

# **HYDROSTOP** AH+ Liquid Waterproofing Systems

*Installation Manual*





*Our high performance range of HYDROSTOP AH+ systems offers practical and efficient waterproofing solutions.*

**HYDROSTOP AH+ liquid applied waterproofing systems are cold applied, liquid membranes suitable for refurbishment or new build applications across the commercial and domestic sectors.**

**They are suitable for most flat and pitched roof surfaces as described in this manual.**



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# Introduction

## LIQUID APPLIED WATERPROOFING

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HYDROSTOP AH+ liquid waterproofing membrane is the latest innovation in liquid roofing technology combining the benefits associated with existing alternative products to create a new system which is very user friendly.

Customers currently using liquid applied waterproofing systems will be familiar with the challenges often associated with this type of product.

Unpleasant odours, restrictive weather conditions, differing application processes, multi component systems – combined, these make the successful installation of liquid systems very challenging.

HYDROSTOP AH+ has been developed with these attributes in mind to produce a membrane which is considerate to the needs of the installer.

HYDROSTOP AH+ is a liquid waterproofing system that eliminates many of the challenges faced, to provide a product which is very practical to use and 'ticks all the boxes'.

## SYSTEM BENEFITS

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- Completely solvent free
- No VOCs
- Re-sealable lids
- Very low odour
- Fast curing
- 'Wet-on-wet' application
- Usable at low temperature
- Vapour permeable



## **ROOF TYPES**

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HYDROSTOP AH+ is an extremely versatile product which can be used for flat roof applications of all shapes and sizes, ranging from small domestic to large commercial projects.

HYDROSTOP AH+ Liquid Waterproofing System is typically used for the following applications:

- Commercial refurbishment
- Commercial new build
- Domestic applications
  - Extensions
  - Garages
  - Bay windows
  - Dormer roofs



# Product Range at a Glance

The HYDROSTOP AH+ system comprises a very simple product range.

## PREPARATION

- **HYDROSTOP AH+ Rust Stabiliser**

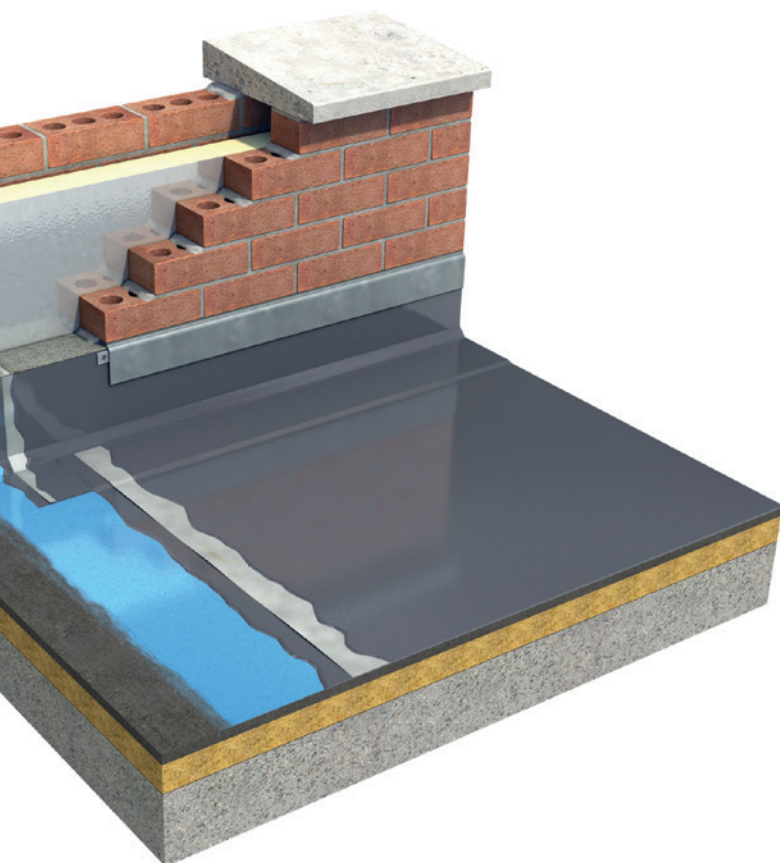
A thin liquid which transforms iron oxide into a stable and insoluble metallo-organic compound. It is applied to surfaces metal where residual, light rust cannot be removed and, prior to application of the HYDROSTOP AH+ Metal Primer.

- Tin size: 4L
- Coverage rate: 0.1 L/m<sup>2</sup>

- **HYDROSTOP AH+ Self-Adhesive Jointing Tape**

A self-adhesive tape with a liquid receivable upper surface intended for bridging gaps and joints.

- Roll Size = 100 mm x 25 m



## PRIMERS

HYDROSTOP AH+ Primers are applied by brush or roller to seal the substrate prior to application of the specified HYDROSTOP AH+ Liquid Waterproofing System.

- **HYDROSTOP AH+ WP Primer**

Suitable for application to a variety of substrates such as PVC single ply, timber, GRP and SIG D&T Approved Insulation.

- Tin size: 4L and 20L
- Coverage rate: 0.1 L/m<sup>2</sup>

- **HYDROSTOP AH+ Blocker Primer**

Suitable for application to substrates, such as bitumen membranes (SBS & APP) and mastic asphalt.

- Tin size: 4L and 20L
- Coverage rate: 0.3 - 0.5 L/m<sup>2</sup>

- **HYDROSTOP AH+ Concrete Primer**

A two component epoxy based primer intended for cementitious based substrates.

- Tin size: 10kg
- Coverage rate: 0.4 - 0.6 kg/m<sup>2</sup>

- **HYDROSTOP AH+ Metal Primer**

A water based acrylic primer used as an adhesion coat on bare ferrous metal.

- Tin size: 4L
- Coverage rate: 0.2 L/m<sup>2</sup>

- **HYDROSTOP AH+ TPO Primer**

A solvent based, low viscosity primer intended for adhesion promotion and stain blocking on synthetic TPO membranes.

- Tin size: 10kg
- Coverage rate: 0.1 L/m<sup>2</sup>



## WATERPROOFING SYSTEM

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- **HYDROSTOP AH15+ Liquid Waterproofing and HYDROSTOP AH25+ Liquid Waterproofing**

A single component polyurethane based, moisture curing coating applied in multiple layers in conjunction with a polyester reinforcing fleece.

- Tin size: 15L
- Coverage rate: 1.2 L/m<sup>2</sup> (HYDROSTOP AH15+)  
2.0 L/m<sup>2</sup> (HYDROSTOP AH25+)

- **HYDROSTOP AH15+ Reinforcing Fabric and HYDROSTOP AH25+ Premium Reinforcing Fabric**

Polyester based reinforcing fleeces that are available in two weights – 110gsm (HYDROSTOP AH15+) and 165gsm (HYDROSTOP AH25+). Both are embedded into the relevant HYDROSTOP AH+ liquid applied waterproofing coating in a 'wet-on-wet' application. The fleeces are available in a number of widths.

HYDROSTOP AH15+ Reinforcing Fabric:

- 100m x 1.0m
- 100m x 0.25m
- 100m x 0.1m

HYDROSTOP AH25+ Premium Reinforcing Fabric:

- 50m x 1.0m
- 50m x 0.3m

## ANTI-SKID WALKWAY

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HYDROSTOP AH+ Walkway System provides an anti-skid surface, which protects the waterproofing from pedestrian foot traffic where access to the roof area for maintenance purposes is required.

Once the HYDROSTOP AH+ Liquid Waterproofing System is applied and cured, a base resin coat of HYDROSTOP AH+ Liquid Waterproof Coating is applied into which the anti-skid quartz granules are broadcast. This is then overcoated with a UV protection coat to encapsulate the system.

- **HYDROSTOP AH+ Standard Quartz** are 0.4 – 0.8 mm diameter coloured quartz granules supplied in a 25 kg bag.

- Bag size: 25kg
- Coverage rate: 6.0 kg/m<sup>2</sup>
- Colour: Black / Grey (mixed)

- **HYDROSTOP AH+ Transparent**

A single component, low solvent coating based on a light-stable resin. It is translucent in colour once cured and is used as a final coating to encapsulate the embedded quartz layer.

- Tin size: 4L and 20L
- Coverage rate: 0.5 L/m<sup>2</sup> (applied in two coats of 0.25 L/m<sup>2</sup> per coat)

# Tools and Equipment

The following is intended as a basic list of tools and equipment and their operation necessary to install the HYDROSTOP AH+ Liquid Waterproofing System. Depending on the project, other tools and equipment may be required.

Additionally, these instructions are provided as recommended guidelines to follow to ensure proper performance of the equipment and successful installation of the HYDROSTOP AH+ Liquid Waterproofing System. SIG Design & Technology does not endorse or recommend any particular brand of equipment.

## EQUIPMENT

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### Rollers

All roller frames must be double armed. Wrap gaffer tape around the roller head prior to use to remove loose fibres. New roller heads should be used at the start of each new application.

### Brushes

Brushes should be used to apply the primers and waterproofing coatings on small areas only.

