PRO-BW® PLUS

BALCONY

ASPHALT / CONCRETE / FELT MEMBRANE



PROTEUS SYSTEM AND MEMBRANE RANGE

PROTEUS PRO-FELT® HIGH PERFORMANCE MEMBRANES

PROTEUS PRO-COLD® COLD INSTALLED, SEAMLESS WATERPROOFING

PROTEUS PRO-THERM PIR WARM ROOF INSULATION

COLD MELT® BURIED/GREEN WATERPROOFING

PROTEUS HOT MELT® INVERTED/GREEN/ PODIUM DECK SYSTEMS

PROTEUS PRO-THERM XPS INVERTED ROOF INSULATION

PRO-BW® PLUS FAST CURE BALCONY WATERPROOFING

NFRC LEADING ROOFING EXCELLENCE

LRWA Liquid Roofing and Waterproofing Association

CONFEDERATION OF ROOFING CONTRACTORS

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE 18/5574

S_PBWP_Balcony_Asphalt Concrete Felt_271124

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Project Number:	2225056
Project Name:	Arkwright House Parsonage Gardens Manchester M3 2HP
Document Reference:	S_ 2225056 _Arkwright House_Watts_Pro BW Plus
Guarantee Length:	20 years
Prepared for:	**Watts** St James Tower 7 Charlotte St Manchester M1 4DZ **Mark Jackson** [redacted] April 2025
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Internal Use Only:	800

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DESCRIPTION

PRO-BW® PLUS is a high performance, cold installed, hard wearing, rapid cure membrane for balconies and communal walkways. It is designed to provide a durable, monolithic waterproofing membrane with skid-inhibiting properties. To minimise disruption to residents, particularly on the communal walkways which may also form the Fire Escape routes, the waterproofing is a fully reinforced, fast cure membrane, allowing a return to service within **2 hours** from installation.

This Installation Specification guides the user through the correct installation method of the **PROTEUS WATERPROOFING** cold installed, high-performance **PRO-BW® PLUS** onto existing asphalt, concrete and felt membrane surfaces.

The Contractor is to carry out their own investigations, core sampling, and confirming detailing to confirm this Specification is suitable. Proteus accept no liability for any defects arising where the existing roof condition is not fully checked and confirmed by the contractor prior to commencement of works.

Refer to the Product Schedule and Main Specification for full product details and usage, coverage rates and non-combustible insulation placement.

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SPECIFICATION OUTLINE / PRODUCT SCHEDULE	
• Prepare, repair and clean surfaces. • Prime surfaces as required. • Apply **PRO-BW® PLUS RESIN** embedment coat. • Embed **PRO-FORCE 450** reinforcement into the wet embedment coat. Allow to cure. • Apply **PRO-BW® PLUS** topcoat to detailing and non-trafficked areas. Allow to cure. • Apply **PRO-BW® PLUS** aggregate coat to trafficked areas. • Broadcast **PRO-AGGREGATE EM** into the wet aggregate coat. Allow to cure. • Apply **PRO-BW SEALER** to trafficked areas. Allow to cure.	
PRIMERS	
Cold Melt® DPM Primer	Primer for wet concrete, screeds
Pro-Prime® SA	Primer for Proteus self-adhesive membranes
Pro-BW® Primer Accelerator	Accelerator for low temperatures only
Pro-BW® Catalyst	Catalyst for Pro-BW® Primer
Pro-BW® Primer	Primer for concrete/porous surfaces
Pro-Metal Primer	Spot primer for metal surfaces
Pro-Epoxy Primer	Metal primer
WATERPROOFING	
Pro-BW® Plus Resin Accelerator	Accelerator for low temperatures only
Pro-BW® Catalyst	Catalyst for Pro-BW® Plus Resin
Pro-BW® Plus Resin	Embedment coat
Pro-Force 450	Reinforcement matting
Pro-BW® Plus Resin	Top coat
Pro-BW® Plus Sealer	Aggregate sealer coat

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ANCILLARIES	
Products	**Description**
Pro-Aggregate EM 0.5mm-1.0mm	Aggregate for skid-inhibiting finish
Pro-Vapour Control/Carrier Membrane SA	Self-adhesive membrane
Proteus Edge / Drip Trims	Edge / Drip Trims
Proteus Termination Bars Black	Termination Bars
Proteus Sealant	Sealant

For ancillaries, roof-lights and roof-hatches contact **PROTEUS WATERPROOFING** on:
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E: sales@proteuswaterproofing.co.uk

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CODES OF PRACTICE / BUILDING REGULATIONS / CONDENSATION RISK

Building Regulations:

Building Regulations Part L Volume 2 – Buildings other than dwellings - 2021 including 2023 amendments: When re-roofing, the existing roof construction must achieve the threshold U-value of **0.35 W/m²K** or better. If the threshold value is not achieved, then the roof must be thermally upgraded to meet the current required maximum U-value of **0.18W/m²K**.

Unless otherwise stated, any thermal calculations for this Specification assume no existing insulation is present between the ceiling and the roof deck. Investigations must be carried out by the Contractor to confirm if this is the case.

If insulation is present between the ceiling and the roof deck it may be necessary to remove this to prevent damage from interstitial condensation and conform with **BS 6229:2018**. Contact Proteus Waterproofing for revised thermal calculations and condensation risk analysis.

Building regulations Part B:
The completed works should conform to the current National Building Regulations including Part B.

For these regulations to be correctly met, further information or clarifications may be required to establish the appropriate waterproofing and insulation choices for this Specification; including whole system build-ups generally, and particularly on specified attachments in relevant buildings, and above internal party walls above combustible decks and should include the provision of non-combustible insulation where necessary.

It is important to note that due to the number of variables, it is impracticable to test all roof build-ups against Broof(t4). Relying solely on advice by proxy may not provide an accurate assessment of the roof's fire performance which could potentially lead to safety issues in the event of a fire. It is therefore the responsibility of the client to instruct the project building control officer, or an independent fire engineer to review the proposed Proteus Waterproofing Specification, request any further information that may be required, and confirm suitability and satisfaction of the relevant national building regulations, prior to the commencement of works.
The Contractor is to check and ensure that non-combustible materials are used wherever regulations require, including but not limited to all types of boarding, insulation, and other general building materials.

This Specification does not automatically meet Part B until the client has supplied all the information about the overall proposed construction to, and confirmed approval from, the project Building Control Officer, prior to the commencement of works.

If the client decides to proceed with the proposed specification then unless advised otherwise in advance, Proteus Waterproofing will take this as confirmation that Building Control approval has been confirmed.

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For these regulations to be correctly met, further information may be required to establish the appropriate waterproofing and insulation choice for this Specification; particularly above internal party walls and the provision of non-combustible insulation where necessary.

Compartment Walls: The areas being considered for insulation and waterproofing continue over compartment walls on a building type falling within a relevant residential purpose group listed in Approved Document B. For this type of construction and building type Proteus recommends that combustible insulation is removed from the build-up over compartment walls and a minimum of 1,500 mm on either side, and replaced with a suitable non-combustible alternative. Any additional insulation added to the construction build-up must also follow the same principle. Client must check that the construction between the compartment wall and the roof deck has a fully bedded mortar detail across the full width of the compartment walls, and also has fire protection to the roof support members 1,500 mm to either side of the same.

Where the locations of compartment walls cannot be established, it is our recommendation that to comply with ADB that a full replacement of non-combustible insulation is completed throughout.

In both cases it is the responsibility of the client to instruct a structural engineer to check the additional weight loading on the roof that will be present following the introduction of non-combustible insulation. Due to site constraints, Proteus have been instructed by the client's representative to produce a specification without these recommendations.

Therefore, if works proceed based on this Specification, then it is the responsibility of the client to ensure they have obtained approval for completed works that do not include for the additional mitigations described above in relation to fire compartmentation from LABC Building Control or Approved Inspectors. Proteus take no responsibility for these elements of the design.

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Ventilating Cold Roofs: BS 6229 Cold Roofs for Habitable/Heated Spaces
BS 6229:2018 states that a continuous cross-ventilated opening should be present providing the equivalent of **25 mm** width, and that any individual vents should not be more than **5 metres** apart.
Mushroom vents do not provide effective venting and will not prevent interstitial condensation. The appropriate air vapour controls and insulation are to be installed under the roof deck with the necessary ventilation to avoid interstitial condensation.
Failure to achieve the above recommendations may result in condensation issues and a reduction in the lifespan of the roof, not covered by the Proteus guarantee.

The areas being considered for a waterproofing overlay are above a heated space.
Currently there is either no existing insulation or an inadequate amount of insulation to sufficiently remove the risk of interstitial condensation at any point in the build-up as detailed in the relevant Codes of Practice **BS 6229**, or to fully comply with the general requirements set out in the National **Building Regulations Part L**.

Due to site constraints discussed the Contractor will not be instructed to install an insulation solution to comply with **BS 6229** and you have confirmed your agreement for the specification to be designed on this basis. Failure to introduce the required insulation to resolve and prevent current or future condensation issues will mean that any latent defects will remain and may result in a reduction in the lifespan and/or cause future Defects in the original substrate or the new waterproofing membrane. Proteus therefore cannot guarantee that these issues will not arise in the future.

For thermal calculations (**Part L**) non-combustible insulation compliance (**Part B**) and CTF tapered insulation schemes contact **PROTEUS WATERPROOFING** on:
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PRELIMINARIES / HEALTH & SAFETY / TORCH ON GUIDELINES:

This document outlines the procedure for the application of the **PROTEUS WATERPROOFING** system and does not form the complete Scope of Works relating to the complete project.
For detailed instruction refer to the clients own Scope of Works.

For this project, it is the Clients responsibility to manage the project and contract and ensure suitable arrangements are in place to conform to the **Construction (Design and Management) Regulations 2015 Regulation 4**.
PROTEUS WATERPROOFING will assist with the design of the flat roof / balcony system though not undertake the role of Principal Contractor. Where the project requires more than one Contractor it is the Client responsibility to appoint a Principal Designer and a Principal Contractor to conform to the **Construction (Design and Management) Regulations 2015 Regulation 5**.

Structure and Loadings:
PROTEUS WATERPROOFING does not advise on structural loadings and cannot confirm capacity or limitations in regard to the suitability of the structure to take the weight of the proposed system, or any finishes such as decking, paving, gravel, living roofs, solar panels, plant and equipment or any other items situated on the roof, balcony, or terrace. It is the responsibility of the client to take separate advice from an independent structural engineer to ensure that the structure is suitable for the final finished weight and overall loadings placed onto the roof, balcony, or terrace.

Additional Loadings:
This roof, balcony or terrace specification forms a change from the existing roof build-up and has been designed to conform with **BS 6229** as agreed with the client. It is the responsibility of the client to take separate advice from an independent structural engineer to ensure that the structure is suitable for the final finished weight and overall loadings placed onto the roof, balcony, or terrace.

Before tendering, the contractor should examine the drawings and specification documents, visit the site, and ascertain all local conditions and restrictions, accessibility, the full extent and nature of the work, the supply and conditions affecting labour and the execution of the contract generally. No claims arising from failure to do so will be considered.

The contractor is to take their own roof core samples to satisfy themselves regarding the existing roof build-up and to ascertain the extent of the work required in removing the existing roof covering. No claims arising from failure to do so will be considered.

