assess results (as detailed above).
- Carry out on site peel tests

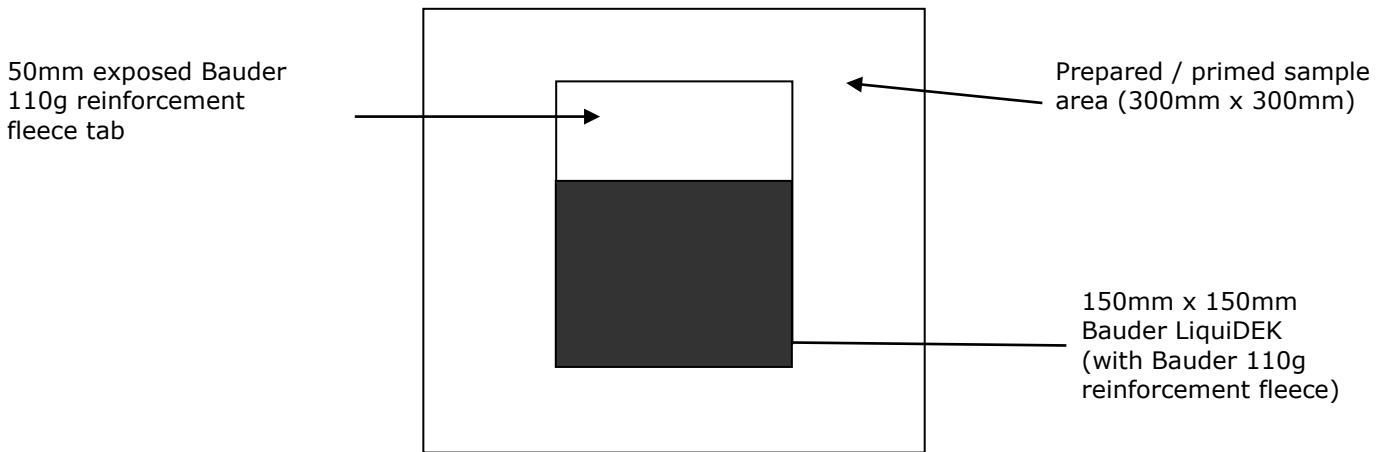
Note: The assessment of the results is critical. Adhesion tests are often not just a test of the LiquiTEC adhesion to the substrate but a test of the preparation and the cohesive strength of the substrate itself.

SUBSTRATE SUITABILITY

Peel test method

Carry out adhesion tests as illustrated below:

- **Prepare substrate and apply resins.**



Waiting times before peeling

Substrate	Waiting Time
Synthetic single ply membranes	min. 3 hours
Coated materials e.g. metals	min. 3 hours
Cementitious materials	min. 3 hours
Bituminous materials	min. 3 hours and ideally after 72 hours due to lower initial adhesion

- **Peel method:** Hold the exposed fleece and pull slowly at **90 degrees** to the substrate.

SUBSTRATE SUITABILITY

- **Assessment:**

Mode of failure	Assessment
Cannot be removed	Satisfactory adhesion
Fleece tears	Satisfactory adhesion
Interlayer delamination of LiquiDEK membrane	Satisfactory adhesion
LiquiDEK membrane difficult to remove and removes top layer of homogenous substrate (not coating)	Satisfactory adhesion
LiquiDEK membrane easy to remove with little or no LiquiDEK material left on substrate, or substrate on LiquiDEK membrane	Poor adhesion – re-test using different preparation / primer / combinations and leave for a minimum of 72 hours
LiquiDEK membrane easy to remove and removes coating (paint etc.) from coated substrate	Poor adhesion – remove coating from substrate and re-test

USING THE BAUDER LIQUITEC ROOF SYSTEM

Application conditions

Temperature

The products can be applied within the temperature range printed on the rear label on the drum. Some products can be applied at surface temperatures as low as -5°C.

Certain Bauder resins are available in both summer and winter variants which allow an overlap in usage at moderate temperatures. Essentially the winter resins can be used up to a maximum temperature of +20°C and the summer resins down to a minimum temperature of +10°C with both summer and winter resins suitable for use between 10°C and 20°C.

At less than 10°C summer resin should not be used and at more than 20°C winter resin should not be used.

The temperatures apply to both ambient and substrate and in sunny conditions, particular attention should be paid to the heat of darker substrates as high temperatures can cause incomplete flash curing of the product resulting in a sticky finish and poor mechanical properties.

Measuring substrate temperatures

As substrate temperature is so critical to the successful installation of the system it is important to measure this periodically during the working day using an infrared non-contact digital thermometer. These are inexpensive, readily available pieces of equipment.

Maximum ambient/substrate temperatures

All substrates except reflective membranes (eg. BauderTEC KSD DUO) – **35°C**

Reflective membranes (eg. BauderTEC KSD DUO) – **25°C**.

These materials do not absorb the heat from the sun so will register lower temperatures, but as sunlight is reflected at the liquid system being applied the heat transfer into the liquid will be higher than that transferred by non-reflective membranes.