They may also be used to embed the HYDROSTOP AH+ Reinforcing Fabric into the HYDROSTOP AH+ Liquid Waterproofing Coating, for 90° angles, gaps and cracks.

### Mini-Rollers

Mini-rollers will be required for detailing areas, such as corners and roof edges.

### Scissors

A good, sharp pair of large scissors will be needed to cut the fabric. Do not use a utility knife.

### Personal Protective Equipment\*

Gloves, overalls, goggles, masks and other personal protective equipment (PPE) will be required.

### Decorator's Whisk Mixer

Electric paddle mixing is not recommended for the HYDROSTOP AH+ Liquid Waterproofing Coating. Use only hand-held paddles or drills with a decorator's whisk at low speeds.

Over agitating will add air into the product, creating bubbles. After mixing, allow the product to stand for approximately 10 minutes to allow the trapped air to evacuate from the bucket. This will minimise the risk of trapped air within the system and reduce the risk of pinholes in the finished product.

### Mechanical Scabbler

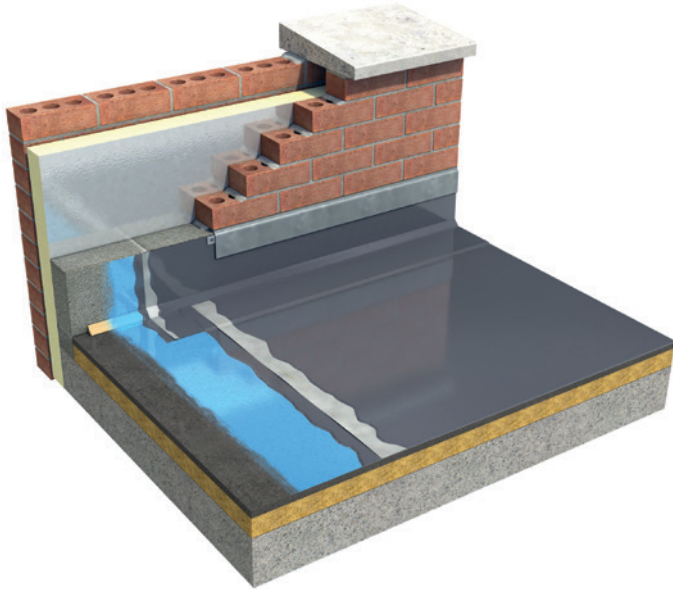
A mechanical scabbler may be required to remove solar reflective paint, chippings or other surface finishes.

\* Always refer to the Material Safety Data Sheets for further PPE requirements.

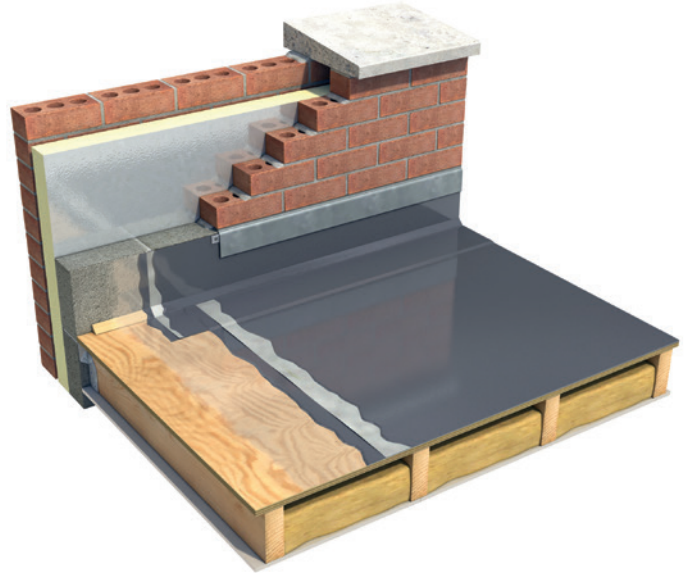


# Systems at a Glance

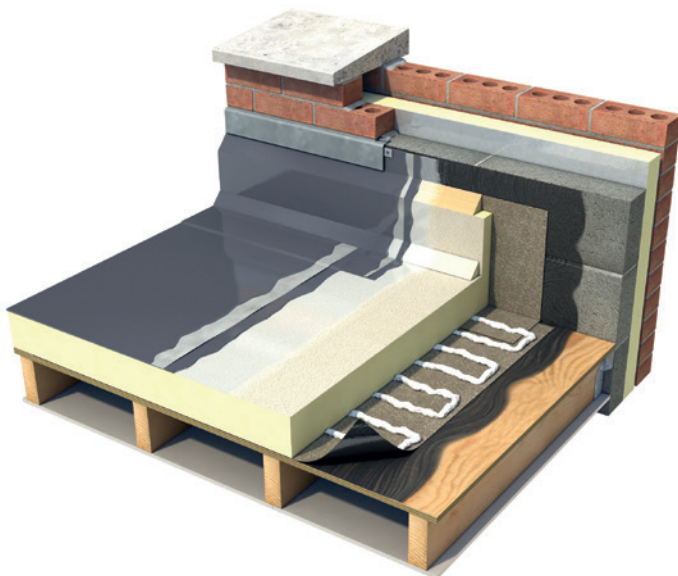
HYDROSTOP AH+: Asphalt or Bitumen Overlay



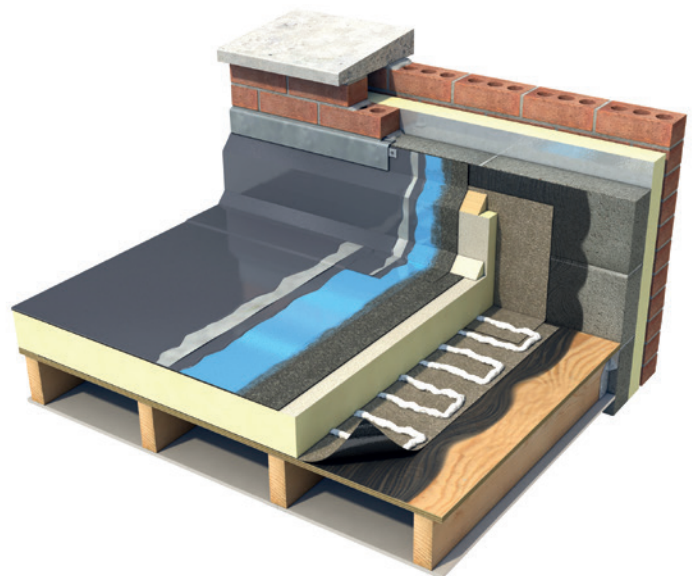
HYDROSTOP AH+: OSB / Plywood Cold Roof



HYDROSTOP AH+: Warm Roof (without carrier membrane)



HYDROSTOP AH+: Warm Roof (with carrier membrane)



# Roof Preparation

## WORKING CONDITIONS

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Ideally, the HYDROSTOP AH+ Liquid Waterproofing System should not be applied in wet conditions or at atmospheric and substrate temperatures below 5 °C. Apply the HYDROSTOP AH+ Liquid Waterproofing Coating only when the substrate and ambient temperatures exceed 5 °C. During application the surface temperature must be 3 °C above the dew point and rising. If the substrate temperature is below or at the dew point temperature then moisture can form which can affect coating adhesion and membrane cure. It should not be applied in windy conditions (wind speeds in excess of 7 m/s) unless adequate temporary windbreaks are erected.

## PRE-START / PRE-COMMENCEMENT

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Co-ordinate the waterproofing work with other trades. The applicator should have sole right of access to the specified areas for the time needed to complete the application.

Protect adjoining surfaces not to be waterproofed against damage or spoiling. Protect plants, vegetation and animals which might be affected by waterproofing operations.

Maintain work area in a neat and orderly condition, removing empty containers, rags and rubbish daily from the site.

## ROOF PREPARATION

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### Standing Water

All standing water must be removed. Surfaces with a particularly high moisture content can affect the finished membrane.

**Note:** Existing roofs currently experiencing standing water will continue to do so unless positive falls are introduced encouraging the movement of rainwater to the designed discharge point. The introduction of a new waterproofing membrane directly above the existing system will not change the roof falls, and ponding water will continue to occur.

### Vegetation

Remove all vegetation growth from the existing roof surface. Regardless of the extent of vegetation coverage. A fungicidal wash must be applied to the cleared areas immediately.

### Existing Debris (Rubbish, Redundant Plant & Dust)

Rubbish, redundant plant/equipment should all be removed and disposed of accordingly. Overlying surface dust should be swept clear leaving only the existing waterproofing surface. Jet washing the existing surface is to be left to the contractor's discretion dependent upon the condition of the surface to be overlaid..

### Chippings & Solar Reflective Paint

Paint and loose chippings must be removed from surface. Surface to be grit blasted, power washed, swept, wire brushed or mechanically abraded as appropriate. Any damages to be filled / repaired.

### Patch Insulation

In areas where the existing insulation is found to be soft or damaged, cut out the affected area of insulation and replace with a suitable thickness of suitable insulation. Apply a replacement patch of membrane as appropriate.