All roofing materials are to be supplied by **PROTEUS WATERPROOFING** and to be fit for purpose and of the type and quality described herein. Any sub-standard materials will be rejected. No alternatives are to be used without written consent by **PROTEUS WATERPROOFING**.

All products must be stored according to the Manufacturer instructions, ideally inside a building or site container. However, if external storage is unavoidable, store clear of the ground or supporting surface and

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protected at all times from moisture, frost, and mechanical damage. Rolls of waterproofing to be stored on end on a flat firm surface. Cover with a waterproof sheet allowing venting to avoid condensation build up.

The roof waterproofing work should adhere to **Building Regulations current document, Part L**. It is recommended confirmation of individual project requirements for thermal performance of the roof is sought by the client or the client's representatives from the local Building Control office before work commencement. When installing multi-layer waterproofing membranes without insulation, **PROTEUS WATERPROOFING** understands that the consideration to thermal performance compliance under **Building Regulations Part L** is being dealt with separately by the client, and as requested will not form part of our recommendations.

Please contact **PROTEUS WATERPROOFING** to ascertain the correct **U Value** to be achieved.

It is the responsibility of the roofing contractor to liaise with the Main Contractor or Client concerning the possible temporary disruption or suspension of existing services to the building during the works.

Specified Exceptions:
Proteus specifically exclude the following, and cannot be held responsible or liable for any defects arising directly or indirectly from; Structural failures caused by additional loadings onto the roof, subsidence, heave or landslip to the building, fire, explosion, lightning, earthquake, storm, flood, bursting and overflowing of water tanks, apparatus or pipes, impact by aircraft and articles dropped from them, impact by vehicles, riot, civil commotion, malicious or deliberate damage, any other accidental damage, design of products other than Proteus Products, other third party installations, third party expansion joints, other third party details and/or materials including but not limited to EPDM door/window seals, failure of mastic seals and/or joints, failure of third-party flashing details, construction details or installation works not meeting relevant Codes of Practice including but not limited to **BS 8217:2005** & **BS 6229:2018**, unauthorised deviation from the latest written Proteus specification, inherent or latent defects of the building or existing roofing system including the roof deck or the substrate, inadequate drainage falls including but not limited to product design falls and/or deflections and back falls, substrate movement, new or existing interstitial condensation, discharge or spillage of any third-party substance (chemical or otherwise), water entry from adjacent structures or anywhere else in the building other than from the finished system, lack of maintenance and abnormal use.

The contractor shall employ none but fully qualified, competent tradesmen and the whole of the work shall be carried out and completed in accordance with industry "Best Practice".

The contractor shall carry out the works without undue inconvenience and nuisance and without danger to occupants and users.

Following completion of the installed, specified roofing works, provision should be given to the protection of all finished surfaces from damage by subsequent building operations. Additional work will be required to return the membrane to a warrantable condition if the membrane is damaged due to inadequate protection.

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Any elements that may affect the future performance of the specified system shall be reported to the client and **PROTEUS WATERPROOFING** at the earliest possible opportunity. It is the responsibility of the contractor to acquaint themselves with all relevant codes of practice referred to within the specification. **PROTEUS WATERPROOFING** takes no responsibility for misinterpretation or lack of knowledge for third parties.
The works shall be carried out in accordance with the requirements of **BS 6229** Code of Practice for flat roofs with continuously supported coverings and **BS 8217** Reinforced bitumen membranes for roofing Code of Practice.
The roofing membrane, insulation, and any ancillary items, (roof lights, trim, outlets) included in this specification shall be obtained from:

PROTEUS WATERPROOFING
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Brook Road Industrial Estate
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Tel: 01268 777871

The works shall be carried out in accordance with all current relevant legislation, and recommendations from the **Health & Safety Executive (HSE)** including **HSG33 Health & Safety** in roof work.

The Contractor is to comply with **Control of Substances Hazardous to Health Regulations 1988**. All relevant information relating to hazard assessment to be submitted with tender.
The Contractor is to allow for all necessary temporary protection to leave the site weather tight at all times.

The Contractor is to allow for the removal from the site of all debris and surplus materials, which have arisen from the execution of the works.

The Contractor is to allow for protection of the works from traffic and damage during the construction period.

Where possible any newly installed roof decking should be protected and covered from the weather to ensure drying out is not necessary. However, in the event of a roof becoming wet, it is important to ensure drying out is done safely.

There are several methods of drying out a roof that can be employed by the roofing contractor, but the most common method used due to speed and effectiveness is still by use of a gas torch. When a gas torch is to be used for drying, a thorough roof inspection of all fire related risks is essential. Where risks are identified, the operative must adopt a torch free area in line with the contractor's public liability insurance, however, it is recommended that this should be no less than **900mm**.

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Methods of drying within a restricted area will vary from wiping with dry rags, and mops, then allowing natural weather conditions to finish the drying, or the use of hot air guns.

Please note that it is your responsibility as the contractor to ensure that all the recommendations detailed in this specification, and any changes or additions subsequently made, with or without Proteus' knowledge, particularly in respect of insulation design, are approved by a building control fire safety officer prior to the commencement of any works on site.

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TORCH ON GUIDELINES

It is the responsibility of the contactor to perform a thorough roof inspection of all fire-related risks and adopt a torch free area no less than **900mm** from all 'at risk' areas. At risk areas are to include, but are not limited to, the following:

- Timber upstands
- Hanging tiles
- Thatched roof
- Roof-light Kerbs and upstands
- Cladding
- Lantern roof-lights
- Confined space
- Window cill

Thought should be given to junctions to existing waterproofing with flammable insulation or substrate materials. These areas and existing weathering components need to be assessed and made Safe2Torch before proceeding with hot works, alternatively a torch-free solution should be considered. Attention needs to be given to concealed flammable materials where there is a chance the flame could travel and ignite particles in inaccessible areas, these include:

- Louvered vents, air ducts, intakes, and outtakes
- Timber, DPC or sarking membranes beneath fixed metal capping system's
- Existing kitchen extraction plant coated in oils or fats
- Flammable wrapping to trunking/ducting
- Existing metal or plastic coping/capping's
- Existing valuable plastic curbs, domes, pipes

When working near recently applied bituminous primer or other solvent-based coatings, torching needs to be avoided.

Other pre-work checks should include an assessment of the substrate - under no circumstances should a torch be applied direct to a timber roof deck or timber upstands, including timber fillets, even if the substrate has been treated with bituminous primer. A self-adhesive base-layer or a mechanically fastened layer should be used to protect the timber substrate coming into contact with the naked flame. A gas torch should never be used directly on a timber roof deck.

Expansion joints which are filled with combustible fillers, such as foam or fiberboard, should not come into contact with high heat or naked flame.

If a membrane roof is adjoining a pitched roof with details to be completed under abutments to roof tiles and slates, the slates or tiles should be removed, and a compatible torch-free product should be selected.

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A compatible torch-free product should be selected for any abutments with open cavities or open perpends.

Naked flames should be avoided where there is fixed timber, plastic fascia or soffits.

If further information is required, the full Safe2Torch guidelines can be found at https://www.nfrc.co.uk/docs/default-source/campaign/safe2torch-guidance.pdf?sfvrsn=2

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PRE-WORKS

Installation Specification Validity:
This specification is valid strictly for a period of **6 months only**, after which time it is recommended a technical review is carried out by **PROTEUS WATERPROOFING** to confirm continuity.
Should a site inspection by **PROTEUS WATERPROOFING** not have been carried out, this is to be arranged prior any works commencement to confirm the Specification. The site inspection may require changes and amendments to the proposed Specification. Any measurements stated in this document are approximate and not to be used for tendering. The tender document or Client is to be consulted to confirm the areas of work to be quoted.
The Contractor is to carry out their own investigations, core sampling, and confirming detailing to confirm this Specification is suitable.

Reinforced Autoclaved Aerated Concrete (RAAC) Planks:
In line with the Standing Committee on Structural Safety (SCOSS) alert document (May 2019), all building owners should ascertain if the roof deck to their building(s) has been constructed with **Reinforced Autoclaved Aerated Concrete (RAAC) Planks**. RAAC planks were used to construct walls, floors, and roof decks. RAAC roof decks are now known to have collapsed suddenly and causes of failure range from ageing, high span to depth rations, corrosion of the tension steels within the plank to roof loadings above the weight bearing properties of the RAAC planks, failure of the roof waterproofing membrane as well as other factors.
Prior to any roof works the building owners should seek expert advice from Chartered Building Surveyors to confirm if RAAC planks are present and from Chartered Structural Engineers to consider the appropriate course of action and Risk Assessments.
RAAC planks were typically used in the construction of buildings between the 1960s-1980s, with an estimated useful life of **30 years**.

For further information please refer to document **SCOSS Alert – Failure of RAAC Planks/May 2019.**

Structure and Loadings:
PROTEUS WATERPROOFING does not advise on structural loadings and cannot confirm capacity or limitations in regard to the suitability of the structure to take the weight of the proposed system, or any finishes such as decking, paving, gravel, living roofs, solar panels, plant and equipment or any other items situated on the roof, balcony, or terrace. It is the responsibility of the client to take separate advice from an independent structural engineer to ensure that the structure is suitable for the final finished weight and overall loadings placed onto the roof, balcony, or terrace.

Additional Loadings:
This roof, balcony or terrace specification forms a change from the existing roof build-up and has been designed to conform with **BS 6229 / National Building Regulations** as agreed with the client. It is the responsibility of the client to take separate advice from an independent structural engineer to ensure that the structure is suitable for the final finished weight and overall loadings placed onto the roof, balcony, or terrace.

Core Samples:
Core samples findings taken at the roof survey give an indication of the roof build-up and condition. However, the information gained from random core samples is limited to the immediate area of the core sample, therefore **PROTEUS WATERPROOFING** cannot be held responsible for changes in the build-up across a full roof area.
The Contractor is to take their own core samples to check and confirm the existing roof build-up is dry, sound and adhered prior the roofing works commencing.

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Hybrid Roofs: Existing Insulation Beneath the Roof Deck Any thermal calculations for this Specification assume no existing insulation is present between the ceiling and the roof deck. Investigations must be carried out to confirm this is the case. If insulation is present between the ceiling and the roof deck it may be necessary to remove this to prevent damage from interstitial condensation and conform with **BS 6229.** Contact **PROTEUS WATERPROOFING** for revised thermal calculations and condensation risk analysis.
Upstands, Skirtings, Edge Details, Outlets: Carefully remove the existing waterproofing from upstands, skirtings, edge details, and outlets, and prepare ready to receive the new waterproofing membrane.
Substrate: This Document refers to the installation of **PRO-BW® PLUS** onto existing asphalt, concrete and felt membranes. Prior to the installation of the new roof system the Client is to check the roof deck maximum weight loadings capacity and ensure the roof deck can accept the new/increased weight loadings. A structural engineer may be required to carry out the necessary calculations. Substrates must be without negative deflections or backfalls.
Roof Decks: Roof decks require a minimum finished fall of **1:80**.
Deflections: Existing deflections will not be resolved with a waterproofing overlay. Ensure these are levelled prior the waterproofing overlay works proceeding.
Promenade Tiles, Paving Slabs, Planters, and Garden Furniture: Bonded tiles are to be removed. Remove paving slabs, planters, furniture, and other items which may impede the installation process. The substrate should be prepared ready to receive the new **PRO-BW® PLUS (FULLY REINFORCED)** membrane. Ensure the surface is made good and indentations / deflections levelled prior to the waterproofing works.
HVAC including Cables/Trays: Roof mounted equipment is to be raised or temporarily moved to allow the installation of the new roof system. Cabling, pipes, ducting, and other obstructions preventing access to the roof areas to allow the installation of the new waterproofing membrane must be temporarily removed. Identified redundant equipment and associated cabling, pipes, vents should be removed and disposed of. Any openings are to be sealed to prevent water ingress.
Roof Plant: If M&E, Air Conditioning Units, Extractor Fans, and Cables/Trays cannot be temporarily moved or raised and therefore impede access for the installation of the new roof system, these areas may be excluded from the waterproofing guarantee, or a guarantee may not be possible.
Separation/Sacrificial Layer: Install a suitable sacrificial layer to the waterproofing in all areas where point loading will occur.
Aerials, Satellite Dishes, Telecommunications: The Contractor is to establish if equipment emitting harmful radiation is present on the roof. Where these impede works, temporarily remove to allow access.
Lightning Conductors: Qualified personnel to temporarily divert and adapt as required to allow for the roofing works. Reinstate/renew lightning conductors on completion of the roofing works.
General Building Works: Any associated building works, such as (But not limited to) cutting chases, brick-work repairs, mortar joint repairs and rendering should be carried out prior to the installation of the waterproofing membrane.