Dew point

The surface temperature must be above the dew point when the product is applied if the temperature is lower than the dew point, a film of moisture may form on the surface and compromise adhesion / curing of the material

USING THE BAUDER LIQUITEC ROOF SYSTEM

Chart showing dew points relative to air temperature and relative humidity

Air temperature	Dew point in °C at a relative humidity of											Saturation humidity (Volume of water) g/m ³
	30 %	40 %	50 %	55 %	60 %	65 %	70 %	75 %	80 %	85 %	95 %	
°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C
+30	10.5	14.9	18.5	19.9	21.2	22.8	24.2	25.3	26.4	27.5	29.2	30.4
+26	7.1	11.3	14.9	16.2	17.6	18.9	19.8	21.1	22.3	23.5	25.2	24.4
+24	5.4	9.5	13.0	14.4	15.8	17.0	18.2	19.3	20.3	21.2	23.1	21.8
+22	3.6	7.7	11.1	12.5	13.9	15.2	16.3	17.4	18.4	19.4	21.2	19.4
+20	1.9	6.0	9.3	10.7	12.0	13.2	14.3	15.4	16.5	17.4	19.2	17.3
+18	0.2	4.2	7.4	8.8	10.1	11.3	12.4	13.5	14.5	15.4	17.2	15.4
+16	-1.5	2.4	5.6	7.0	8.2	9.4	10.5	11.5	12.5	13.4	15.2	13.6
+14	-3.3	-0.6	3.8	5.1	6.4	7.5	8.6	9.6	10.6	11.5	13.2	12.1
+12	-5.0	-1.2	1.9	3.2	4.3	5.5	6.6	7.6	8.5	9.5	11.2	10.7
+10	-6.7	-2.9	0.1	1.4	2.6	3.7	4.8	5.8	6.7	7.6	9.2	9.4
+8	-8.5	-4.8	-1.6	-0.4	0.7	1.8	2.9	3.9	4.8	5.6	7.2	8.3
+6	-10.3	-6.6	-3.2	-2.1	-1.0	-0.1	0.9	1.9	2.8	3.6	5.2	7.3
+4	-12.0	-8.5	-4.8	-3.7	-2.7	-1.8	-0.9	0.1	0.8	1.6	3.2	6.4
+2	-13.7	-10.2	-6.5	-5.3	-4.3	-3.4	-2.5	-1.6	-0.8	0.1	1.3	5.6
+0	-15.4	-12.0	-8.6	-6.6	-5.6	-4.7	-3.8	-3.1	-2.3	-1.6	-0.3	4.8

Example:
Condensation is formed if air at a temperature of 20°C and 60% relative humidity meets surfaces with a temperature of 12°C and cooler

In practical terms – ensure that the substrate is dry to the touch

Ventilation

Inadequate air movement leads to inhibition of the chemical reaction of PMMA products leading to poor curing/adhesion.

In enclosed areas the air must be replaced at least 7 times per hour by forced ventilation.

Health and Safety

The following precautions should always be taken when applying any chemical construction products:

- When using do not eat, drink or smoke
- Avoid contact with the eyes and skin
- Keep the products away from food and drink
- Wear personal protective clothing and equipment
- Comply with the information in the Safety Data Sheets

Storage

Resins

- Keep containers tightly closed
- Keep containers dry, protected from frost, and store in a cool, well ventilated area
- Protect against direct sun and heat, and ambient temperatures above 25°C
- Storage life is at least 6 months
- In winter containers should be stored at room temperature before application wherever possible.

USING THE BAUDER LIQUITEC ROOF SYSTEM

Catalyst

- Keep containers dry, protected from frost, and store in a cool, well ventilated area
- Protect against direct sun and heat

Important: Resins and catalyst must not be stored together

Fleece

- Keep clean and dry

Disposal of products

- Cured resin is classified as 'plastic' and is non-hazardous waste. Refer to the suggested European Waste Catalogue (EWC) codes on the Safety Data Sheets for individual products.
- If Bauder LiquiTEC products are ever removed from the roof, the cured material is classified as mixed construction waste and is non-hazardous.
- Uncured liquid resins are all classed as hazardous waste and should always be avoided by catalysing the resin.
- It is recommended that contaminated Bauder PMMA Cleaner is allowed to evaporate until a solid residue is formed, this can be achieved by storage in a container with a lid with high level vent holes in the sides.

APPLICATION OF PRODUCTS

General important information

Site set up:

- The areas used for mixing and transferring the products into other containers must be covered with a suitable plastic sheet (e.g. Tarpaulin) before work is started.
- Any un-catalysed / uncured resin that is in contact with the substrate to be coated will cause problems if not removed.

Stirring:

- Stir the resin in its container thoroughly for 2 minutes using electric mixing paddle.

Decanting:

- If a full pack is not being applied, decant the approximate amount required into a suitable bucket.

Catalysing:

- The mixing ratio of resin to catalyst is detailed in the mixing instructions printed on the drum and varies for each product;
- Always use the maximum practical catalyst for the temperature range.
- Never use less than 2% catalyst and except in special circumstances, more than 6%.

Importance of correct resin consumption:

- The minimum consumptions for all products are stated in the specifications;
- The consumptions are based on smooth, even substrates;
- Allowances must be made if the substrate is uneven, rough or porous – particularly for Primers;
- Application at below the minimum consumption will result in poor curing/poor adhesion/poor mechanical and physical properties.

Measures to be taken if work is interrupted:

- If work is interrupted for more than 12 hours, or if the area to be coated is contaminated, e.g. by rain, the area to be overcoated must be pre-treated with Bauder PMMA Cleaner;
- Bauder PMMA Cleaner must be applied and allowed to evaporate c.a. 20 minutes and overlaid within c.a. 60 minutes;
- Subsequent waterproofing layers must have at least a 100mm overlap, including the fleece (standard overlap is 50mm).