### Roof Plant/Equipment

Any items outside the scope of the coating specification (e.g. roof fixtures such as cables, pipes, air conditioning plant, etc.), should be temporarily diverted or completely removed in order that the appropriate areas can be treated. Roof fixtures should not be removed without appropriate permissions or deference to safety. Prior to the replacement of the roof fixtures, allow the coating to completely cure for a period of several days. All plant and equipment should be reinstalled on appropriate

supports and/or bearing pads. Where possible, obsolete or redundant plant/outlets, etc, should be completely removed and areas made good as appropriate.

## SUBSTRATE PREPARATION

### Plywood / OSB

Plywood for roofing decking should be of WBP/marine grade and suitable for external use (to BS EN 636-2012: Clause 8). Oriented Strand Board (OSB) should be manufactured to OSB/Type 3 (to BS EN 300:2006).

Boards for roof decking should be a minimum 18 mm thick for joist spans up to 600 mm.

During installation allow a minimum gap of 3 mm between boards to allow for expansion / contraction. Joints in sheets should be locally reinforced with 100mm wide HYDROSTOP AH+ Reinforcing Fabric embedded within a light application of HYDROSTOP AH+ Liquid Waterproofing Coating between the boards.

All boards must be securely fixed and supported in accordance with the sheeting manufacturer's specification and all areas must be swept to remove dust and debris, which could cause the HYDROSTOP AH+ Liquid Waterproofing System to de-bond. Any damaged or wet boards should be replaced.

### Bituminous Membranes

Cut back badly cracked and defective areas of felt as required. Blisters should be star cut, dried out and re-sealed. Check the integrity of upstands and cut back or repair any loose/un-bonded layers. Any voids greater than 5 mm should be filled prior to the application of the system. Excess mineral and debris should be swept up.

### Weathered Asphalt

The asphalt should be checked for security, and any defective areas repaired. Any blisters or defects in the existing asphalt waterproofing should cut out and filled to give a sound supporting substrate. Slumped or debonded asphalt shall be cut back.

Areas of badly crazed asphalt should be mechanically abraded to remove the majority of surface irregularities and remaining voids subsequently filled. Any voids greater than 5 mm should be filled prior to the application of the system. Solar reflective paint should be removed prior to application of the HYDROSTOP AH+ Liquid Waterproofing System.

### Filling

Repairs to voids, blisters, gaps and cracks that have been cut back and prepared can be filled using HYDROSTOP AH+ Concrete Primer plus quartz sand, polyurethane based mastic sealant, or cement based mixes. The type and nature of the filler is subject to substrate type and size and should be confirmed with SIG D&T Technical Department prior to commencement.



### Cementitious / Concrete

New concrete substrates should be designed and built in accordance with BS EN 1992:2004. All new concrete should be a minimum of twenty-eight days old. If additives, cement replacement or curing agents have been used please consult the Technical Service Department for further advice. New concrete should be finished to a U2 specification in accordance with the National Structural Concrete Specification Edition 3:2004 (NSCS).

Surfaces should be dry and excessive moisture must be removed. Test the existing substrate with a non-destructive electronic moisture meter. Check and record the moisture content.

Surfaces should be free from friable material, laitance or any contamination to allow sufficient adhesion of the waterproofing system. Uneven concrete with peaks or voids greater than 10 mm can be prepared by suitable mechanical means such as diamond grinding, vacuum blasting or grit blasting to provide a sound surface. All laitance must be removed so that the large aggregates in the deck slab are visible. All blow holes and voids must be filled. The surface should be checked for positive texture 'protrusions' that might affect the placement of reinforcement scrim or the thickness control of the wearing course. The prepared concrete texture should be similar to that of coarse sandpaper.

Investigate structural defects or cracks in the substrate before applying the waterproofing system.

Concrete toppings and screeds should be properly formulated, applied and compacted. They should be bonded to the substrate and have a floated finish with minimum laitance.



# Roof Preparation

## PVC and Alternative Single Ply Membranes

Sufficient adhesion tests must be carried out above existing single ply membranes to determine the exact type of material intended to be overlaid.

The guide for adhesion tests set up within this manual, see page 13, must be undertaken before the work commences. It is the responsibility of the contractor to determine this material and the best method of adhesion. Contact Technical Service Department for clarification on the suitability of compatible single ply membranes.

## Metal / Composite Panels

Inspect and remove / replace structurally unsound sheets. Metal surfaces should be cleaned with White Spirit. Powder coated metal should be tested for suitable adhesion. Improved adhesion may be achieved by abrading and removing the powder coated surface before cleaning with White Spirit. Any corrosion or oxidation should be removed by wire brushing or mechanical abrading. To prevent future re-oxidation of the brushed metal or where residual rust cannot be removed, apply HYDROSTOP AH+ Rust Primer, prior to application of the HYDROSTOP AH+ Metal Primer.

HYDROSTOP AH+ Rust Stabiliser is ready for use after stirring. A single application without excess is sufficient. Use a stiff brush to enhance penetration, although application by roller is acceptable. HYDROSTOP AH+ Rust Stabiliser must be allowed to cure for at least 3 hours before priming.

**Note:** HYDROSTOP AH+ Rust Stabiliser is not a 'stand alone' paint or primer. It must be coated with HYDROSTOP AH+ Metal Primer within 48 hours.

## JOINTS AND GAPS

HYDROSTOP AH+ Self-Adhesive Jointing Tape is a polyester backed self-adhesive tape designed to seal joints and seams on surfaces prior to applying HYDROSTOP AH15+ and HYDROSTOP AH25+ Liquid Waterproofing membranes. The tape is laminated with a non-woven fleece backing. The adhesive surface is protected by a silicone coated release liner. The sealing compound is manufactured from a synthetic rubber based formula with exceptionally high surface adhesion.

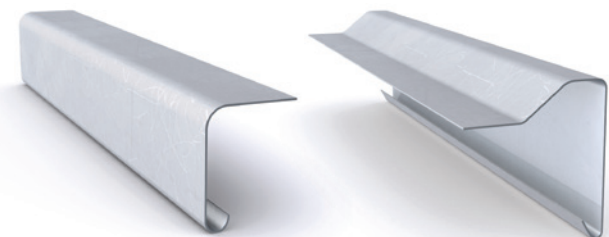
## GENERAL

Before applying roof coatings ensure that:

- Surfaces to be coated are firmly fixed, dry, smooth and free from any contaminants that could inhibit adhesion. Generally when cleaning, scrape and sweep away the bulk of contamination, then clean any remaining contamination by suitable means, e.g., power washing, grit blasting or mechanical abrading.
- Use approved detergents for more effective washing and to remove oil and grease. Organic growth can be treated using an approved fungicidal wash.
- All preliminary work including formation of upstands, kerbs, box gutters, sumps, grooves, chases, expansion joints, etc, and fixing of battens, fillets, anchoring plugs / strips, etc. should be complete and satisfactory.

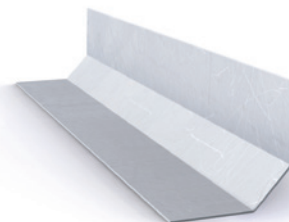
## GRP Trims

In domestic applications, GRP trims are recommended at perimeters, corners, waterchecks, upstands, etc, to simplify detailing. The GRP trims should be securely fixed using appropriate mechanical fasteners before any coating works commence. In commercial applications, prefabricated sections of PVC coated metal may be preferred. GRP profiles commonly used are as follows:



Drip edge

Watercheck edge



Upstand angle

## ADHESION TESTING

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Adhesion tests should always be carried out when the contractor is not certain what the substrate material is. The test should be carried out prior to the start of any project work to determine which primer is needed to achieve the best adhesion to the given substrate. It is highly recommended that the contractor or specifier run tests on particular unknown surfaces to check for adhesion.

The following items will be needed in order to carry out the test:

- Small quantity of HYDROSTOP AH+ Liquid Waterproofing Coating (about 500ml).
- Clean water and cloth or hand brush.
- 150 x 175mm sections of HYDROSTOP AH+ Reinforcing Fabric.
- Small quantity of appropriate HYDROSTOP AH+ Primer (about 200ml).
- Paint brush / mini-roller.
- Permanent marker (to mark the tests).

To carry out a test, the instructions below should be followed taking note of the required times:

- Clean an area of the roof approximately 600 x 600mm using the clean water and / or the hand brush.
- Section the area in two and mark one 'primed' the other 'un-primed'.
- Stir the appropriate HYDROSTOP AH+ Primer and apply a thin even covering as stated in the primer application instructions within this manual. Allow to dry.
- Open and thoroughly stir the HYDROSTOP AH+ Liquid Waterproofing Coating and apply a small even amount of product to both the primed and unprimed areas. Carefully place the 150 x 175mm reinforcing fabric into the base coat of HYDROSTOP AH+ Liquid Waterproofing Coating leaving a small tail of untreated fabric showing. (normally about 25mm strip to one edge). Apply a further coat of HYDROSTOP AH+ Liquid Waterproofing Coating to the saturated fabric and leave to cure.
- Allow the samples to cure for a minimum of 24 hours.
- Once cured pull up the sample patches. Both samples will pull from the surface. Compare which of the samples is the harder to remove and which of these samples leaves a quantity of product on the substrate if any.

It is recommended to photograph both samples as they are pulled back and document the findings for record.