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Render Panels, Vertical Metal Cladding: Seek confirmation the render panels and vertical metal panels have been inspected and form a waterproof barrier, preventing water penetration and tracking behind the balcony upstands.
Upstands and Windows: All upstands must conform to **BS 6229** and to be a **Minimum 150mm** high from the finished roof level. **Note:** The finished roof level is the top surface of the waterproofing unless there are roof finishes. I.e., Ballast, Decking Systems, Paving Slabs or Green Roofs. In which case, the finished roof level is to be **Minimum 150mm** above the surface finishes.
Door Thresholds: All up-stands to door thresholds must conform to **BS 6229** and be a minimum **75mm** high from the finished roof level with the roof having a fall away from the building, an overflow or water check kerb set lower than the cill and the waterproofing taken into the reveal before the frame is installed. **Note:** The finished roof level is the top surface of the waterproofing unless there are roof finishes, i.e., ballast, decking systems, paving slabs, and green roofs, in which case the finished roof level is to be the surface of the finishes.
New Plywood to voids or parapets: Install new **18mm** plywood board conforming to **EN 636** and **BS EN 1995**. Fix the new **18mm** plywood directly to the joists with non-corroding screw fastenings
Adapting Parapet Walls for Metal/Lead Capping: Temporarily remove the capping to allow the installation of **PRO-BW® PLUS.** Adapt the parapet as required and reinstate/renew the capping.
Metal/Lead Capping: Ensure these are soundly fixed, and not loose. All joints are to be sealed with appropriate sealants.
Copings: Ensure these are soundly bedded, and not loose. All joints are to be sealed with appropriate mortars.
Retained Internal Outlets, Parapet Outlets: Inspect all down pipes and obtain confirmation their capacity is appropriate for the roof area, to ensure free flow of wastewater. Where the existing outlets / downpipes are to be retained, inspect for any damage and repair as required. It is recommended ground drainage and drainage pipes are inspected using CCTV equipment to ensure these are free of damage and allow a free flow of wastewater.
External Gutters: Inspect the external gutters to ensure they are sound and of a suitable capacity. Replace if required. Raising the roof level (i.e., the introduction of additional insulation) may require the external gutter line to be raised. Inspect all down pipes, to ensure free flow of wastewater. It is recommended ground drainage and drainage pipes are inspected using CCTV equipment to ensure these are free of damage and allow a free flow of wastewater.
Extract Vent: The Contractor is to establish if extract vents emitting harmful fumes are located on the roof.
Detail Integrity: Check integrity of the existing substrate, skirtings and collars. Other details should be cut back if required, making sure the substrate is sound and dimensionally stable. All protrusion pipes should be extended where necessary to accommodate new waterproofing level.

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Edge Details: Existing defective trims, lead flashings and up-stand details must be removed and renewed ready to receive the new items.
Chases: Cut out all new chases ensuring that the new chase is **W15mm** x **D25mm** deep. All chases must be cleaned and dust free prior to applying the membrane.
Overflows: Raise overflows so the exit pipe is above the new waterproofing height, to be positioned at a maximum **35mm** above the lowest point of the final finished waterproofing level.
Damp Proof Courses, Cavity Trays: Investigate and confirm cavity trays are present to prevent water penetration and tracking behind the upstands. Do not install the new waterproofing above damp-proof courses or cavity trays; raise these where required. Details which cannot meet the required **150 mm** height must be discussed with **PROTEUS WATERPROOFING** technical department, prior to the commencement of works.
Roof Openings: At the end of each day ensure all openings are sealed to prevent water ingress. Identify redundant penetrations, which should be removed and disposed of. Any openings are to be sealed to prevent water ingress.
Defective Timber/uPVC: Remove and replace any defective timber to the existing roof such as timber decks, structural joists, timber fillets, barge boards, and fascia's hard edges.
Repair Tape: ALL self-adhesive 'flashing' tape which has previously been used as a means of repair must be completely removed. **Note: Substrate defects may well be hidden by such tapes.**
Drip Battens: Install new **25mm x 50mm** treated timber battens, mechanically fixed at **300mm** centres.
Perimeter Check Curb: Raise the curbs to a minimum of **50mm x 50mm** above the drip battens.

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SURFACE PREPARATION: EXISTING ASPHALT

Existing Asphalt: All cracks, gaps, holes, should be raked out, suitably prepared prior to the installation of the **PRO-BW® PRIMER**
Clear/Prepare Surfaces: Remove, scrape, and sweep away the bulk of contamination, then clean any remaining contamination by power washing at minimum **2000 psi**. Please ensure suitable access to mains water supply prior to commencement of works is available. Do not block drainage system with debris. All substrates must be dry before applying the membrane. **Note: Power washing must not be carried out onto open roof decks or open roof areas.**
Existing Surfaces: The existing substrate must be sound, dimensionally stable, clean, and free of loose matter and excess water. The existing surface may be used as an air vapour control layer (AVCL) if a surface inspection for defects such as delamination blisters, failed lap-joints and ridging demonstrates sound integrity. A recovery layer can be introduced should the substrate be beyond repair. An AVCL must be introduced to concrete and timber decks. All surfaces are to be level ready to accept the specified system.

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SURFACE PREPARATION: CONCRETE

For Concrete, Screeded Roof Decks: All cracks, gaps, and holes should be raked out, suitably prepared, and repaired. Hollows, blows, or ridges in the existing substrate are to be levelled to leave a wood float finish. Any cracks above **5mm** should be repaired with **PROTEUS FASTFILL** rapid setting mortar. The roof deck must be dry, free of laitance and sound and have a minimum finished fall of **1:80** unless **PROTEUS PRO-THERM INSULATION CTF** tapered insulation schemes are installed in which case roof decks are required to be level.
Clear/Prepare Surfaces: Remove, scrape, and sweep away the bulk of contamination. Do not block drainage system with debris. All substrates must be dry before applying the membrane.
Metal Surface: All metal surfaces to be coated should be wire brushed and cleaned before being primed.
Oil & Grease Contaminants: To remove any persistent oil and grease, use a suitable detergent which is soap based.
Existing Surfaces: The existing substrate must be sound, dimensionally stable, clean, and free of loose matter and excess water. The existing surface may be used as an air vapour control layer (AVCL) if a surface inspection for defects such as delamination blisters, failed lap-joints and ridging demonstrates sound integrity. A recovery layer can be introduced should the substrate be beyond repair. An AVCL must be introduced to concrete and timber decks. All surfaces are to be level ready to accept the specified system.

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SURFACE PREPARATION: EXISTING FELT MEMBRANES

Existing Felt Membrane: All splits and blisters must be suitably repaired and prepared prior to the installation of the **PRO-VAPOUR CONTROL/CARRIER MEMBRANE SA**.
Clear/Prepare Surfaces: Remove, scrape, and sweep away the bulk of contamination, then clean any remaining contamination by power washing at minimum **2000 psi**. Please ensure suitable access to mains water supply prior to commencement of works is available. Do not block drainage system with debris. All substrates must be dry before applying the membrane. **Note: Power washing must not be carried out onto open roof decks or open roof areas.**
Existing Surfaces: The existing substrate must be sound, dimensionally stable, clean, and free of loose matter and excess water. The existing surface may be used as an air vapour control layer (AVCL) if a surface inspection for defects such as delamination blisters, failed lap-joints and ridging demonstrates sound integrity. A recovery layer can be introduced should the substrate be beyond repair. An AVCL must be introduced to concrete and timber decks. All surfaces are to be level ready to accept the specified system.

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PRIMING

Wet, Green Concrete, Screed:
Apply **COLD MELT® DPM PRIMER** to all areas to be waterproofed at a minimum coverage rate of **0.40kg/m²**. (Porous substrates may require a second coat).
Ensure that the primer is fully cured prior to the **PRO-BW® PLUS** being installed.

All plywood, Timber:
Apply **PRO-PRIME® SA** @ a minimum rate of **0.20ltr/m²** to all substrate areas ready to accept **PROTEUS SELF-ADHESIVE MEMBRANES**.

Metal Substrate, Repair Paints and Metal Based Solar Reflective Paints:
Apply **PRO-EPOXY PRIMER** to all areas to be waterproofed @ a minimum rate of **0.15ltr/m²**. Ensure that the primer is fully cured prior to the waterproofing membrane being applied. **PRO-EPOXY PRIMER** is supplied in two packs**, Part A** and **Part B**.

Concrete, Porous substrates, Brickwork:
Apply **PRO-BW® PRIMER** to all areas to be waterproofed at a rate of **0.2ltr/m²**. (Porous substrates may require a second coat).
Ensure that the primer is fully cured prior to the waterproofing membrane being applied.

Mixing:
PRO-BW® PRIMER and **PRO-BW® CATALYST Mixing:**
The required quantity of **PRO-BW® PRIMER** should be poured into a calibrated bucket.
The **PRO-BW® CATALYST** can then be added to the pigmented resin.
The minimum level of catalyst is 2% **(2 measuring spoons per litre of PRO-BW® PRIMER).**

Temperature	Additive	Scoops per Litre
3°C - 10°C	Proteus Pro-BW® Catalyst	4
10°C - 15°C	Proteus Pro-BW® Catalyst	3
15°C - 20°C	Proteus Pro-BW® Catalyst	2-3
20°C - 30°C	Proteus Pro-BW® Catalyst	2

Low Temperatures PRO-BW® Primer Accelerator:
When temperatures are between **+1°C** to **+10°C** and following the mixing of the Catalyst, mix the **PRO-BW® PRIMER ACCELERATOR 0.50ltr unit** into the **PRO-BW® PRIMER 5ltr unit**, see Data Sheet for instructions. Adding the accelerator increases the overall primer volume by **0.50ltr**.

NOTE Coverage Rates:
Uneven, rough, and porous substrates may increase the stated coverage rates.
'Gridding' of the areas is essential to ensure correct film thickness.