Cleaning of tools and equipment:

- The mixing and application tools must be cleaned thoroughly with Bauder PMMA Cleaner at regular intervals to prevent resin build up and when the work is interrupted / completed.

APPLICATION OF PRODUCTS

Primers

- **Bauder LiquiPRIME 1**
- **Bauder LiquiPRIME 2**

Tools required:

- 25cm synthetic, deep pile rollers, roller handles & telescopic handle
- 10cm synthetic, deep pile rollers and handles
- Masking tape
- Scissors
- Electric mixing paddle
- Rubber gloves
- Suitable size buckets
- Catalyst measuring jug
- Weighing scales

STEP 1 - Masking:

Apply the masking tape along the top of details at waterproofing height. Mask the perimeter of the works as required.



STEP 2 - Prepare the mixing area:

Cover the mixing area with a clean sheet (e.g. Tarpaulin) to avoid contamination of the substrate.

STEP 3 - Stir:

Stir the primer in its container thoroughly for 2 minutes using electric mixing paddle.

STEP 4 - Decanting:

If a full pack is not being applied, pour out the approximate amount required into a suitable bucket.

STEP 5 – Thixotropic addition (if required)

For details in excess of 250mm high add 1% Liquid Thixo to prevent runs. Mix in and leave for 5 minutes to allow to gel prior to catalysing.

STEP 6 - Catalysing:

Add the correct amount of catalyst for the amount of resin and the temperature conditions (see table on the container) while stirring until a smooth consistency is achieved. Leave for approximately 1 minute for the catalyst to dissolve and re-stir.



APPLICATION OF PRODUCTS

STEP 7 - Application to details:

Apply the primer to the details first using a 10cm roller, ensuring the primer is applied in a thick coat (to the correct minimum consumption of 0.4Kg/m²).

Tip: To ensure correct application thickness there should be no pressure applied to the roller and the primer should be applied to the top of the upstand first!



STEP 8 - Application to main area:

Apply the primer to the main area using a 25cm roller, ensuring the primer is applied in a thick coat (to the correct minimum consumption of 0.4Kg/m²). Work over the primer in both directions without applying pressure to ensure an even application and impregnation of the substrate.



STEP 9 - Un-masking:

! ALWAYS REMOVE THE MASKING TAPE WHILST THE PRIMER IS STILL WET!

Surface repairs and filling

- There are a range of different materials available from Bauder for surface repairs and filling.
- **Bauder LiquiPASTE**
Uses: Small, shallow repairs and crack filling.
Felt blister filling.
- **Bauder LiquiPASTE Mortar** (LiquiPASTE mixed 1:1 with 0.7 – 1.2mm fire dried crystal quartz)
Uses: Re-forming upstands
Blister filling
- **LIQUIPAVE RF** (LiquiPAVE R + LiquiPAVE F, ratio 1:2.3)
Uses: Self levelling repairs - e.g. to shallow depressions (2 – 5mm) on asphalt / concrete.

APPLICATION OF PRODUCTS

- **LiquiPAVE RF Mortar** (LiquiPAVE RF mixed 33:25 with 0.7 – 1.2mm Bauder quartz)
Uses: Repairs to larger depressions / voids (5 – 20mm) on asphalt / concrete
- **Cryl RS 240** (concrete repair mortar)
Uses: Repairs to cementitious substrates (5 – 50mm)
- **Levelling Mortar & Filler** (flexible mortar)
Uses: Levelling and filling of asphalt substrates (5 – 50mm)

Bauder LiquiPASTE:

Tools required:

- Smoothing trowel
- Mixing stick
- Rubber gloves
- Suitable size buckets
- Catalyst measuring jug
- Weighing scales

STEP 1 - Decanting:

Mix the resin in the original container and if a full pack is not being applied, decant the approximate amount required into a suitable bucket.



STEP 2 - Stirring and catalysing the resin:

Add the correct amount of catalyst for the amount of resin and the temperature conditions (see table on the drum) while stirring until a smooth consistency is achieved.

Any filler or quartz required is to be mixed in after catalysing. Leave for approximately 1 minute for the catalyst to dissolve and re-stir.



STEP 3 - Application:

Apply the product by trowel.



APPLICATION OF PRODUCTS

Upstand & detail waterproofing products

- **Bauder LiquiDETAIL**
- **Bauder LiquiFIBRE**

When to use:

Bauder LiquiDETAIL is used as the primary waterproofing membrane for interface details. The product uses Bauder 110 g reinforcement fleece to provide tensile strength.



Bauder LiquiFIBRE is used for highly complex details and in areas where access prohibits the use of Bauder 110g reinforcement fleece.



Tools:

- 10cm synthetic deep pile rollers and handle (LiquiDETAIL)
- Brushes (LiquiFIBRE)
- Masking tape
- Scissors (LiquiDETAIL only)
- Mixing paddle / sticks
- Rubber gloves
- Suitable size buckets
- Catalyst measuring jug
- Weighing scales

Preparation and mixing:

STEP 1 - Masking:

Apply the masking tape along the top of details at waterproofing height and just below the height of the primer. Mask the perimeter of the works as required.



APPLICATION OF PRODUCTS

STEP 2 – Bauder 110g reinforcement fleece preparation (LiquiDETAIL only):

Cut fleece for internal and external corners, outlets, protrusions, etc. before mixing and catalysing Bauder LiquiDETAIL.

STEP 3 - Prepare the mixing area:

Cover the mixing area with a clean sheet (e.g. Tarpaulin) to avoid contamination of the substrate

STEP 4 - Stir:

Stir the resin in its container thoroughly for 2 minutes using electric mixing paddle.