Always follow the instructions given to ensure the best results.

# System Installation

## PRIMING

### HYDROSTOP AH+ WP Primer

Surfaces: PVC, timber and GRP.

**Application:** Ensure the surface to be primed is compatible and has been prepared to the required standard. Check ambient and substrate conditions before application.

Mix the contents of the bucket thoroughly and apply to the roof substrate evenly using a roller or brush.

Minimum coverage rate is 0.1 litre / m<sup>2</sup>. Coverage rate will vary dependent upon substrate.

**Curing:** Typically rainproof after 20 minutes (at 23 °C and 50% RH). Drying time is typically 30 – 60 minutes.

Allow the primer to dry thoroughly before over coating. Maximum over coating time is 8 days. If left longer, the substrate must be re-primed. When initially installed the primer is white. As the primer dries, the white colour disappears leaving a 'sheen / shine' to the cured finish. If this is not visible apply a further coat or coats until it is achieved.

### HYDROSTOP AH+ Blocker Primer

Surfaces: Aged bitumen, weathered asphalt.

**Application:** Ensure the surface to be primed is compatible and has been prepared to the required standard. Check ambient and substrate conditions before application.

Thoroughly stir the contents of the bucket and apply to the substrate using a roller or brush.

Minimum coverage rate is 0.3 litre / m<sup>2</sup>. Coverage rate will vary dependent upon substrate.

**Curing:** Typically rainproof after 45 minutes (at 23 °C and 50% RH). Drying time is typically 1 – 2 hours.

Allow the primer to dry thoroughly before over coating. Maximum over coating time is 8 days. If left longer, the substrate should be re-primed. Primer **MUST** fully coat the substrate and have a continuous even colour throughout, if this is not visible apply further coat or coats until it is achieved.

**Note:** Primer may feel dry to touch, however, should the primer stick to footwear or clothing, allow to cure for a longer period of time.





**HYDROSTOP AH+ Concrete primer**

**Surfaces:** Concrete and cementitious based substrates .

**Application:** Ensure the surface to be primed is compatible and has been prepared to the required standard. Check ambient and substrate conditions before application.

Pour Component B into Component A mixing slowly with a paddle mixer on slow setting. The mixture should be a consistent colour and free from streaks. Mixing time is 2 minutes. Apply within 25 minutes. Once ready, apply the mixed primer onto the prepared substrate with a perlon roller, avoiding unnecessary accumulation of product.

Apply to the roof substrate evenly using a perlon roller or brush.

Minimum coverage rate is 0.5 kg / m<sup>2</sup>. Coverage rate will vary dependent upon substrate.

**Curing:** Depending upon atmospheric conditions, a minimum 16 hours will be required before over coating

Allow the primer to dry thoroughly before over coating. The HYDROSTOP AH+ membrane can be applied above the primed surface when it is tack-free and dry. Maximum over coating time is 8 days. If any delay in over coating is anticipated, HYDROSTOP AH+ Standard Quartz may be broadcast over the wet primer to aid adhesion.

**HYDROSTOP AH+ Metal Primer**

**Surfaces:** Bare ferrous metal or above HYDROSTOP AH+ Rust Stabiliser.

**Application:** HYDROSTOP AH+ Metal Primer is ready for use after stirring. Apply HYDROSTOP AH+ Metal Primer by brush, roller or spray. Allow to dry.

Once dry, coat with the appropriate waterproof coating system. Do not apply HYDROSTOP AH+ Metal Primer over existing asphalt, bituminous coatings or bituminous aluminium coatings.

Minimum coverage rate is 0.2 Litres / m<sup>2</sup>. Coverage rate will vary dependent upon substrate.

**HYDROSTOP AH+ TPO Primer**

**Surfaces:** New and existing TPO single ply membranes.

**Application:** Stir the primer before applying, to ensure uniform material consistency. Once ready, apply the transparent liquid primer onto the prepared substrate in a flowing motion and spread thinly using a brush or roller.

The specified HYDROSTOP AH+ membrane can be applied above the primed surface when the HYDROSTOP AH+ TPO Primer cures to a form dry, transparent film finish. Depending upon atmospheric conditions, curing time can vary from 15 to 60 minutes. Ensure the specified HYDROSTOP AH+ membrane is applied within 48 hours.

Minimum coverage is 0.1 litres / m<sup>2</sup>.

**LIQUID COATING PREPARATION**

Remove the container lid and slowly stir the HYDROSTOP AH+ Liquid Waterproofing Coating with a slow paddle mixer until a uniform colour and consistency is achieved.

Be careful not to over stir the coating as aggressive over stirring can introduce air to the coating. Should this occur, leave the product to settle for approximately 5 minutes before continuing.

Liquid stored at low temperatures can thicken. The consistency of the coating can be improved by bringing the contents of the buckets back up to temperature.

# System Installation

## HYDROSTOP AH15+ MEMBRANE APPLICATION: FIELD AREA

HYDROSTOP AH15+ Liquid Waterproofing is applied 'wet-on-wet' allowing full membrane application in a single process.

The total application rate of HYDROSTOP AH15+ Liquid Waterproofing when used as part of the standard membrane should be a minimum 1.2 litres / m<sup>2</sup>, depending on porosity and texture of substrate.

### Embedment Coat

Apply the first layer of HYDROSTOP AH15+ Liquid Waterproofing above the primed substrate as the base layer using a brush or roller, ensuring that at least 0.4 litres / m<sup>2</sup> coverage rate is achieved.

### Reinforcement

Immediately apply the HYDROSTOP AH15+ Reinforcing Fabric into the base layer and roll the surface with a perlon roller, eliminating potential air bubbles.

Overlaps in the reinforcing fabric should be a minimum 75 mm.

### Top Coat

Apply immediately the HYDROSTOP AH15+ Liquid Waterproofing above the reinforcing fabric as the top layer, ensuring at least a coverage rate of 0.8 litres / m<sup>2</sup> is achieved.

Roll out evenly until complete saturation is achieved. During application ensure the overlap areas (above and below the overlapping fabric) are fully saturated to maintain continuity of the waterproofing system.

**Curing:** The system is shower proof in 30 minutes and can be walked on after 4 – 6 hours. Full curing is typically up to 7 days. Application and drying times will vary with ambient conditions.

### Coverage Rates

Base Layer :	0.4 litres / m <sup>2</sup>
Top Layer:	0.8 litres / m <sup>2</sup>
Total:	1.2 litres / m <sup>2</sup>

These rates are a guide only. Each project substrate will consume systems at different rates and the contractor must satisfy themselves with the substrate and consumption rate.

At the end of the working day, all areas should be completely sealed.

## HYDROSTOP AH25+ MEMBRANE APPLICATION: FIELD AREA

HYDROSTOP AH25+ Liquid Waterproofing is applied 'wet-on-wet' allowing full membrane application in a single process.

The total application rate of HYDROSTOP AH25+ Liquid Waterproofing when used as part of the standard membrane should be a minimum 2.0 litres / m<sup>2</sup>, depending on porosity and texture of substrate.

### Embedment Coat

Apply the first layer of HYDROSTOP AH25+ Liquid Waterproofing above the primed substrate as the base layer using a brush or roller, ensuring that at least 1.3 litres / m<sup>2</sup> coverage rate is achieved.

### Reinforcement

Immediately apply the HYDROSTOP AH25+ Premium Reinforcing Fabric into the base layer and roll the surface with a perlon roller, eliminating potential air bubbles.

Overlaps in the reinforcing fabric should be a minimum 75 mm.

### Top Coat

Apply immediately the HYDROSTOP AH25+ Liquid Waterproofing above the reinforcing fabric as the top layer, ensuring at least a coverage rate of 0.7 litres / m<sup>2</sup> is achieved.

Roll out evenly until complete saturation is achieved. During application ensure the overlap areas (above and below the overlapping fabric) are fully saturated to maintain continuity of the waterproofing system.

**Curing:** The system is shower proof in 30 minutes and can be walked on after 4 – 6 hours. Full curing is typically up to 7 days. Application and drying times will vary with ambient conditions.

### Coverage Rates

Base Layer :	1.3 litres / m <sup>2</sup>
Top Layer:	0.7 litres / m <sup>2</sup>
Total:	2.0 litres / m <sup>2</sup>

These rates are a guide only. Each project substrate will consume systems at different rates and the contractor must satisfy themselves with the substrate and consumption rate.

At the end of the working day, all areas should be completely sealed.

## MEMBRANE APPLICATION: DETAILS AREA

Detail areas should be carried out first to limit foot traffic across the main field area installation.

Prime all surfaces at details to receive the waterproofing membrane.

### Upstands / Angle Changes

All changes in direction at upstands, corners, junctions etc, shall be reinforced locally using HYDROSTOP AH+ Reinforcing Fabric laid into a base layer of the HYDROSTOP AH+ Liquid Waterproofing Coating.

**Action:** Following completion of the priming operation, apply HYDROSTOP AH+ Liquid Waterproofing Coating to the upstand area ensuring a minimum 75 mm vertical and horizontal coverage overlap.