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PRODUCTS: TIMBER, PLYWOOD

SELF-ADHESIVE CARRIER MEMBRANE: TIMBER, PLYWOOD

Primer:
PROTEUS SA MEMBRANES (self-adhesive) require all surfaces to be first primed with **PRO-PRIME® SA.**

Install the **PRO-VAPOUR CONTROL/CARRIER MEMBRANE SA** onto the primed substrate up to the termination on the up-stand and fully seal by continuing by a minimum of **200mm** onto the horizontal.

Weight should be applied to all areas to ensure a full bond (For best results use a weighted roller). Side Laps and head laps are to be a minimum of **80mm** to ensure a watertight seal.
The carrier membrane is to be continued onto the full skirtings and edge details.

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PRO-BW® PLUS STANDARD DETAILING

For standard detail drawings please contact **PROTEUS WATERPROOFING** on:
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PRO-BW® PLUS Standard Application:
PRO-BW® PLUS must not be applied in standing water or freezing conditions or if these conditions are likely to occur before the membrane has dried.
Refer to data sheets for application conditions and temperatures
Pour the contents of the tub in quantities appropriate to the pre-marked areas, onto the substrate and using a medium pile roller, roller out the product in even opposing directions.
MIXING PRO-BW® PLUS
PRO-BW® PLUS is supplied in kits consisting of **10.3ltr** units of liquid pigmented Resin and a separate **1kg** Catalyst ready for on-site mixing.
Some settlement in the Resin unit may have occurred during transit so that the tub contents should be thoroughly mixed before adding the catalyst.
When the unit contents are mixed add the catalyst stirring until the mix is fully homogenized.
Application to commence immediately as the product is rapid curing.

Coverage rates can vary with temperature. Avoid storing in cold conditions prior to application. Coverage rates are for guidance only.
Site application tests are recommended to confirm actual coverage rates

PRO-BW® PLUS RESIN Base Coat Reinforced: Up-Stands, Skirtings, Cills
Membrane Embedment Coat:
Smooth Surfaces, PRO-VAPOUR CONTROL/CARRIER MEMBRANE SA: @ a minimum coverage rate of **1.50ltr/m²**.
Mineral Felt: @ a minimum coverage rate of **2.0ltr/m²**.
Concrete, Rough, Porous Surfaces: @ a minimum coverage rate of **2.0ltr/m²**.
On heavily granulated felt coverage rates will increase. Uneven, rough, and porous substrates may increase the stated coverage rates. 'Gridding' of the areas is essential to ensure correct film thickness.

Reinforcement:
Whilst the embedment coat is wet embed **PRO-FORCE 450** reinforcing matting throughout. Allow to cure before applying the topcoat to take the aggregate.
The **PRO-FORCE 450** reinforcing matting must be overlapped by a minimum of **75mm**.
Uneven, rough, and porous substrates may increase the stated coverage rates.
'Gridding' of the areas is essential to ensure correct film thickness.

Topcoat
To all details apply **PRO-BW® PLUS RESIN** @ minimum **0.50ltr/m².**

Chases:
Dress the waterproofing into the prepared chase. Seal the chase with **PROTEUS SEALANT** once the membrane has fully cured.

Flashings:
Dress lead cover flashing down over the vertical waterproofing detail by a minimum of **150mm**.
Use a suitable third-party Lead Sealant.

To Tiled Pitched Roofs:
Lay-boards to be fitted minimum **200 mm** above finished roof level, measured vertically, with minimum **25 mm** check curb to high point.
Continue the waterproofing up the pitched lay-board and over the water check curb.

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Continue the pitched roof eave detail over the waterproofing and lay-board, ensuring the final course of tiles terminates **150 mm** lower than the position of the check curb, measured vertically.

Note: The finished roof level is the top surface of the waterproofing except where there are roof finishes such as paving, ballast, living roofs, in which case the finished roof level is the surface level of the finishes.
Membrane thicknesses at details must be allowed for particularly where they differ in build up at the top and base of the detail and should be accounted for in the setting out heights.

Termination Bars:
Bed the existing, or new, **PROTEUS TERMINATION BAR** onto **PRO-FLEXI STRIP** and mechanically fix the bar at **300mm** centres. Seal the leading edge with **PROTEUS SEALANT**.

Render Stop, Coping Stones:
Dress **PRO-BW® PLUS** onto the underside of the overhang. Seal to a minimum height of **150mm** above the finished waterproofing level. Seal with **PROTEUS SEALANT**.

Up-Stands, Skirtings and Cills:
Dress the waterproofing tightly under the cills/termination detail. Seal with **PROTEUS SEALANT**. All up-stand must conform to **BS 6229** and be a minimum **150mm** high from the finished roof level.
Note: The finished roof level is the top surface of the waterproofing unless there are roof finishes, i.e., ballast, decking systems, paving slabs, and green roofs, in which case the finished roof level is to be the surface of the finishes.

Door Thresholds:
Dress the waterproofing tightly under the door threshold. Seal with **PROTEUS SEALANT.** All up-stands to door thresholds must conform to **BS 6229** and be a minimum **75mm** high from the finished roof level**.**
Note: The finished roof level is the top surface of the waterproofing unless there are roof finishes, i.e., ballast, decking systems, paving slabs, and green roofs, in which case the finished roof level is to be the surface of the finishes.

Existing Trim Details:
Dress the **PRO-BW® PLUS** to the existing trim and seal with gun applied **PROTEUS SEALANT.**

Perimeter Edge Detail:
Fix a new **PROTEUS EDGE TRIM** of an appropriate depth to the perimeter edge. The trims are to be mechanically fixed with screws at **300mm** centres. A bridging piece is to be installed at each section joint. The trim is to overlap any openings by a minimum of **25mm**. The **PRO-BW® PLUS** is to be terminated tightly into the top lip of the primed trim and sealed with **PROTEUS SEALANT.**
Where required install new fascia's (uPVC) the client's specification.

Perimeter Drip Detail:
Fix a new **PROTEUS DRIP TRIM** of an appropriate depth to the perimeter edge. The trims are to be mechanically fixed with screws at **300mm** centres. A bridging piece is to be installed at each section joint. The trim is to overlap any openings by a minimum of **25mm**.
The **PRO-BW® PLUS** is to fully encapsulate the primed trim and be terminated tightly at the drip edge.
Where required install new fascia's (uPVC) the client's specification.

Rainwater Outlets:
Ensure the new waterproofing membrane is fully sealed onto the outlets and extended into the outlet mouth as far as possible. Bond a promenade tile with **PROTEUS SEALANT** beneath all rainwater downpipes.

Chutes:
Encapsulate the chute with **PRO-BW® PLUS** extending through the opening returning onto outer wall face to the drip-edge.

Pipes and Protrusions:
Apply the **PRO-BW® PLUS** onto the primed protrusions **150mm** above the finished waterproofing level. Install a stainless-steel jubilee clip around the collar of the **PRO-BW® PLUS.**

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Change of levels: Dress the waterproofing membrane specified up and over the change of level step.
Metal/Lead Capping: Ensure these are soundly fixed, and not loose. All joints are to be sealed with appropriate sealants.
Copings: Ensure these are soundly bedded, and not loose. All joints are to be sealed with appropriate mortars.

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PRO-BW® PLUS SKID-INHIBITING FINISH: DECK AREAS / STEP TREADS

PRO-BW® PLUS Standard Application: **PRO-BW® PLUS** must not be applied in standing water or freezing conditions or if these conditions are likely to occur before the membrane has dried. Refer to data sheets for application conditions and temperatures Pour the contents of the tub in quantities appropriate to the pre-marked areas, onto the substrate and using a medium pile roller, roller out the product in even opposing directions. **MIXING PRO-BW® PLUS** **PRO-BW® PLUS** is supplied in kits consisting of **10.3ltr** units of liquid pigmented Resin and a separate **1kg** Catalyst ready for on-site mixing. Some settlement in the Resin unit may have occurred during transit so that the tub contents should be thoroughly mixed before adding the catalyst. When the unit contents are mixed add the catalyst stirring until the mix is fully homogenized. Application to commence immediately as the product is rapid curing.
Coverage rates can vary with temperature. Avoid storing in cold conditions prior to application. Coverage rates are for guidance only. Site application tests are recommended to confirm actual coverage rates
PRO-BW® PLUS RESIN Base Coat Reinforced: Up-Stands, Skirtings, Cills **Membrane Embedment Coat:** **Smooth Surfaces, PRO-VAPOUR CONTROL/CARRIER MEMBRANE SA:** @ a minimum coverage rate of **1.50ltr/m²**. **Mineral Felt:** @ a minimum coverage rate of **2.0ltr/m²**. **Concrete, Rough, Porous Surfaces:** @ a minimum coverage rate of **2.0ltr/m²**. On heavily granulated felt coverage rates will increase. Uneven, rough, and porous substrates may increase the stated coverage rates. 'Gridding' of the areas is essential to ensure correct film thickness.
Reinforcement: Whilst the embedment coat is wet embed **PRO-FORCE 450** reinforcing matting throughout. Allow to cure before applying the topcoat to take the aggregate. The **PRO-FORCE 450** reinforcing matting must be overlapped by a minimum of **75mm**. Uneven, rough, and porous substrates may increase the stated coverage rates. 'Gridding' of the areas is essential to ensure correct film thickness.
Skid-Inhibiting Finish to Deck Areas: Apply **PRO-BW® PLUS RESIN** @ a coverage rate of **0.5ltr/m²** and whilst wet broadcast **PRO-AGGREGATE EM (0.5mm-1mm aggregate)** @ a coverage rate of **2-3kg/m²**. The initial broadcast must be a light hand cast into the surface that is gradually built up offering full coverage. NB: Aggregate dropped in on mass causing point loading will pit the surface and could nullify the warranty. Once cured, sweep/remove off the excess aggregate prior to the **PRO-BW® SEALER** coat being applied. Deck area to receive aggregate to be taped off prior to application of **PRO-BW® PLUS RESIN** and aggregate. Tape to be removed while membrane is still wet. Uneven, rough, and porous substrates may increase the stated coverage rates. 'Gridding' of the areas is essential to ensure correct film thickness.
Sealer Coat: To aggregate areas only apply **PRO-BW® SEALER** @ minimum **0.50ltr/m².**
Low Tack Tapes: Tape should be used to ensure the membrane is finished with clean, straight lines.

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Mixing:
PRO-BW® PLUS RESIN/ PRO-BW® PLUS SEALER and **PRO-BW® CATALYST** mixing**:**
The required quantity of **PRO-BW® PLUS RESIN or PRO-BW® PLUS SEALER** should be poured into a calibrated bucket. The **PRO-BW® CATALYST** can then be added to the pigmented resin.

The minimum level of catalyst is 2% (2 measuring spoons per litre of **PRO-BW® PLUS RESIN & PRO-BW® PLUS SEALER**).

Temperature	Additive	Scoops per Litre
3°C - 10°C	**Proteus Pro-BW® Catalyst**	4
10°C - 15°C	**Proteus Pro-BW® Catalyst**	3
15°C - 20°C	**Proteus Pro-BW® Catalyst**	2-3
20°C - 30°C	**Proteus Pro-BW® Catalyst**	2

Low Temperatures Proteus PRO-BW® Plus Resin Accelerator:
When temperatures are between **+1°C** to **+10°C** and following the mixing of the Catalyst, mix the **PRO-BW® PLUS RESIN ACCELERATOR 1ltr unit** into the **PRO-BW® PLUS RESIN 10.3ltr** unit, see Data Sheet for instructions. Adding the accelerator increases the overall primer volume by **1.0ltr**.