STEP 5 - Decanting:

If a full pack is not being applied, decant the approximate amount required into a suitable bucket.

STEP 6 - Catalysing:

Add the correct amount of catalyst for the amount of resin and the temperature conditions (see table on the container) while stirring until a smooth consistency is achieved. Leave for approximately 1 minute for the catalyst to dissolve and re-stir.



Application:

Waterproofing of upstands with Bauder LiquiDETAIL

STEP 1 – Fleece preparation:

Cut 100mm diameter circles of Bauder 110g reinforcement fleece and snip to the centre to allow the fleece to fit internal and external corners.



STEP 2 – Embedding the fleece:

Apply a generous amount of Bauder LiquiDETAIL (min 2.0kg/m²) with a brush or a radiator roller and embed the external corner. Make sure there is no trapped air beneath the fleece by rolling to outer edges.



APPLICATION OF PRODUCTS

STEP 3 – Overcoating the fleece:

Apply a further generous coat of Bauder LiquiDETAIL (min 1.0kg/m²) over the embedded external and internal corners. Ensure that between any layers of Bauder 110g reinforcement fleece is a generous amount of Bauder LiquiDETAIL.



STEP 4 – Upstand detail:

Use a 100mm roller to apply a generous layer of Bauder LiquiDETAIL to the main upstand sections (min 2.0kg/m²). Never apply to more than 2 linear metres at a time.



STEP 5 – Embedding the fleece:

Embed cut sections or unrolled strips of Bauder 110g reinforcement fleece into the wet resin, making sure that the fleece is fully saturated and that trapped air is pressed free using the roller.



For internal corners bring the fleece 50mm around the corner and cut at the base of the fold into the corner. Overlap the cut section, making sure that there are no dry fleece overlaps.

APPLICATION OF PRODUCTS

For external corners bring the fleece 50mm around the corner and cut at the base of the fold into the corner. Then place the cut section around the corner and cover the exposed area of the floor with another section of fleece cut to size.



STEP 6 – Overcoating the fleece:

Finally, apply another generous layer of Bauder LiquiDETAIL (min 1.0kg/m²) to the embedded fleece (min. 1.0kg/m²) wet on wet.



STEP 7 – Unmasking:

Remove the masking tape while the resin is still wet.



- **TIP:** For high upstands and upstands with height changes use wider sections of fleece applied in vertical strips to ease application.

Waterproofing of pipes and penetrations with Bauder LiquiDETAIL

STEP 1 - Masking:

Apply masking tape around the penetration at waterproofing height (150mm) and the base (at least 100mm from the penetration).

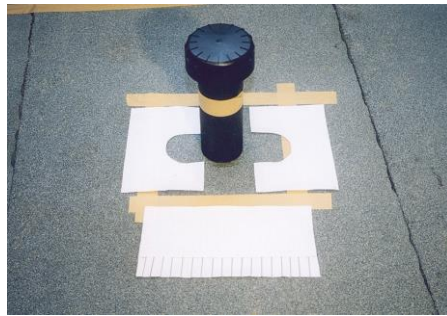


APPLICATION OF PRODUCTS

STEP 2 - Fleece preparation:

Penetration: Fleece width: 200mm, Fleece length: Circumference of pipe + 50mm. Cut strips all along one side of the fleece, making the cuts 50mm long and 10mm apart.

Surrounding flat area: Cut two sections of fleece and cut out a U shape in each to closely fit the diameter of the penetration. The two sections of fleece must overlap at least 50mm.



STEP 3 – Embedding the vertical fleece:

Apply a generous layer of Bauder LiquiDETAIL (min 2.0kg/m²) with a radiator roller or brush to the penetration and the surrounding flat area.

Embed the cut section of fleece for the penetration in the wet resin, making sure that the fleece is fully saturated and there is no trapped air.

STEP 4 – Overcoating the vertical fleece:

Apply another generous layer of Bauder LiquiDETAIL in the area of the overlap and a further generous coat of Bauder LiquiDETAIL (min 1.0kg/m²) over the embedded fleece.



STEP 5 – Embedding the deck fleece:

Apply a first layer of Bauder LiquiDETAIL (min 2.0kg/m²) to the flat area, then embed the first section of fleece, making sure there is no trapped air and coat with another generous layer of resin to ensure no dry overlaps are present.



APPLICATION OF PRODUCTS

STEP 6 – Overcoating the deck fleece:

Embed the second section of fleece for the area making sure there is no trapped air, and coat with another generous layer (min 1.0kg/m²) of Bauder LiquiDETAIL.



STEP 7 – Unmasking:

Remove the masking tape while the resin is still wet.



Waterproofing of outlets with Bauder LiquiDETAIL

STEP 1 - Masking: Apply masking tape to mark the area to be waterproofed and block the outlet with a rag or tape.



STEP 2 – Preparation / Cleaning:

Remove any paint and rust. Any rust that cannot be removed must be treated with Hammerite No. 1 Rustbeater. Clean the outlet flange / bowl with Bauder PMMA Cleaner and roughen the surface with sand paper (metals / hard plastics).



STEP 3 – Outlet fleece preparation:

Fleece width: 150mm, Fleece length: Outlet circumference + 50mm. Cut zigzags / strips all along the fleece, making the cuts 50mm long and the zigzags / strips 10mm wide.

APPLICATION OF PRODUCTS

STEP 4 – Surrounding deck area fleece preparation:

Cut one section of fleece with a star pattern cut into the centre to the size of the diameter of the outlet.