Unroll the HYDROSTOP AH+ Reinforcing Fabric into the coated area ensuring the centre line of the mat is aligned with the angle and lay in position.

Ensure the mat is pressed tightly into the angle.

Press the fabric into position vertically and horizontally, using a brush to ensure creases or wrinkles are removed.

Where upstands are uneven it may be necessary to cut the reinforcing fabric or apply it in small sections.

Immediately apply the top coat of HYDROSTOP AH+ Liquid Waterproofing Coating above the saturated reinforcing fabric at the recommended coverage rate.

Proceed with detailing in the same manner.

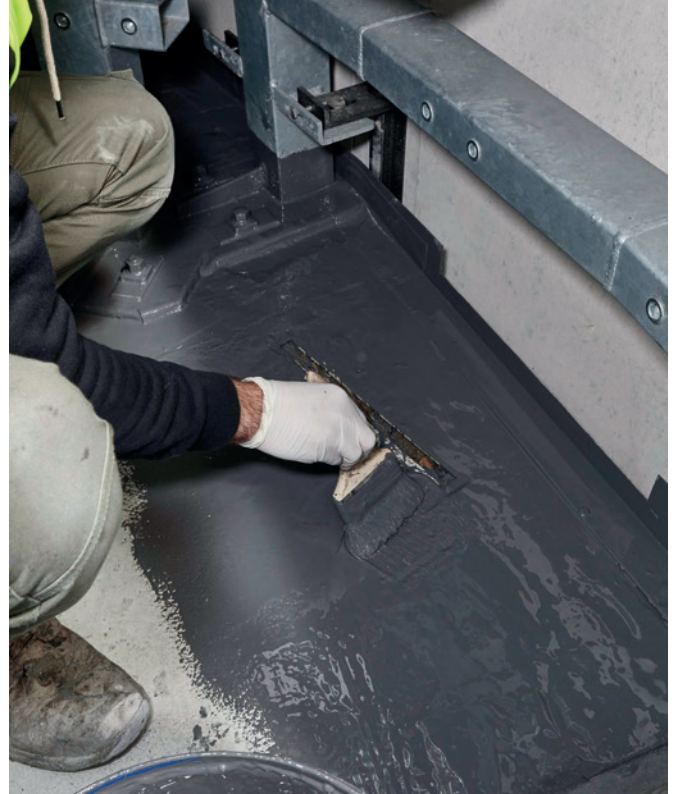
Where terminating vertically, all upstands should be a minimum 150 mm above the finished roof level. It is recommended that the leading edge of the membrane mechanically restrained beneath a termination bar and suitably pointed.

## COVER FLASHINGS

### Existing Flashings

All existing flashings should be inspected and made good as necessary. Where applicable, consideration shall be given to reinstating damaged surfaces behind the cover flashings.

All existing flashings shall be lifted in readiness to receive the appropriate HYDROSTOP AH+ Liquid Waterproofing System. Provide temporary protection where necessary.



Apply the HYDROSTOP AH+ Liquid Waterproofing Coating at the specified coverage rates to the upstand. Ensure the system is completely cured before reinstating the upturned cover flashings. Where necessary, restrain the leading edge of the HYDROSTOP AH+ Membrane with a mechanically fastened termination bar.

### New Flashings

Pre-cut any chases prior to application of the system. Cut new 25 mm deep chases in all masonry upstands. These should provide a minimum 150 mm upstand height above the finished level of the roof.

The new waterproofing is to finish flush with the bottom of the cut chase. If an existing damp proof course exists which is less than 150 mm above the finished roof level, consideration shall be given to the insertion of a new DPC to the required height. Install lead or lead replacement product dressed into the chases provided. Cut, joint and dress the new flashing neatly. Temporarily secure the flashing with suitable clips and then point with compatible sealant. Where necessary, restrain the leading edge of the HYDROSTOP AH+ Membrane with a mechanically fastened termination bar.



# System Installation

## INTERNAL RAINWATER OUTLETS

With existing internal rainwater outlets, remove outlet covers and set aside.

Clear all debris/blockages. Damaged areas should be reinstated as necessary. Apply the HYDROSTOP AH+ Liquid Waterproofing System into the outlet, ensuring drainage will not be inhibited.

### Method of Application

Cut a number of suitable strips of HYDROSTOP AH+ Reinforcing Fabric to cover the outlet in overlapping sections.

Pre-cut a square cover section of HYDROSTOP AH+ Reinforcing Fabric (as illustrated) with the appropriate circular section cut out from the centre of the square.

Completely saturate each individual strip section with HYDROSTOP AH+ Liquid Waterproofing Coating.

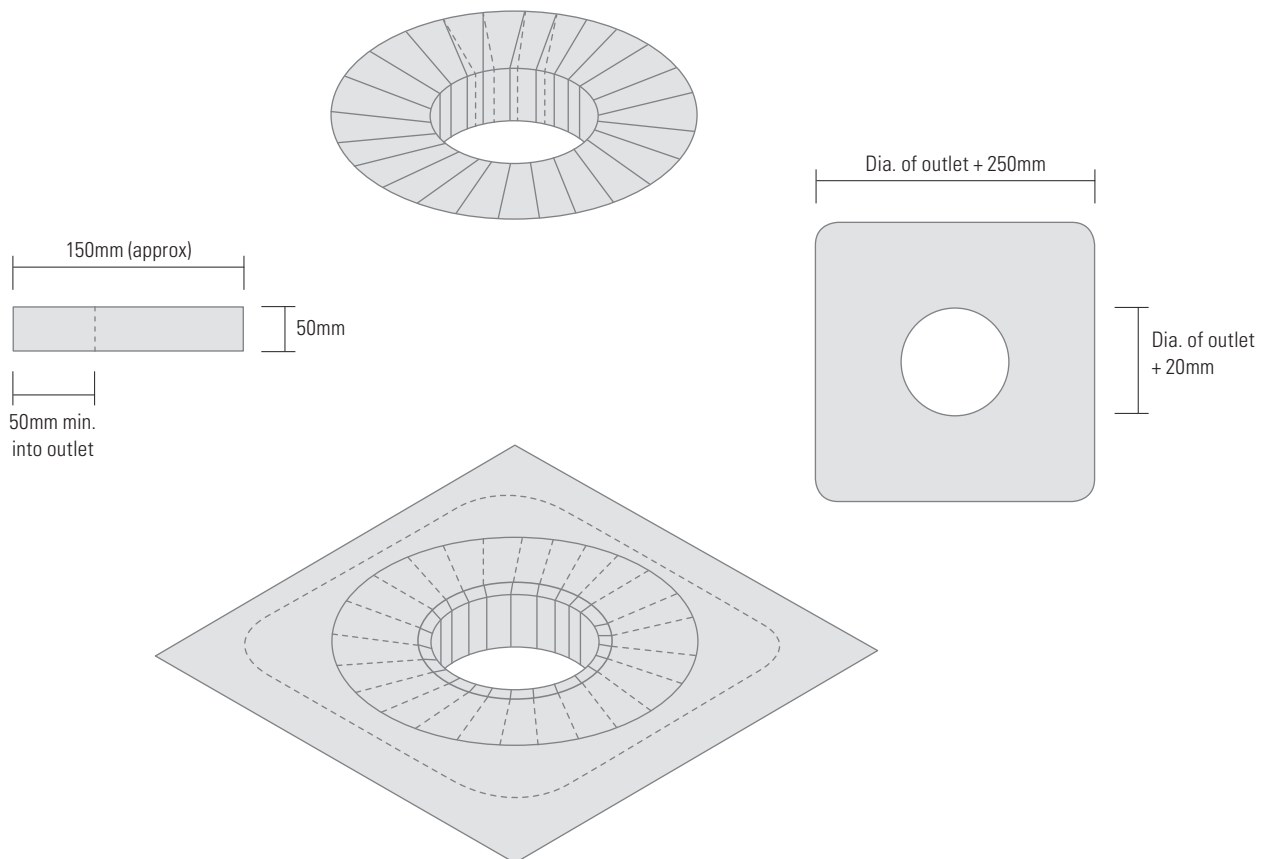
Apply HYDROSTOP AH+ Liquid Waterproofing Coating to the top and inside of the rainwater outlet and begin to apply the sections of reinforcement until the entire circumference is covered.

Brush or roll out any pockets of air and apply extra coating to the reinforcement as necessary.

Wet the prepared square cover section of reinforcing fabric and position above the outlet. Roll or brush to remove air pockets and encourage saturation.

Complete the detail with the application of HYDROSTOP AH+ Liquid Waterproofing Coating to the surface of the reinforcement. Ensure the overlap areas (above and below the overlapping fabric) are fully saturated to maintain continuity of the waterproofing system.

Install or reinstate any leaf grates once the waterproofing coating is completely cured.