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CONTRACTORS / INSURANCE BACKED GUARANTEE

Photographic Evidence:
The Contractor is to record with photographic evidence the surface preparation, priming and each layer installed, standard detailing and terminations, non-standard detailing, and terminations to be approved by **PROTEUS WATERPROOFING**.

Inspection:
The roof may be inspected by **PROTEUS WATERPROOFING,** and progress reports undertaken to review the work being carried out as per the Proteus Specification. The works may benefit from an inspection to review the general competence of operatives and standard of workmanship.
Safe access must be available for any inspection to be carried out.

Proteus Snag List:
A snagging list may be produced to address any areas noted that are sub-standard or not conforming with the requirements of the specification.

Final Sign off:
At the completion of the specified project, works may be signed off by **PROTEUS WATERPROOFING** to generally review the scope of the Proteus Specification and the final Finished System.

Contractors:
PROTEUS WATERPROOFING approved Contractors must have been assessed in the specified membrane.
The Contractor must offer reasonable notice to **PROTEUS WATERPROOFING** of commencement of the works if any inspections are to be scheduled throughout the works program.
The Guarantee can be issued following a final inspection of the works, as carried out by the Contractor.
The Contractor is to request any final inspection on practical completion of the contract.
All snagging and corrections must be made prior the final inspection.

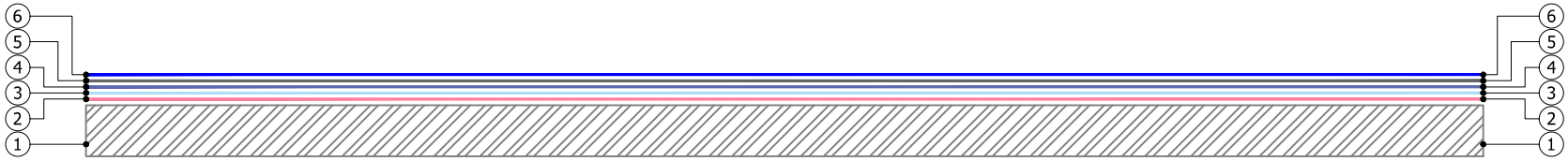
Proteus Insurance Backed Guarantee:
A **20 Year Proteus Insurance Backed Guarantee** is required providing **20 years** of cover with insurance backing for the first **12 years**; subject to the current terms and conditions of the guarantee which are available separately upon request. The installation of the Finished System within the Proteus Specification shall be carried out by a competent Contractor.
Note:
Proteus Insurance Backed Guarantees include a pre-paid, single premium independent insurance policy.
For each individual insurance backed certificate of guarantee,
where areas are less than **100m²** for Built-Up Roofs, and less than **250m²** for waterproofing membranes only, these areas are subject to a separate **£500.00** Technical Inspection fee.

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Rayleigh
Essex SS6 7XF

Tel: 01268 777 871
Email: office@proteuswaterproofing.co.uk
www.proteuswaterproofing.co.uk

Registered Office: Charter House, 105 Leigh Road, Leigh-On-Sea, Essex, SS9 1JL | Registered company number: 08458402

1. Substrate
2. Timber substrate: **Pro-Vapour Control/Carrier Membrane SA** and **Pro-Prime® SA**
2. Concrete/Asphalt/Felt substrate: **Pro-Prime® BW**
3. **Pro-BW® Plus Resin** base coat with embedded **Pro-Force 450** reinforcement
4. **Pro-BW® Plus Resin** top coat
5. **Pro-BW® Plus Resin** with **Pro-Aggregate EM (optional)**
6. **Pro-BW® Sealer** (optional)



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Drawing No.:	Roof Type:
SD_PBWP_OVERLAY_01	Overlay

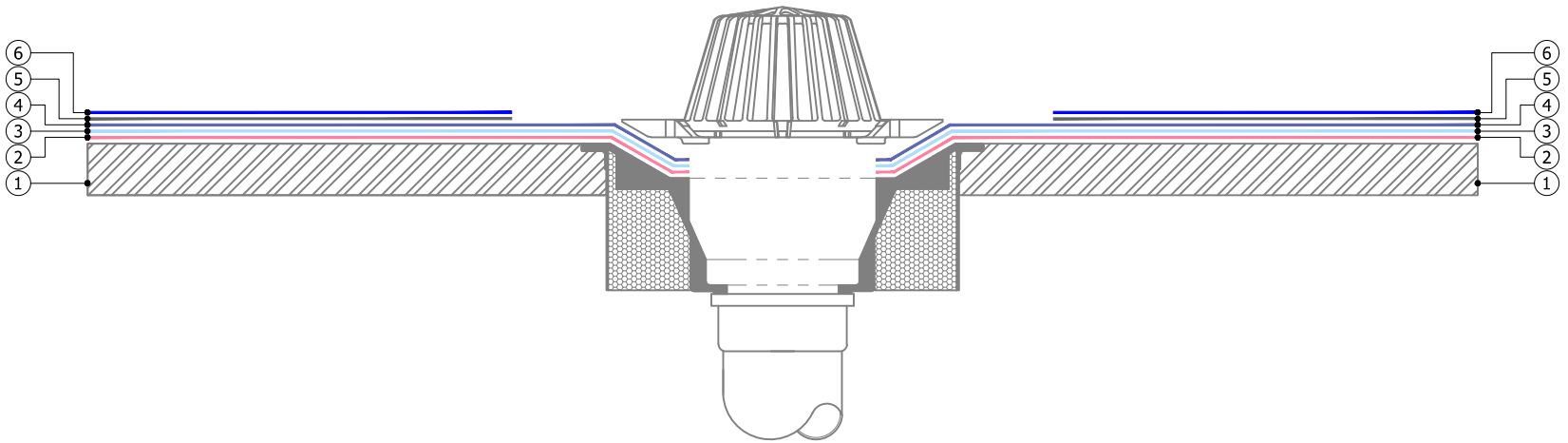
Description: **Horizontal Surface**

Scale:	Drawn:	Date:
NTS	W.Harding	15/04/2025

Pro-BW® Plus

Proteus WATERPROOFING

1. Substrate
2. Timber substrate: **Pro-Vapour Control/Carrier Membrane SA** and **Pro-Prime® SA**
2. Concrete/Asphalt/Felt substrate: **Pro-Prime® BW**
3. **Pro-BW® Plus Resin** base coat with embedded **Pro-Force 450** reinforcement
4. **Pro-BW® Plus Resin** top coat
5. **Pro-BW® Plus Resin** with **Pro-Aggregate EM** (optional)
6. **Pro-BW® Sealer** (optional)



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Drawing No.:	Roof Type:
SD_PBWP_OVERLAY_02	Overlay

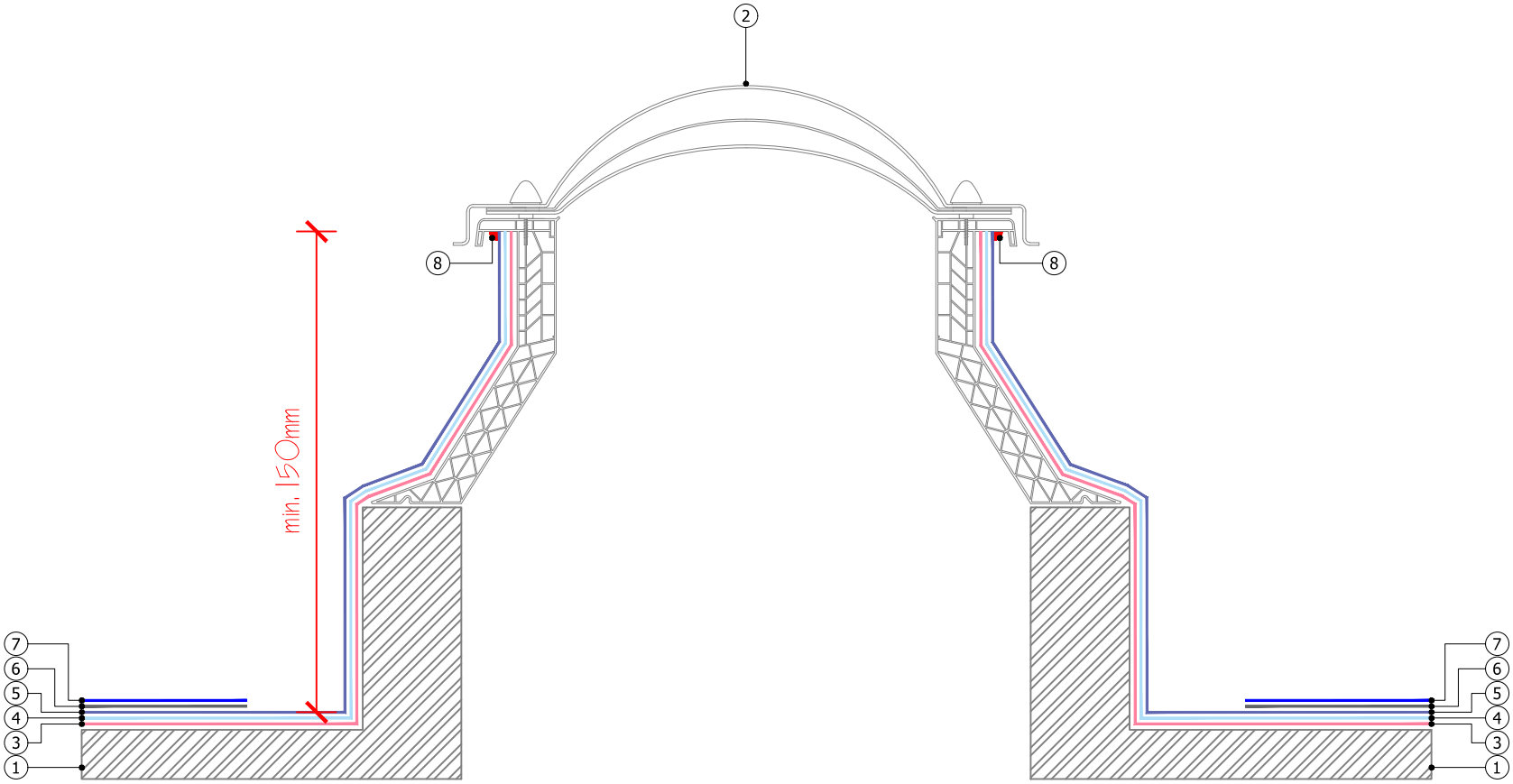
Description:
Vertical Rainwater Outlet

Scale:	Drawn:	Date:
NTS	W.Harding	15/04/2025

Pro-BW® Plus

Proteus WATERPROOFING

1. Substrate
2. Rooflight / Roof Access Hatch (by others)
3. Timber substrate: **Pro-Vapour Control/Carrier Membrane SA** and **Pro-Prime® SA**
3. Concrete/Asphalt/Felt substrate: **Pro-Prime® BW**
4. **Pro-BW® Plus Resin** base coat with embedded **Pro-Force 450** reinforcement
5. **Pro-BW® Plus Resin** top coat
6. **Pro-BW® Plus Resin** with **Pro-Aggregate EM** (optional)
7. **Pro-BW® Sealer** (optional)
8. **Proteus Sealant**