STEP 5 – Embedding the outlet fleece:

Apply a generous layer of Bauder LiquiDETAIL (min 2.0kg/m²) inside and around the outlet and embed the cut section of fleece pressing free any trapped air.

STEP 6 – Overcoating the outlet fleece:

Fold the zigzag pattern over on to the flat area and apply another generous coating of resin above to saturate the fleece.



STEP 7 – Embedding the deck fleece:

Apply a generous layer of Bauder LiquiDETAIL (min 2.0kg/m²) to the flat area and into the outlet. Embed the fleece for the flat area, making sure there is no trapped air, and use the brush to fold the zigzag pattern into the outlet.



APPLICATION OF PRODUCTS

STEP 8 – Overcoating the deck fleece:

Then cover the fleece with a generous further coat of resin (min 1.0kg/m²).



STEP 9 - Un-masking:

Take the rag / tape out of the outlet and remove the masking tape while the resin is still wet.



Waterproofing to edge trim with Bauder LiquiDETAIL

STEP 1 - Surface preparation:

Wipe down the trim with Bauder PMMA Cleaner to degrease and abrade the surface to create a key. Mask the surfaces where required.

STEP 2 – Embedding the fleece:

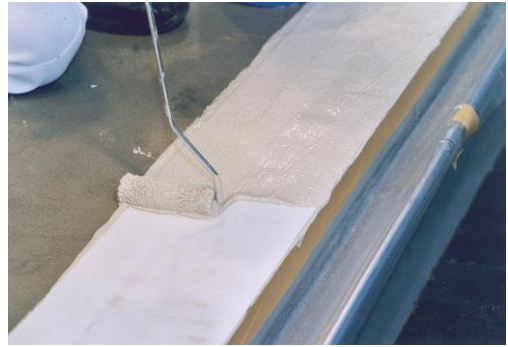
Use a 100mm roller to apply a generous first layer of Bauder LiquiDETAIL (min 2.0kg/m²). Embed cut sections or unrolled strips of Bauder 110g reinforcement fleece into the wet resin, making sure that the fleece is fully saturated and that trapped air is pressed free.



APPLICATION OF PRODUCTS

STEP 3 – Application:

Then apply another generous layer of Bauder LiquiDETAIL to the embedded fleece.



STEP 4 - Un-masking:

Remove the masking tape while the resin is still wet.



Bauder LiquiDETAIL - Important notes & Tips

1. Ensure masking tape is applied prior to application.
2. Minimum 3.0kg/m² of resin
3. Apply 2/3 of the resin under the fleece (2.0kg/m²) and 1/3 over the fleece (1.0kg/m²).
4. Mix just the resin which can be used in the pot life.
5. Never apply more than 2 linear metres of embedment resin at a time.
6. In many cases it will be easier to apply the fleece in strips rather than from the roll.
7. Ensure there are no dry fleece overlaps.
8. Press trapped air free using the roller / brush.
9. Remove masking tape whilst resin is still wet.

***Note:** The most important element of the system is having sufficient resin beneath the fleece.

Waterproofing of awkward details using Bauder LiquiFIBRE

STEP 1 - Apply masking tape around the penetration at waterproofing height (150mm) and the base (at least 100mm from the penetration).

STEP 2 - Apply first coat of LiquiFIBRE with a heavily laden brush at a rate of 1.5Kg/m².

STEP 3 - Remove masking tape immediately and allow to cure thoroughly.

STEP 4 - Re-apply masking tape slightly past the first coat application area.

STEP 5 - Apply second coat at the same rate as the first coat, with brush strokes at 90° to the first coat.

Note: **Do not apply second coat until first coat is completely cured.**

APPLICATION OF PRODUCTS

STEP 6 - Remove masking tape while the resin is still wet.



Main Area Waterproofing

- **Bauder LiquiDEK**

Tools required:

- 25cm synthetic, deep pile rollers, roller handles & telescopic handle
- Spiked shoes (restricted areas)
- Scissors
- Mixing paddle
- Rubber gloves
- Suitable size plastic buckets
- Catalyst measuring jug / spoon
- Weighing scales

Step 1 - Prepare the mixing area:

Cover the mixing area with a clean sheet (e.g. Tarpaulin) to avoid contamination of the substrate.

Step 2 - Stirring the resin:

Stir the resin component thoroughly for 2 minutes using the electric mixing paddle.

Step 3 - Catalysing:

Add the correct amount of catalyst for the amount of resin and the temperature conditions (see table on the drum) while stirring until a smooth consistency is achieved.

Application (1):

Using the dip and roll technique (approx. 3 dips for a 2-roller width distance) apply the embedment layer of LiquiDEK to the substrate (min 2.0kg/m²).



APPLICATION OF PRODUCTS

Application (2):

Embed the Bauder 110g reinforcement fleece, pressing free any trapped air and making sure that the fleece is fully saturated.



Application (3):

Cover the embedded fleece with resin (min 1.0kg/m²) – wet on wet – to ensure full saturation.



Application (4):

Apply the embedment layer resin for the second length of fleece, and embed the fleece, pressing trapped air free.

The individual fleece lengths must overlap by at least 50mm.



Application (5):

Again, cover the embedded fleece with resin (min 1.0kg/m²) – wet on wet – to ensure full saturation.



Sloped roofs

For roofs over 10° slope, mix 1% Liquid Thixo with the resin prior to catalysing and allow to gel for 5 minutes to increase viscosity, prevent runs and maintain the minimum consumption.