**INTERNAL AND EXTERNAL CORNERS**

**External Corners - Method of Application**

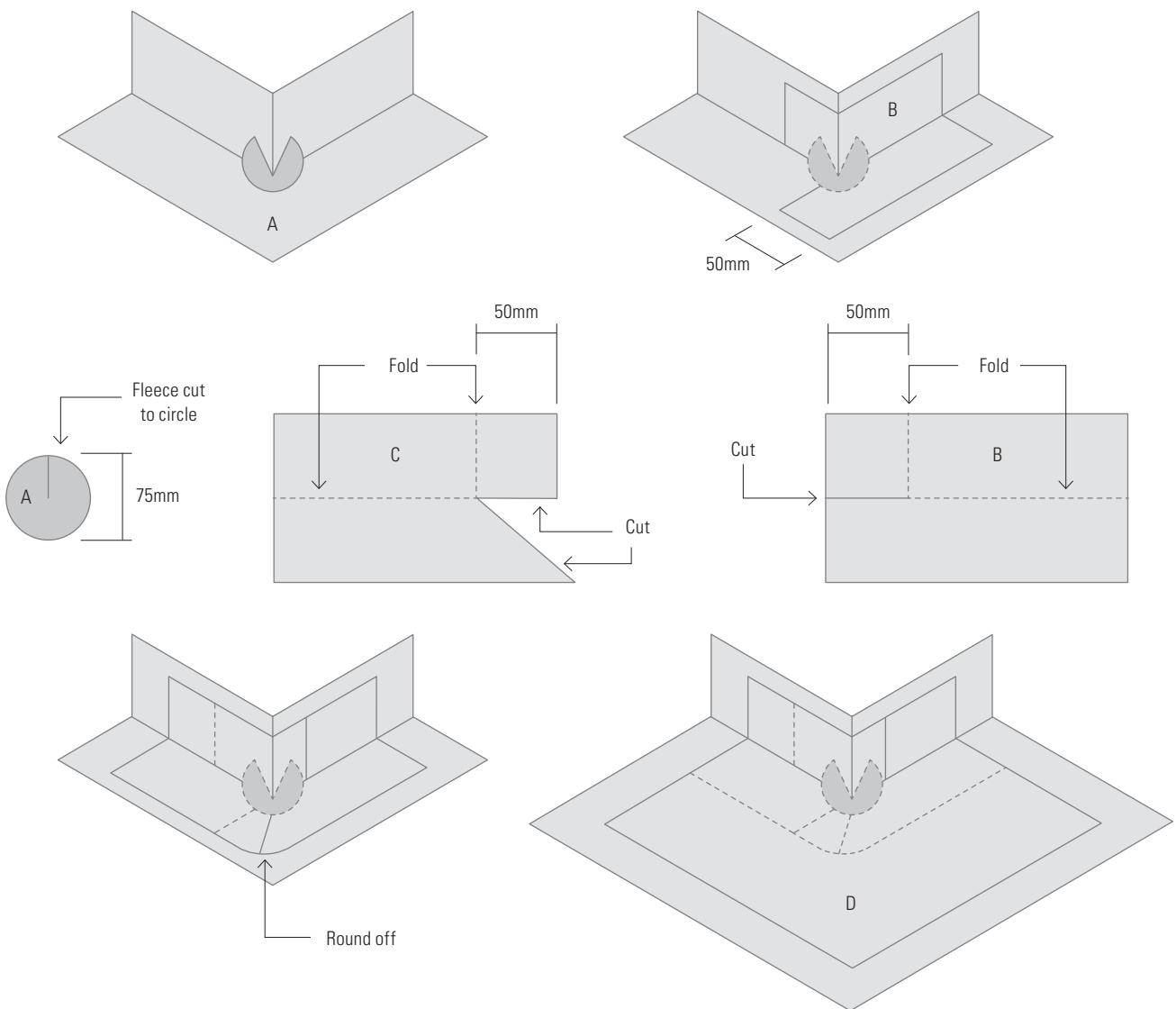
Cut sections of circular reinforcement (A) from reinforcing fabric and position in place using a suitable amount of HYDROSTOP AH+ Liquid Waterproofing Coating.

Cut and fold the first strip of reinforcement (B) and position in HYDROSTOP AH+ Liquid Waterproofing Coating, applied to the upstand and horizontal deck. Ensure a minimum 75mm overlap onto the horizontal is achieved. Brush or roller the reinforcing fabric to remove pockets of air and to encourage full embedment.

Cut and fold a second strip of reinforcement (C), opposite to the

previous section. Apply HYDROSTOP AH+ Liquid Waterproofing Coating to the other side of the detail and position the reinforcement, as illustrated, into the corner. Again, brush or roller the reinforcement until it is completely saturated and any trapped air is removed.

Apply further coating to the deck prior to positioning the main field area reinforcement (D), which is brushed or rolled as previous. Apply the final coating to all areas to ensure the minimum specified thickness / coverage rates are achieved.



# System Installation

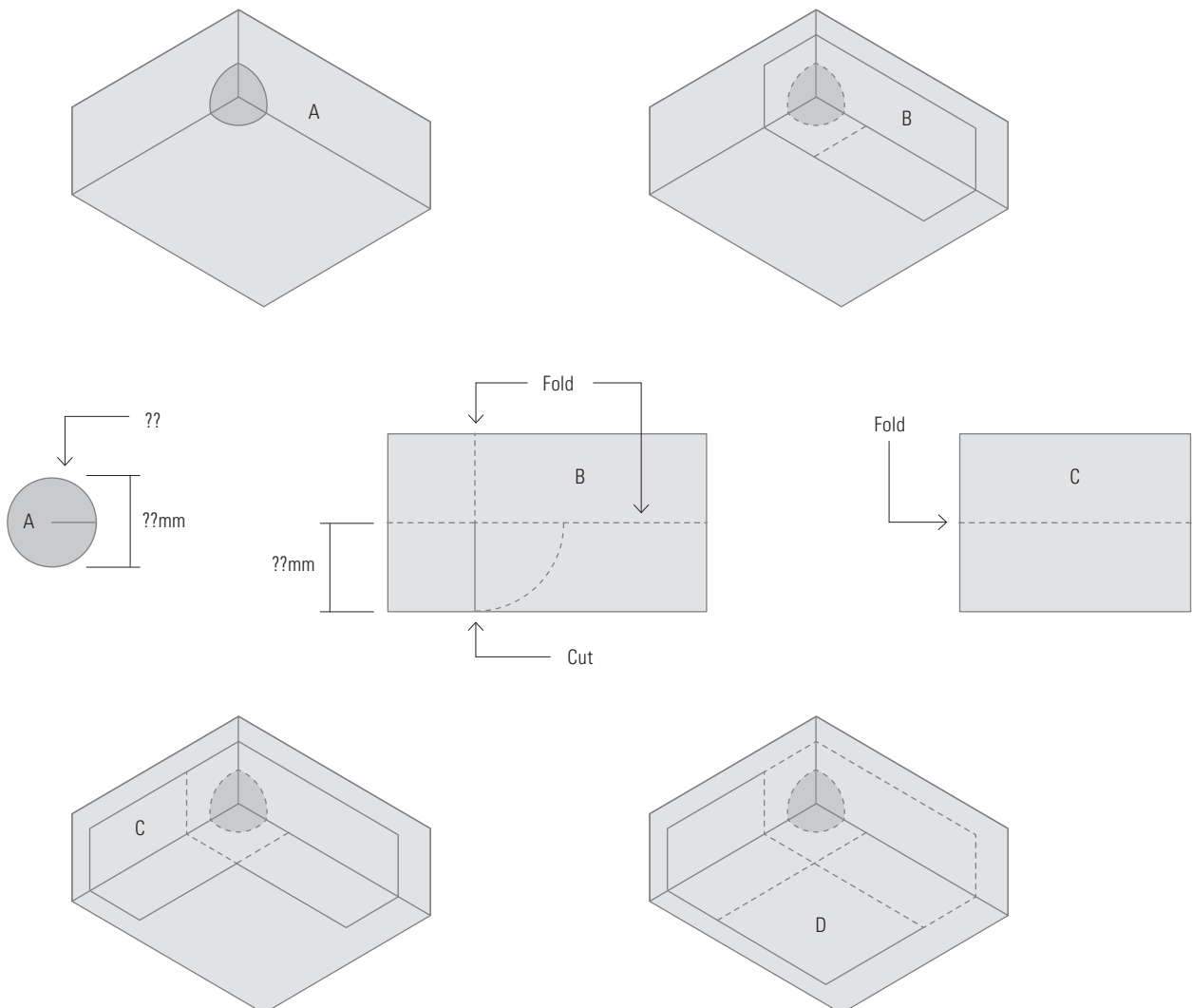
## Internal Corners - Method of Application

Cut sections of circular reinforcement (A) from reinforcing fabric and position in place using a suitable amount of HYDROSTOP AH+ Liquid Waterproofing Coating.

Cut and fold the first strip of reinforcement (B) and position, in HYDROSTOP AH+ Liquid Waterproofing Coating, applied to the upstand and horizontal deck. Ensure a minimum 75mm overlap onto the horizontal is achieved. Brush or roller the reinforcing fabric to remove pockets of air and to encourage full embedment.

Cut and fold a second strip of reinforcement (C), opposite to the previous section. Apply HYDROSTOP AH+ Liquid Waterproofing Coating to the other side of the detail and position the reinforcement, as illustrated, into the corner. Again brush or roller the reinforcement until it is completely saturated and any trapped air is removed.