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Drawing No.:	Roof Type:
SD_PBWP_OVERLAY_03	Overlay

Description:
Rooflight / Access Hatch

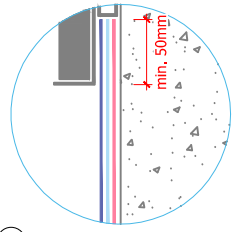
Scale:	Drawn:	Date:
NTS	W.Harding	15/04/2025

Pro-BW® Plus

Proteus WATERPROOFING

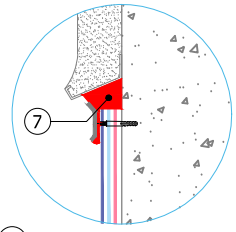
1. Substrate
2. Timber substrate: **Pro-Vapour Control/Carrier Membrane SA** and **Pro-Prime® SA**
2. Concrete/Asphalt/Felt substrate: **Pro-Prime® BW**
3. **Pro-BW® Plus Resin** base coat with embedded **Pro-Force 450** reinforcement
4. **Pro-BW® Plus Resin** top coat
5. **Pro-BW® Plus Resin** with **Pro-Aggregate EM** (optional)
6. **Pro-BW® Sealer** (optional)
7. **Proteus Sealant**

Cladding



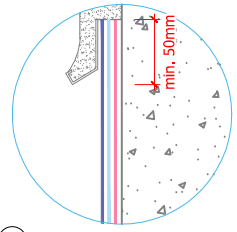
A New vertical cladding installed to provide minimum 50mm weathering lap

Render (Existing)



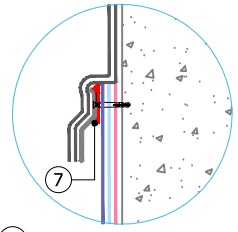
B Seal with a continuous minimum 6mm bead of **Proteus Sealant** following through cure of the System

Render (New)



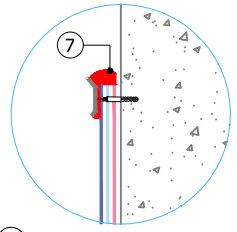
C Traditional render application with mechanically fixed bell cast/stop bead installed to overlap Waterproofing membrane by minimum 50mm

Wall Coating



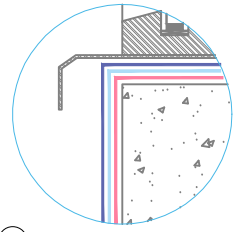
D Mechanically fixed **Proteus Counter Flashing** used as the lower termination position of the specified wall coating

Termination Bar



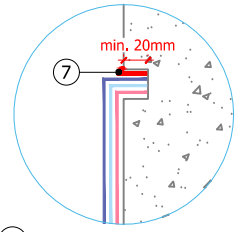
E Waterproofing System terminated with a mechanically fixed **Proteus Termination Bar,** sealed and bedded with **Proteus Sealant**

Threshold/Projecting Sill



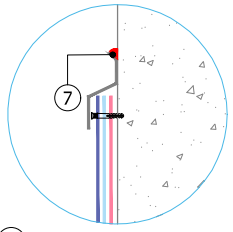
F Waterproofing System terminated tightly at the junction with the projecting sill and sealed with **Proteus Sealant**

Chase



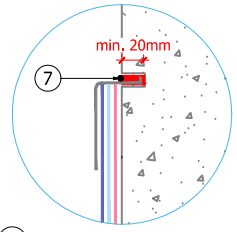
G Waterproofing System terminated in a 25mm x 10mm cleaned and primed pre-cut chase sealed with **Proteus Sealant**

Counter Flashing

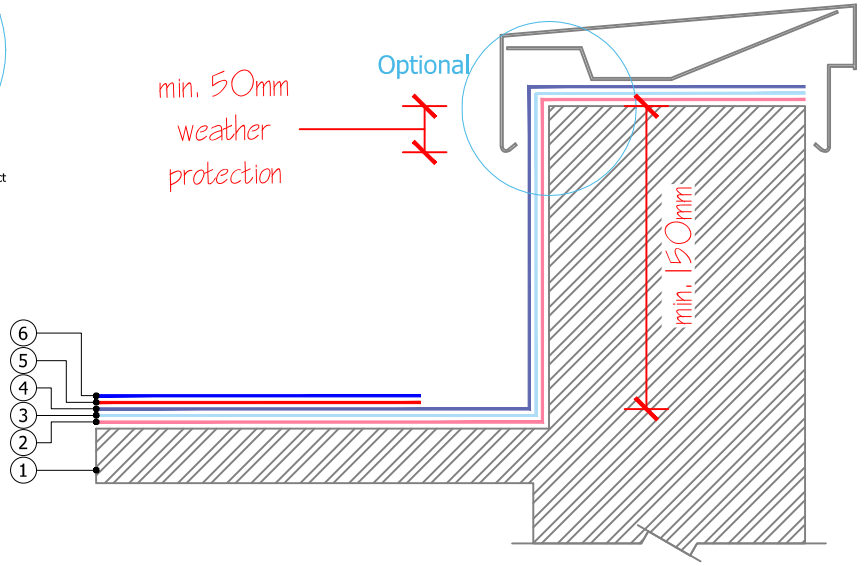


H Waterproofing System terminated with a mechanically fixed **Proteus Counter Flashing,** sealed and bedded with **Proteus Sealant**

Lead Flashing (New)



I New Lead Flashings installed in strict accordance with BS 6915 and LSA guidelines



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Drawing No.:	Roof Type:
SD_PBWP_OVERLAY_04	Overlay

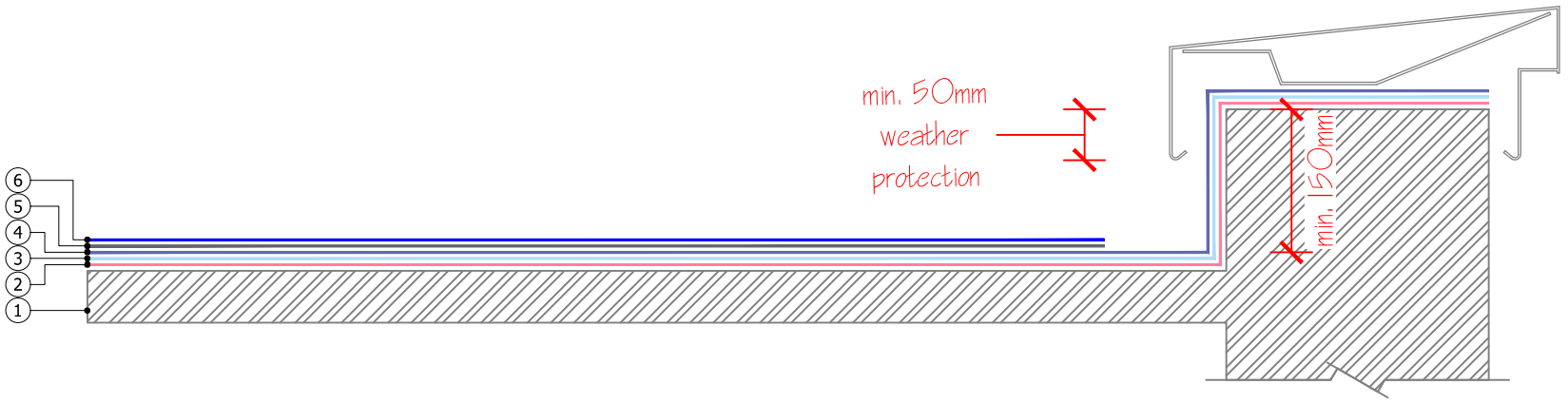
Description: **Upstand Terminations**

Scale:	Drawn:	Date:
NTS	W.Harding	15/04/2025

Pro-BW® Plus

Proteus WATERPROOFING

1. Substrate
2. Timber substrate: **Pro-Vapour Control/Carrier Membrane SA** and **Pro-Prime® SA**
2. Concrete/Asphalt/Felt substrate: **Pro-Prime® BW**
3. **Pro-BW® Plus Resin** base coat with embedded **Pro-Force 450** reinforcement
4. **Pro-BW® Plus Resin** top coat
5. **Pro-BW® Plus Resin** with **Pro-Aggregate EM** (optional)
6. **Pro-BW® Sealer** (optional)



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Drawing No.:	Roof Type:
SD_PBWP_OVERLAY_06	Overlay

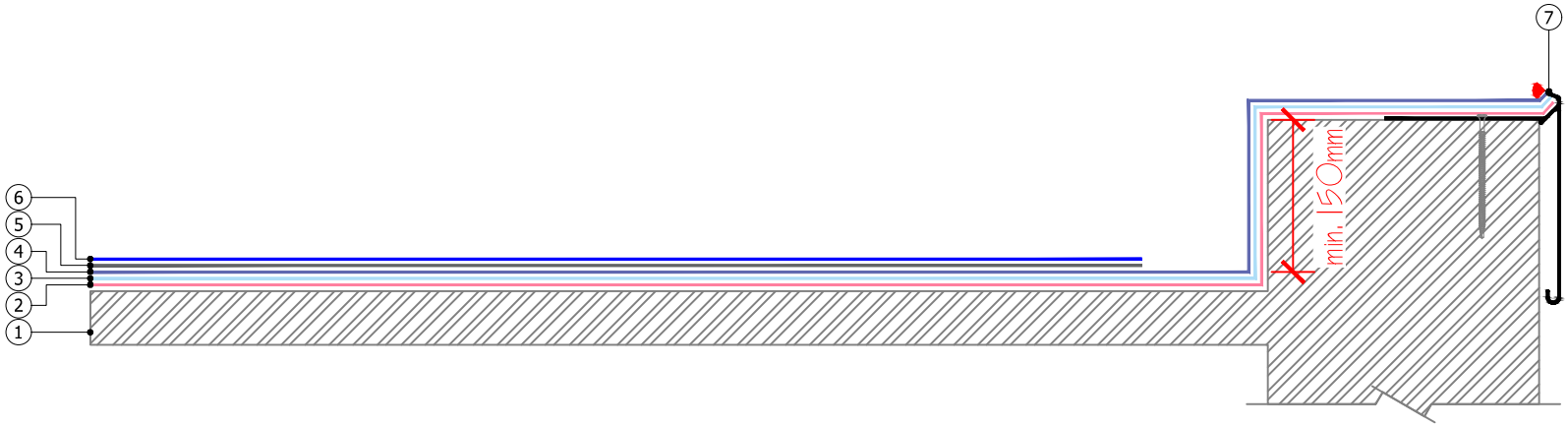
Description:
Parapet - Capping

Scale:	Drawn:	Date:
NTS	W.Harding	15/04/2025

Pro-BW® Plus

Proteus WATERPROOFING

1. Substrate
2. Timber substrate: **Pro-Vapour Control/Carrier Membrane SA** and **Pro-Prime® SA**
2. Concrete/Asphalt/Felt substrate: **Pro-Prime® BW**
3. **Pro-BW® Plus Resin** base coat with embedded **Pro-Force 450** reinforcement
4. **Pro-BW® Plus Resin** top coat
5. **Pro-BW® Plus Resin** with **Pro-Aggregate EM** (optional)
6. **Pro-BW® Sealer** (optional)
7. **GRP Trim** (mechanically fixed) and **Proteus Sealant**