Bauder LiquiDEK - Important notes & Tips

1. Minimum 3.0kg/m² of resin.
2. Apply 2/3 of the resin under the fleece (2.0kg/m²) and 1/3 over the fleece (1.0kg/m²).
3. Do not pour the resin onto the deck – use a dip and roll technique.

Note: The most important element of the system is the resin beneath the fleece.

APPLICATION OF PRODUCTS

Optional finish coats

- **LiquiFINISH / LiquiFINISH anti-skid**

This product can be used when a special colour finish is required, or to provide an anti-skid finish, or both.

Tools:

- 25cm synthetic, deep pile rollers, roller handles & telescopic handle
- 10cm synthetic, deep pile rollers and handles
- Brush
- Mixing paddle
- Rubber gloves
- Suitable size plastic buckets
- Catalyst measuring jug / spoon
- Weighing scales

Step 1 - Masking:

Apply masking tape to mark off the termination areas before starting work



Step 2 - Stirring the resin:

Stir the resin component thoroughly for 2 minutes with the electric mixing paddle

Step 3 - Decanting:

Decant the required amount into a suitable bucket

Step 4 - Thixotropic addition (if required):

For details in excess of 250mm high add 1% Liquid Thixo to prevent runs. Mix in and leave for 5 minutes to allow to gel prior to catalysing.

Step 5 - Catalysing:

Add the correct amount of catalyst for the amount of resin and the temperature conditions (see table on the drum) while still stirring until a smooth consistency is achieved.

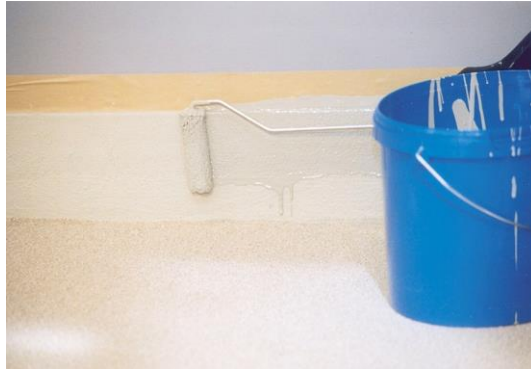
Step 6 - Anti-skid granules (if required):

Where an anti-skid finish is required, anti-skid granules should be stirred into the resin at a rate of 20-40 grams per kg of resin prior to application.

APPLICATION OF PRODUCTS

Step 7 - Application (1) - to details:

Use a 10cm roller or brush to apply a generous layer of LiquiFINISH to the details. Remove the masking tape while the resin is still wet.



Step 8 - Application (2) - main area:

Apply the LiquiFINISH to the main area with a 25cm roller ensuring it is applied in a thick coat (to the correct minimum consumption of 0.4Kg/m²).



Heavy Duty Wearing Course

This finish option provides a heavy duty walkway finish for fire escape routes and maintenance walkways. It comprises Bauder LiquiDEK, Bauder quartz and LiquiFINISH.

Step 1 – Provide another layer of Bauder LiquiDEK as described on page 31, but at a rate of 1.5Kg/m² and without reinforcement fleece

APPLICATION OF PRODUCTS

Step 2 – Immediately embed Bauder quartz while the resin is still wet by broadcasting at a rate of 7Kg/m². The aggregate must drop into the system from a vertical direction to avoid disturbing the resin mixture and creating ripples.



Step 3 – Allow to fully cure for a minimum of 1 hour, sweep off the excess and vacuum clean. Do not attempt to reuse the excess aggregate, this must be discarded.



Step 4 – Apply LiquiFINISH over the Bauder quartz at a rate of 0.65kg/m² as detailed on pages 33 – 34.



Warm Roof System

Introduction

If BauderPIR warm roof insulation is required underneath the LiquiTEC system, it becomes necessary to introduce Bauder self-adhesive bitumen membranes to act as vapour control layer and carrier membrane. The warm roof system can be used over profiled metal decks, timber and cementitious substrates, as well as a wide range of existing waterproofing membranes, subject to survey.

Due to the limitations of self-adhesive bitumen membranes the ambient / surface temperature must be a minimum of 5°C

System components

Bauder SA Bonding Primer - A special bonding primer for use with Bauder self-adhesive bitumen membranes. Always used on the flat area of roof to ensure the vapour barrier is securely bonded. As this primer is incompatible with LiquiTEC products when in direct contact, upstands are to be primed with LiquiPRIME 1 or 2 as appropriate.

BauderTEC KSD DUO vapour barrier - A 1.5mm thick foil faced self-adhesive bitumen membrane with a patented side lap system which allows a choice of sealing methods depending on project requirements and ambient temperature.

Bauder Insulation Adhesive – Twin Cartridge. A chemically curing, foaming polyurethane adhesive applied directly to the vapour barrier, to provide a bonding medium for the insulation.

BauderPIR FA-TE insulation - An extremely efficient PIR insulation board with aluminium foil facing on both sides. The top facing features a printed grid pattern to act as a guideline for on-site cutting. **BauderPIR tapered insulation** may be incorporated beneath this layer, with the two layers bonded together in Bauder Insulation Adhesive to provide drainage falls if required.

BauderTEC KSD DUO carrier membrane – Another layer of this product is installed above the insulation to provide a carrier for the LiquiTEC system.

Bauder LiquiDETAIL & LiquiDEK – These products are installed to upstands and flat area directly over the BauderTEC KSD DUO.

Warm Roof System

Application overview

Step 1 - Ensure upstands and details are sound, clean and dry.