Apply further coating to the deck prior to positioning the main field area reinforcement (D), which is brushed or rolled as previous. Apply the final coating to all areas to ensure the minimum specified thickness / coverage rates are achieved.



**PIPE PENETRATIONS**

**Method of Application**

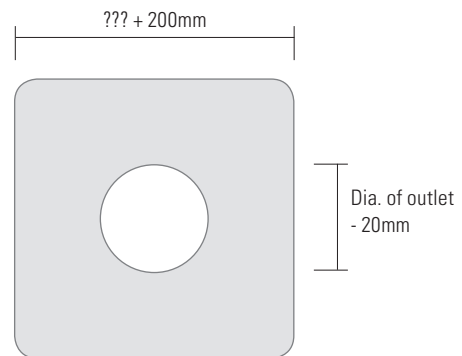
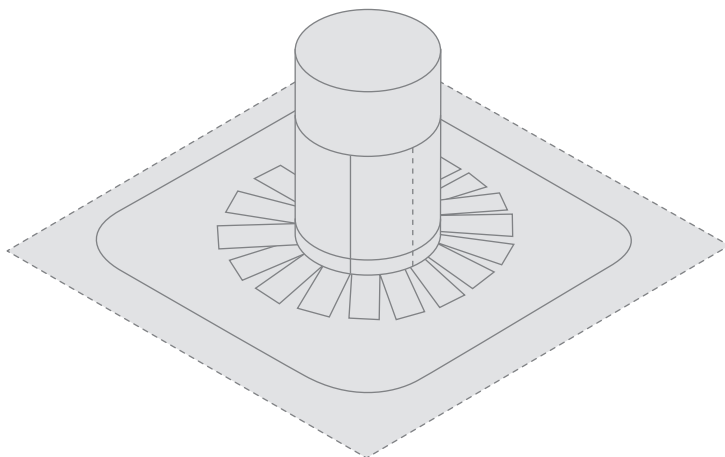
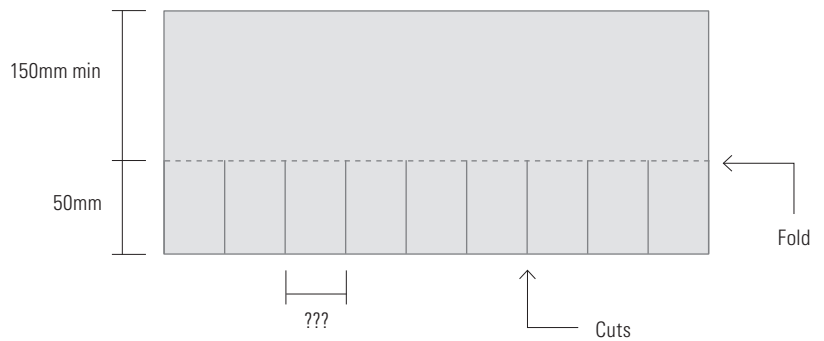
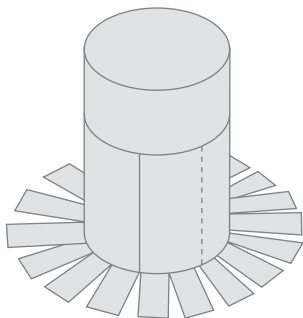
Cut a first piece of reinforcing fabric to size, ensuring a minimum 150mm upstand height and minimum 75 mm overlap to the circumference of the pipe is achieved.

Apply masking tape to the pipe circumference 5 mm above the leading edge of the reinforcement to ensure a neat finish is achieved.

Apply adequate HYDROSTOP AH+ Liquid Waterproofing Coating to the pipe penetration and install the prepared reinforcing fabric with each cut section bent at right angles onto the horizontal surface. Brush or roll to ensure complete saturation is achieved. Ensure adequate coating is applied into the overlap area.

Once complete, apply HYDROSTOP AH+ Liquid Waterproofing Coating to the horizontal area surrounding the pipe penetration, and apply the second section of prepared reinforcing fabric over (or around) the pipe. Where sliding down onto the pipe, stretch inner circumference of the reinforcement to create a small upstand.

Finally, apply further HYDROSTOP AH+ Liquid Waterproofing Coating (top layer) to all areas ensuring minimum coating thickness is achieved.





# System Installation

## ROOFLIGHTS

### Method of Application

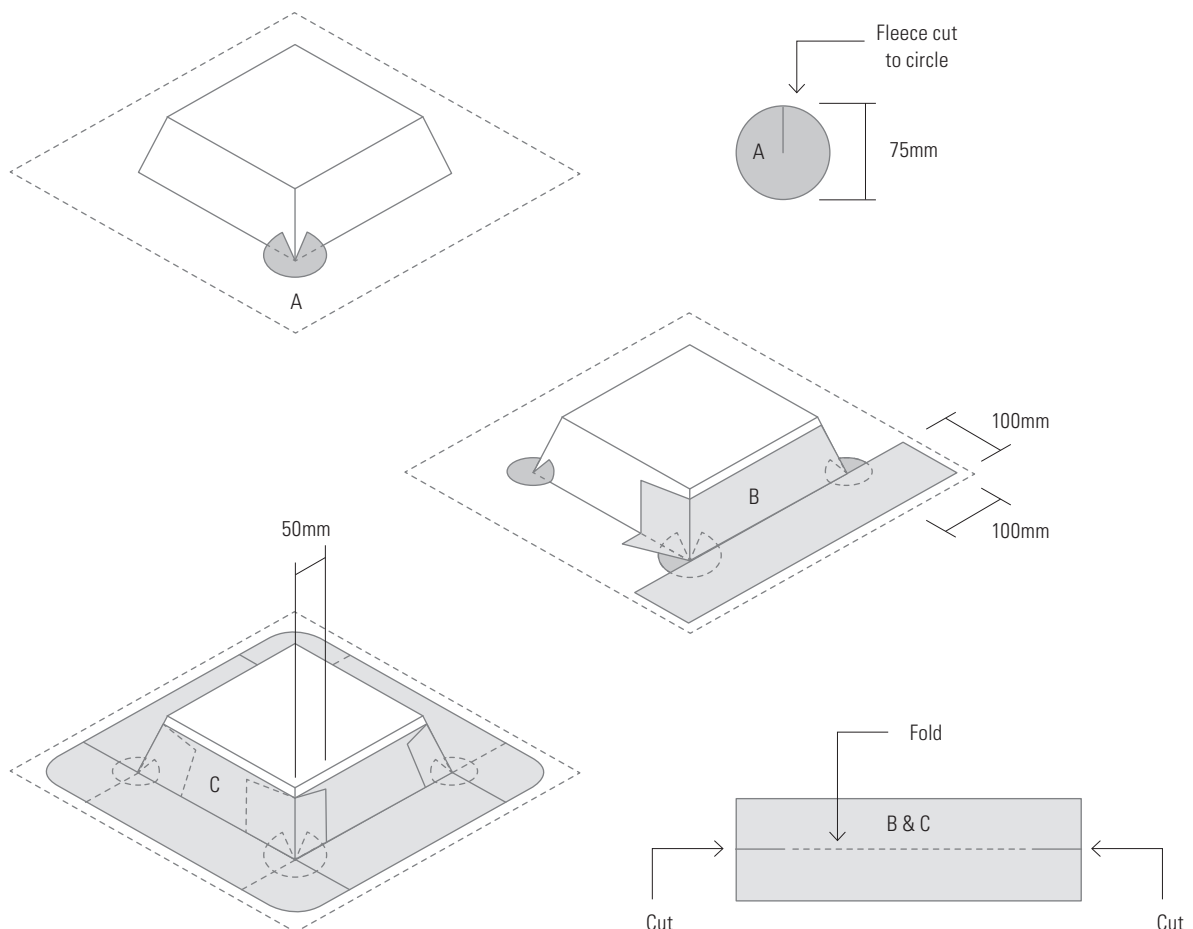
Cut circular sections of reinforcement (A) for the corners and position using HYDROSTOP AH+ Liquid Waterproofing Coating. Repeat the process for all corners.

Cut and fold a strip of reinforcement (B). Coat the rooflight kerb and the adjacent roof area with HYDROSTOP AH+ Liquid Waterproofing Coating and position the reinforcement (B). Brush or roll the reinforcement to remove pockets of air and to encourage saturation. Fold back the upper edge of the reinforcement and re-apply more coating to ensure this critical area is adequately coated.

Repeat the detail on the opposite side of the rooflight.

Cut and fold a strip of reinforcement (C). Coat the rooflight kerb and the adjacent roof area with HYDROSTOP AH+ Liquid Waterproofing Coating and position the reinforcement (B). Brush or roll the reinforcement to remove pockets of air and to encourage saturation. Fold back the upper edge of the reinforcement and re-apply more coating to ensure this critical area is adequately coated.

Finally apply the top layer of HYDROSTOP AH+ Liquid Waterproofing Coating to complete the detail.



## ANTI-SKID WALKWAYS

HYDROSTOP AH+ Anti-Skid Walkways are intended for maintenance foot traffic only.

Creation of an anti-skid walkway requires the application of an initial base layer followed by the application of anti-skid granules and an encapsulation layer.