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Drawing No.:	Roof Type:
SD_PBWP_OVERLAY_07	Overlay

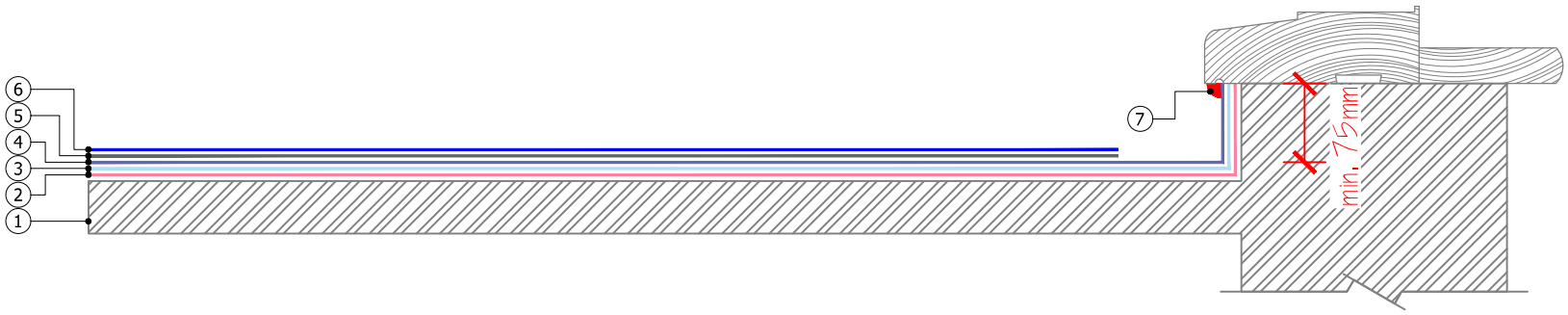
Description: **Parapet - GRP Trim**

Scale:	Drawn:	Date:
NTS	W.Harding	15/04/2025

Pro-BW® Plus

Proteus WATERPROOFING

1. Substrate
2. Timber substrate: **Pro-Vapour Control/Carrier Membrane SA and Pro-Prime® SA**
2. Concrete/Asphalt/Felt substrate: **Pro-Prime® BW**
3. **Pro-BW® Plus Resin** base coat with embedded **Pro-Force 450** reinforcement
4. **Pro-BW® Plus Resin** top coat
5. **Pro-BW® Plus Resin** with **Pro-Aggregate EM** (optional)
6. **Pro-BW® Sealer** (optional)
7. **Proteus Sealant**



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Drawing No.:	Roof Type:
SD_PBWP_OVERLAY_08	Overlay

Description:
Threshold (Existing) - Sealant

Scale:	Drawn:	Date:
NTS	W.Harding	15/04/2025

Pro-BW® Plus

Proteus WATERPROOFING

① Substrate

② Timber substrate: **Pro-Vapour Control/Carrier Membrane SA** and **Pro-Prime® SA**

② Concrete/Asphalt/Felt substrate: **Pro-Prime® BW**

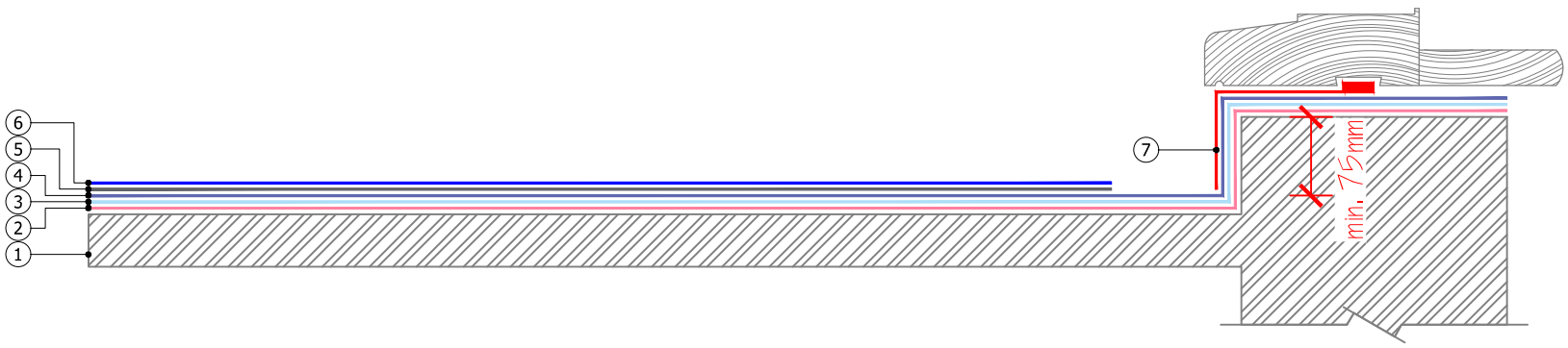
③ **Pro-BW® Plus Resin** base coat with embedded **Pro-Force 450** reinforcement

④ **Pro-BW® Plus Resin** top coat

⑤ **Pro-BW® Plus Resin** with **Pro-Aggregate EM** (optional)

⑥ **Pro-BW® Sealer** (optional)

⑦ EPDM membrane (min. 100mm lap onto waterproofing)



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Drawing No.:	Roof Type:
SD_PBWP_OVERLAY_09	Overlay

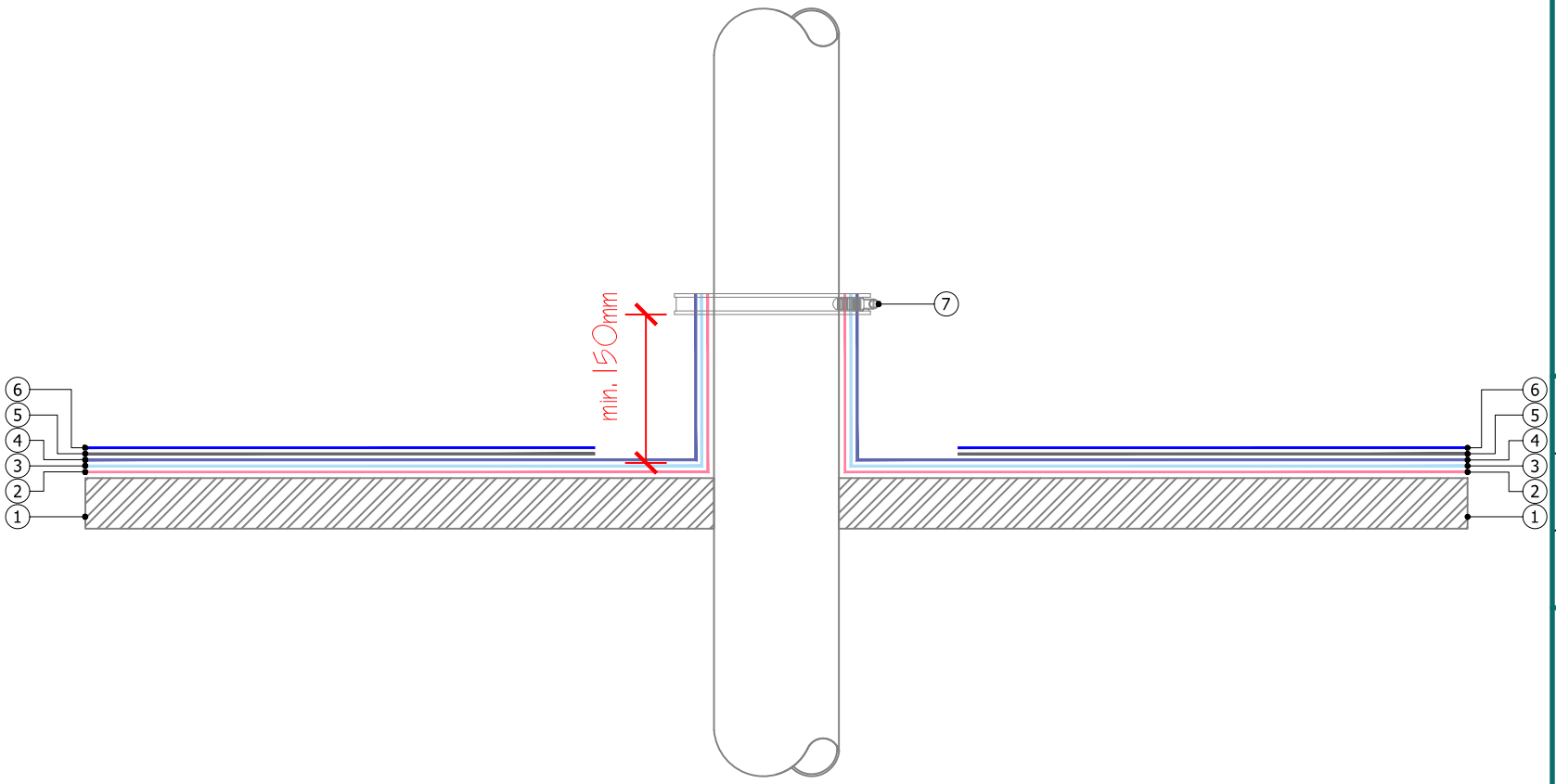
Description: **Threshold (New) - EPDM**

Scale:	Drawn:	Date:
NTS	W.Harding	15/04/2025

Pro-BW® Plus

Proteus WATERPROOFING

1. Substrate
2. Timber substrate: **Pro-Vapour Control/Carrier Membrane SA** and **Pro-Prime® SA**
2. Concrete/Asphalt/Felt substrate: **Pro-Prime® BW**
3. **Pro-BW® Plus Resin** base coat with embedded **Pro-Force 450** reinforcement
4. **Pro-BW® Plus Resin** top coat
5. **Pro-BW® Plus Resin** with **Pro-Aggregate EM** (optional)
6. **Pro-BW® Sealer** (optional)
7. Jubilee Clip (by others)



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Drawing No.:	Roof Type:
SD_PBWP_OVERLAY_10	Overlay

Description: **Cold Pipe Penetration**

Scale:	Drawn:	Date:
NTS	W.Harding	15/04/2025

Pro-BW® Plus

Proteus WATERPROOFING

① Substrate

② Timber substrate: **Pro-Vapour Control/Carrier Membrane SA** and **Pro-Prime® SA**