Step 2 - Use masking tape to neatly define the extremity of the primer, which should be applied to a minimum distance of 155mm past the finished surface level of the new insulation.



Step 3 - Apply LiquiPRIME 1 or 2 as appropriate to upstands & details, with reference to the instructions shown on page 20 and the preparation and priming schedule shown on page 11.



Step 4 - Remove masking tape **before** primer cures.



Step 5 - Once the primer has cured, any areas of upstand that require repair and are to directly receive LiquiDETAIL waterproofing can now be repaired using the appropriate LiquiTEC repair product. Refer to Pages 20 & 21 for details.

Step 6 - Prepare flat area to provide a sound, clean and dry surface. All irregularities in the surface must be removed to provide as smooth a surface as possible. When overlaying existing waterproofing any loose or damaged areas are to be repaired, resealed or cut away prior to applying the Bauder SA Bonding Primer. All materials containing moisture should be removed and replaced as necessary.

Warm Roof System

Step 7 - Apply Bauder SA Bonding Primer across the flat area using a roller in accordance with the instructions on the container and allow to dry. The primer dries non-tacky in 30-60 minutes. Never apply the vapour barrier within 30 minutes, even if it appears dry.

Note: Vapour barrier must be installed within 4 hours of primer application, otherwise the primer should be re-applied, as it gradually loses its bonding properties.

Step 8 - Install BauderTEC KSD DUO vapour barrier by removing the release film to reveal the self-adhesive bitumen compound and rolling into place, dressing it to a distance of 100mm past the point of the proposed insulation surface level at all upstands and details, terminating at least 50mm short of the proposed finished waterproofing line.

Step 9 - All laps to be a minimum 80mm and as follows:

Ambient / material temperatures between 5 and 10°C – Side laps to be laid red over blue and all laps heat sealed using hot air welding equipment, or gas torch if permitted. Extrusion of bitumen from the lap must be avoided or removed at upstands to avoid contamination of the subsequently applied LiquiDETAIL.

Ambient / material temperatures higher than 10°C – Side laps **may** be laid blue over red (self-adhered) and all laps rolled using a pressure roller to ensure a satisfactory bond is achieved.

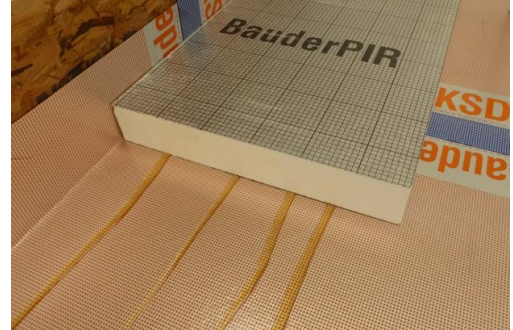
Step 10 - Where side laps are formed blue over red, the red lap must be mitred at the top of upstands as shown to allow the blue lap to bond to the substrate.

Note: - Self-adhered side laps (blue over red) should not be treated as permanently watertight. Therefore, this method should only be used in areas where the remaining layers of the roof system can be completed the same day.



Warm Roof System

Step 11 - Bond the insulation in Bauder Twin Cartridge insulation adhesive in accordance with the project specification. The adhesive is applied in beads approximately 8-12mm wide. The insulation should be close-butted and rows should be staggered so that joints are not all in a line.



Step 12 - Install BauderTEC KSD DUO over the insulation by removing the release film and rolling into place, making sure it is laid without creasing. This acts as a carrier membrane for the Bauder LiquiTEC waterproofing. Refer to point 9 for details regarding formation of lap joints. **Care should be taken to avoid bitumen extrusion from lap joints when heat sealing as this will cause staining through the LiquiTEC waterproofing.**



Step 13 - Form a minimum 50mm lap between the vapour barrier and carrier membrane at all upstands and details.



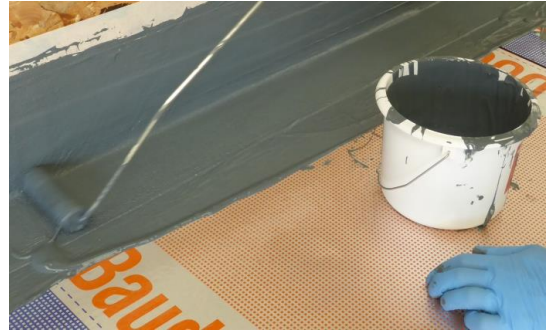
Step 14 - Apply masking tape to the details, overlapping onto the previously primed area by 5mm. This will allow the LiquiDETAIL to be bonded to the substrate by a minimum of 50mm past the point of the vapour barrier.



Warm Roof System

Step 15 – If the primer has been applied for longer than 12 hours or if it has become contaminated with rain or dirt it must be re-activated by applying PMMA cleaner with a clean cloth and allowing 20–60 minutes before proceeding.

Apply the Bauder LiquiDETAIL to all upstands and details in accordance with the instructions given in the LiquiTEC Installation Guide, remembering to remove the masking tape immediately after application.



Step 16 – If the carrier membrane has become contaminated by dirt or rain, the surface should be cleaned using PMMA cleaner on a clean cloth and allowing 20-60 minutes before proceeding.

Apply the Bauder LiquiDEK to the flat area in accordance with the instructions given in the LiquiTEC Installation Guide.