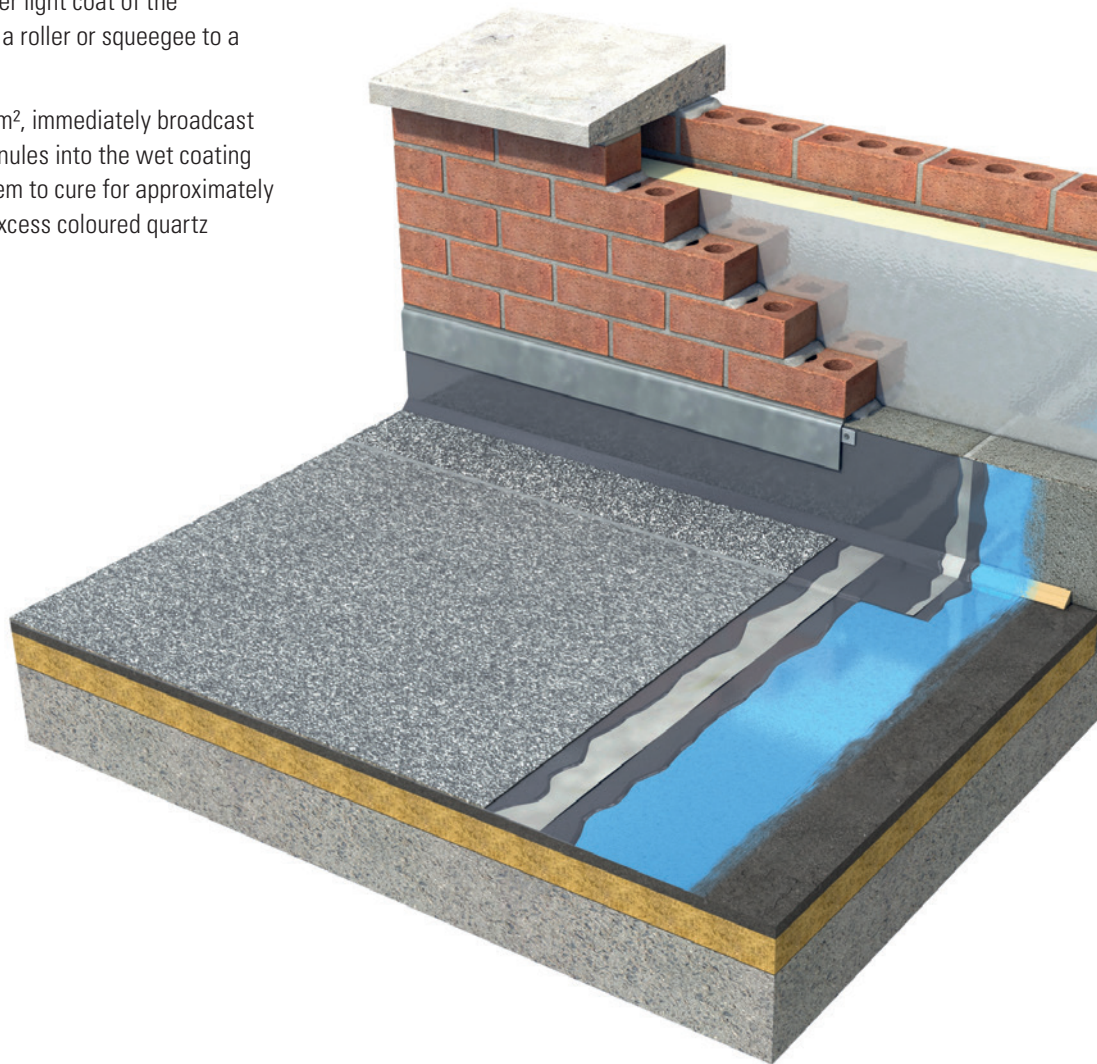
Prior to application check the waterproofing membrane is free of defects and repair as necessary. Remove any surface contamination as required to maximise inter-coat adhesion. Minimum temperature of application is 5 °C and rising and above dew point conditions.

Allow the HYDROSTOP AH+ Liquid Waterproof membrane to fully cure. Once cured, apply one further light coat of the HYDROSTOP AH+ Liquid Coating using a roller or squeegee to a maximum coverage of 0.2 L/m<sup>2</sup>.

Working in sections no greater than 1 m<sup>2</sup>, immediately broadcast HYDROSTOP AH+ Standard Quartz granules into the wet coating at a rate of 3 - 5 kg/m<sup>2</sup>. Allow the system to cure for approximately 2-3 hours before sweeping away the excess coloured quartz crystals.

Apply a minimum of two coats of HYDROSTOP AH+ Transparent over the walkway areas at a finished rate of 0.5 L/m<sup>2</sup> and allow to cure.

Walk-on time for the HYDROSTOP AH+ Anti-Skid System is approximately 24 hours depending on coverage rate used and ambient conditions. Allow to fully cure before trafficking.



# Maintenance

The following care and maintenance requirements are for HYDROSTOP AH+ Liquid Waterproofing Systems. SIG Design & Technology recommend that maintenance staff and / or a maintenance contractor inspect the roof periodically or at least twice a year (as per the recommendations given in Annex B; BS 6229: 2018) ideally before and after the winter period. This ensures that dirt and debris is removed before it can cause damage and that signs of any failure can be reported and remedial action taken at an early stage. Maintenance items, including flashings and sealants, are the responsibility of the building owner and are not included within the scope any SIG Design & Technology roofing system warranty.

The inspection should concentrate on high-risk areas such as roof hatches, drains and around all rooftop equipment as well as general inspection of the entire roof. The inspector should be looking for membrane damage (cuts and tears), oil or refrigerant leaks, chemical spills from any roof plant machinery, or water infiltration into the roofing system.

Compliance with the above listed care and maintenance requirements will aid in assuring a durable, watertight membrane roofing system.

Failure to adequately maintain the roof may invalidate any SIG Design & Technology warranty.

ITEM	ACTION
Internally	Check internal surfaces visually for signs of moisture, leakage or condensation (e.g. damp patches, staining, etc).
General	Remove any unnecessary debris from the roof area particularly objects, which could cause damage to the membrane. Do not use the roof as a working platform for adjoining buildings or further works. If access is required adequate protection must be provided so as not to damage the membrane.
Drainage	Keep the roof surface clean at drain areas to avoid clogging. Clear leaves, silt or other debris, which may cause blockage of outlets or otherwise impede drainage. Check that ponding water is drained from the roof within 48 hours following rain.
Petroleum Products	Keep all petroleum products (solvents, greases, paints, oils or any liquids containing petroleum products) off the membrane to avoid degradation.
Animal Fats	Do not exhaust kitchen wastes (vegetable oils) or other animal fats directly onto the roof surface. They could degrade the membrane.
Chemicals	Contact SIG Design & Technology if any chemicals come in contact with the roofing membrane. Some chemicals could degrade the membrane or cause swelling.
Foot Traffic	Walkways must be provided if regular traffic is required or if rooftop equipment has a regular thirty (30) day or less maintenance schedule. Exercise caution when not walking on walkways, especially on white membranes since ice or frost build-up may not be visible. Membranes are slippery when wet.
Roof Alterations	Check with SIG Design & Technology that the proposed alteration will not invalidate the warranty. Work should be carried out by the roofing contractor who carried out the original installation to limit split liability. Do not allow other trades to fix through the waterproofing membrane without proper advice. This is especially important when having a/c units, heating and ventilation equipment or telephone cables fitted.
Cleaning	Pressure washers can be used to clean the HYDROSTOP AH+ Liquid Applied Waterproofing Membrane (including anti-skid surface finishes) where the following limits are observed: <ul style="list-style-type: none"> <li>• Pressure to be no greater than 40 bar / 580 psi.</li> <li>• Minimum 20 cm distance between pressure washer nozzle and surface.</li> </ul>
Metal Work	Keep roof maintenance items, such as counterflashing, metal curbs and metal ducts sealed watertight at all times.
Leaks	Try to determine if it is a roof membrane leak or a wall, curb, skylight, metal ductwork or plumbing leak. Deterioration or failure of building components that causes a leak is not covered by the warranty. A water leak may be indicated by soft or warped insulation or the presence of water under the membrane. Physical damage to the membrane or flashing is not covered by the warranty. Please notify SIG Design & Technology if the leak is determined to be membrane related. The building owner is liable to the cost of investigation and repair if the problem is found to be outside the scope of the waterproofing warranty.
Temporary Repairs	Damaged areas of membrane should be repaired as follows. Remove any excess debris, including the cutting away of any loose or damaged membrane. Thoroughly clean the affected area. Once prepared, apply a base layer of HYDROSTOP AH+ Coating at the required coverage rate and install a pre-cut section of HYDROSTOP AH+ Reinforcing Fabric. Complete the repair with the application of HYDROSTOP AH+ Coating as the top layer.
Rooftop Maintenance	When it is necessary for workers to be on the roof to service rooftop equipment, e.g. HVAC units, antennas, etc, workers should be cautioned to use walkways where present and to exercise care with their tools and equipment to avoid puncturing the roofing membrane.









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