TROUBLESHOOTING

Trouble shooting

Operation / product	Problem	Causes	Solution
Primer Bauder LiquiPRIME 1 & 2	Primer does not cure (remains wet or very sticky)	Too Little or no Catalyst Applied too thinly Incorrectly mixed Poor substrate preparation Porous substrate Reaction with substrate	Remove the primer Clean with Bauder PMMA Cleaner Test to ensure a reaction has not occurred. Apply new primer with correct catalyst (upper limit) at minimum consumption or above.
	Defects in the primer (incomplete film/tacky surface)	Applied too thinly Applied by squeegee and not working in both directions Too little or no catalyst Incorrectly mixed Poor substrate preparation Porous substrate	Test and if suitable: Reapply primer to defective areas immediately wet in wet using maximum catalyst and minimum consumption of above.
	Primer lifting at the edges/primer shatters	Primer applied too thickly	Remove all loose/shattered sections Reapply primer to defective areas.
	Lumps form on the primed surface	Primer applied after the end of pot life	Remove lumps with a trowel or by sanding down. Reapply primer to defective areas.
Paste Bauder LiquiPASTE	Paste does not cure	Too little or no catalyst Incorrectly mixed	Remove the paste. Clean with Bauder PMMA Cleaner and allow to evaporate. Reapply paste.
Waterproofing Bauder LiquiDEK Bauder LiquiDETAIL	Waterproofing does not cure/delaminates from substrate	Too little or no catalyst Incorrectly mixed First layer of resin applied under the fleece is too thin.	Completely remove the waterproofing. Clean the area with Bauder PMMA Cleaner and allow to evaporate. Abrade the substrate. Re-apply primer if necessary. Re-apply waterproofing.
	Blistering in the waterproofing	Air pockets – the fleece is not embedded correctly First layer of resin applied under the fleece is too thin Incorrectly mixed Defects in the primer	Cut open the blisters and remove. Remove material that has failed to cure fully. Clean the area with Bauder PMMA Cleaner. Mechanically roughen the substrate Reapply primer if necessary. Reapply waterproofing.
	Waterproofing has cured but is tacky	Temperatures too high or too low No/low air movement	Clean the area with Bauder PMMA Cleaner and allow to evaporate. If required apply additional layer of resin/finish – subject to testing.

Maintenance and care

The Bauder LiquiTEC system itself is designed to avoid the requirement for regular maintenance as far as possible. However, all flat roofs should be inspected twice annually (Spring and Winter) in order to keep the roof in good condition and determine any problems in their early stages.

General maintenance items

1. Remove any debris from the deck area, and all items which could potentially cause damage to the system.
2. Check and clean outlets, drainage points, gutters, downspouts etc. and ensure that all rainwater goods are working effectively.
3. Carefully remove any plant growth.
4. Check all details visually to ensure a sound bond to substrate.
5. Check the installed System for any signs of mechanical or chemical damage.
6. Check the soffit where visible for evidence of water ingress, wet patches, water staining etc.
7. Check other building components e.g. balustrades, surface mounted details, walls, threshold details etc. for soundness.
8. Any observations that require attention to the installed Bauder LiquiTEC System should be reported to the Bauder Approved Contractor that installed the system.

Repairs

1. Areas of mechanical damage should be repaired by the original installer as soon as possible after they become evident.
2. The Bauder approved contractor should consult Bauder Limited for approved repair methods.

Additions and removals

Prior to additions or removals taking place which may affect the integrity of the installed Bauder system, Bauder Limited to be contacted for approved methods.

General protection

Where treated areas are likely to suffer damage or contamination from other trades during subsequent or other works, suitable precautions should be taken to protect the installed system.

Cleaning methods:

Should cleaning be required we recommend the following methods:

- **Pressure washing**

1. Manually brush anyway any loose particles, general dust, dirt etc.
2. Ensure all outlets, drainage points, gutters and downspouts are clear and free from any blockage.
3. Apply a cold or warm ($\leq 50^{\circ}\text{C}$) water pressure wash with approved detergent in solution.
4. The head of the water lance should be kept at least 500mm away from the surface at all times and the pressure should be restricted to less than 1500psi.
5. Preferably leave the detergent solution on the surface for approximately 15 minutes.
6. For stubborn areas of dirt, gently brush or mop the surface after the detergent

MAINTENANCE

has been applied.

7. Rinse the surface with clean, cold water. The head of the water lance should be kept at least 500mm away from the coated surface at all times and the pressure should be restricted to less than 1500psi.
8. Squeegee excess water from the surface to outlets, gullies etc.

- **Manually washing down**

1. Manually brush away any loose particles, dirt, dust etc.
2. Mop the area to be treated with a solution of warm water and approved detergent. For stubborn areas of dirt, gently brush the surface while it is still wet. Care should be taken to only use mop heads that will not be shredded by the quartz surface.

Important notes for all cleaning methods:

1. Water temperature should not exceed 50°C.
2. Only detergents or degreasants approved by Bauder Limited should be used.
3. Cleaning methods should not allow water to penetrate behind the waterproofing.
4. Cleaning methods and materials not in accordance with Bauder guidelines may affect any warranty.

De-Icing

1. De-icing products which can potentially lead to steel corrosion should not be used unless substrates are fully protected and waterproofed.
2. De-icers which dissolve and do not leave an unsightly, dirty residue on the walkway, balcony or terrace areas are recommended.
3. Bauder walkway, balcony and terrace systems are resistant to common de-icing materials including:
 - Rock salt (white preferable)
 - Sodium acetate based de-icers
 - Potassium Acetate based de-icers
 - Calcium chloride flakes
 - Prilled Urea



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