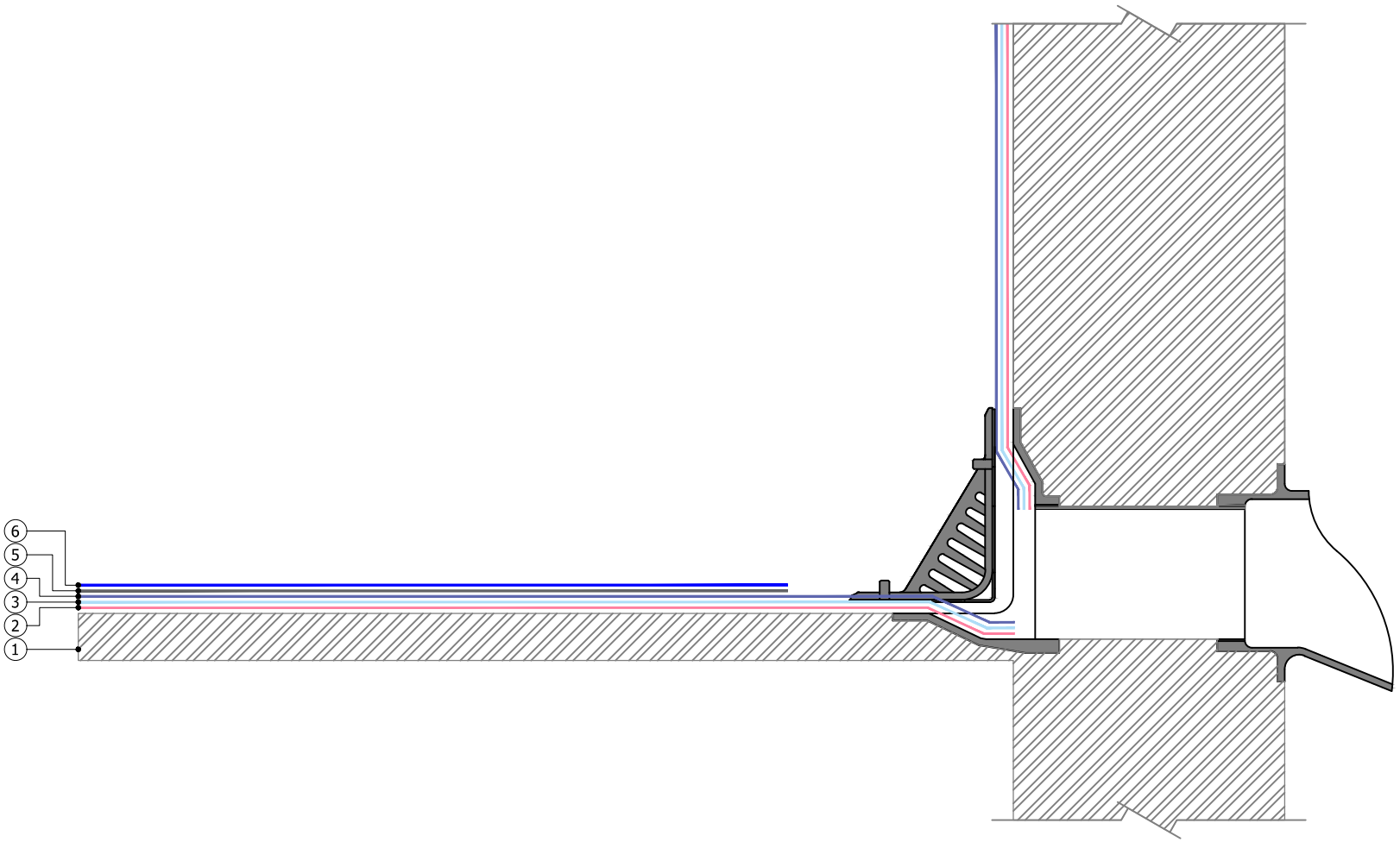
② Concrete/Asphalt/Felt substrate: **Pro-Prime® BW**

③ **Pro-BW® Plus Resin** base coat with embedded **Pro-Force 450** reinforcement

④ **Pro-BW® Plus Resin** top coat

⑤ **Pro-BW® Plus Resin** with **Pro-Aggregate EM** (optional)

⑥ **Pro-BW® Sealer** (optional)



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Drawing No.:	Roof Type:
SD_PBWP_OVERLAY_12	**Overlay**

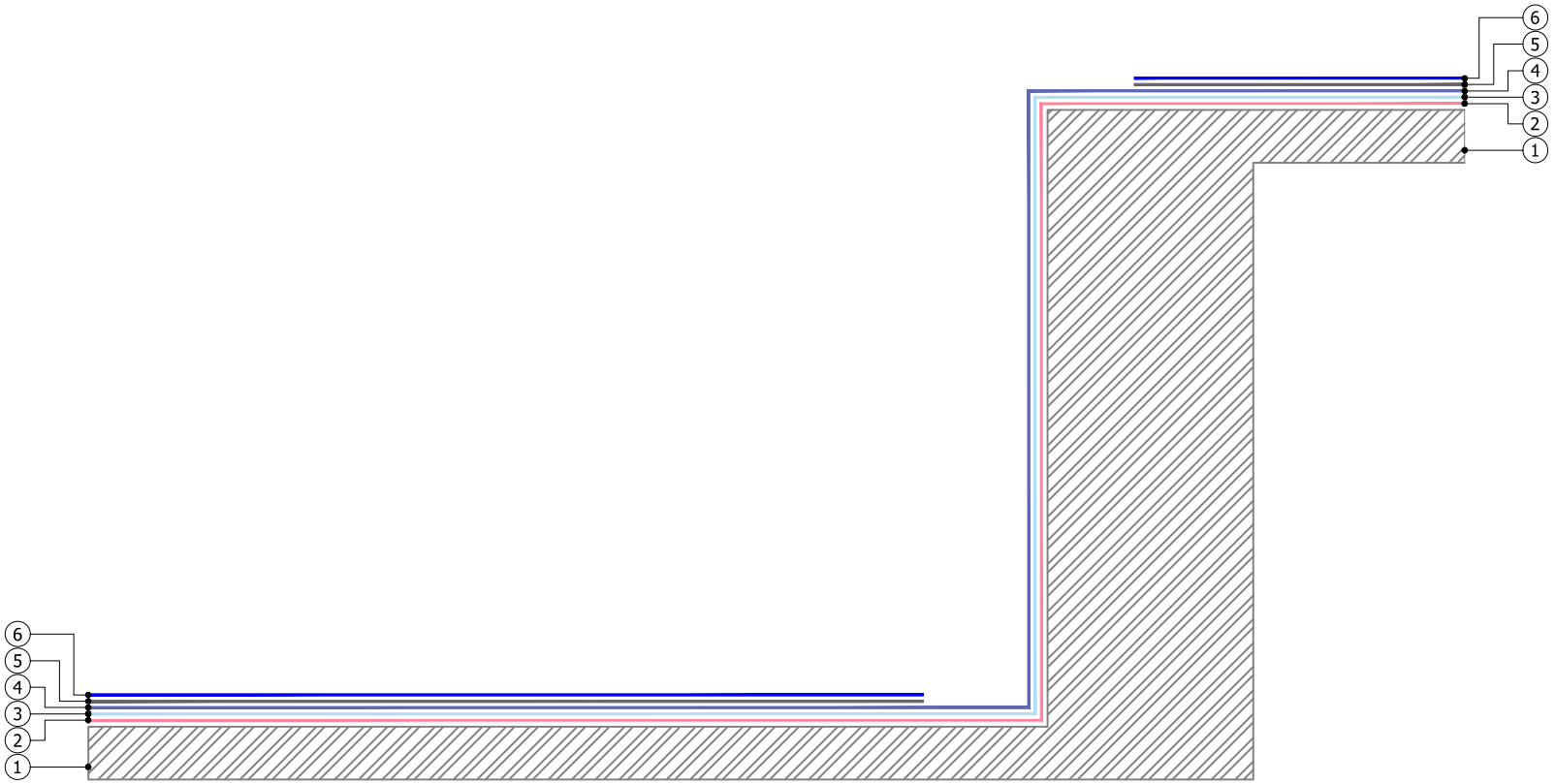
Description: **Parapet Outlet**

Scale:	Drawn:	Date:
NTS	**W.Harding**	**15/04/2025**

Pro-BW® Plus

Proteus WATERPROOFING

1. Substrate
2. Timber substrate: **Pro-Vapour Control/Carrier Membrane SA** and **Pro-Prime® SA**
2. Concrete/Asphalt/Felt substrate: **Pro-Prime® BW**
3. **Pro-BW® Plus Resin** base coat with embedded **Pro-Force 450** reinforcement
4. **Pro-BW® Plus Resin** top coat
5. **Pro-BW® Plus Resin** with **Pro-Aggregate EM** (optional)
6. **Pro-BW® Sealer** (optional)



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For refurbishment projects, all aspects of the existing roof are deemed to be fully compliant with BS 6229 (Code of practice for flat roofs with continuously supported coverings) or improved upon for instances where these standards are not met.
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Drawing No.:	Roof Type:
SD_PBWP_OVERLAY_13	Overlay

Description:
Roof Transition

Scale:	Drawn:	Date:
NTS	W.Harding	15/04/2025

Pro-BW® Plus

Proteus WATERPROOFING

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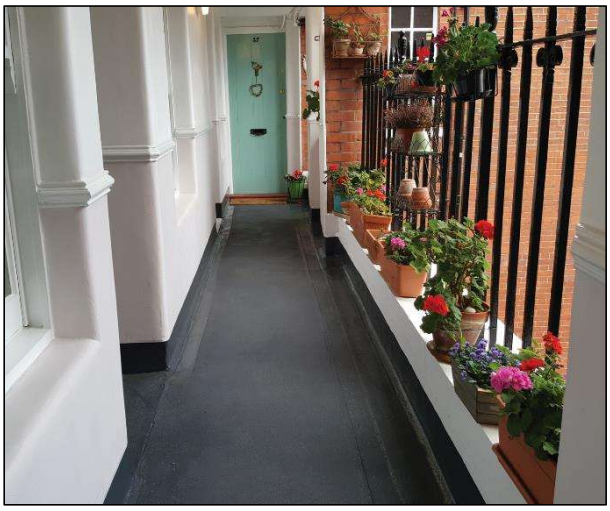
Agrément Certificate
18/5574
Product Sheet 1

PROTEUS LIQUID-APPLIED WATERPROOFING SYSTEMS

PRO-BW PLUS SYSTEM

This Agrément Certificate Product Sheet(1) relates to the Pro-BW(2) Plus System, a liquid applied roof waterproofing system for use on flat, completely flat and sloped roofs, in warm, cold, inverted and green roof specifications.

(1) Hereinafter referred to as 'Certificate'.
(2) Pro-BW is a registered trademark.



CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production†
- formal three-yearly review.†

KEY FACTORS ASSESSED

Weathertightness — the system will resist the passage of moisture into the building (see section 6).
Properties in relation to fire — the system can enable a roof to be unrestricted under the national Building Regulations (see section 7).
Adhesion — the adhesion of the system is sufficient to resist the effects of any likely wind suction and the effects of thermal or another minor movement likely to occur in practice (see section 8).
Resistance to mechanical damage — the system will accept, without damage, the limited foot traffic and loads associated with installation and maintenance (see section 9).
Durability — under normal service conditions, the system will provide a durable waterproof covering with a service life of at least 25 years when exposed (see section 12).

The BBA has awarded this Certificate to the company named above for the system described herein. This system has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 10 October 2018

John Albon – Head of Approvals Construction Products

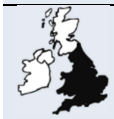
Claire Curtis-Thomas
Chief Executive

This Certificate was amended on 22 May 2024 as part of a transition of The BBA Agrément Certificate scheme delivered under the BBA's ISO/IEC 17020 accreditation. This Certificate was issued originally under accreditation to ISO/ IEC 17065. Sections marked with the symbol † are not issued under accreditation. Full conversion to the ISO/IEC 17020 format will take place at the next Certificate review. The BBA is a UKAS accredited Inspection Body (No.4345). ***Readers MUST check the validity of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.*** *Any photographs are for illustrative purposes only, do not constitute advice and must not be relied upon.*

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Regulations

In the opinion of the BBA, the Pro-BW Plus System, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



The Building Regulations 2010 (England and Wales) (as amended)

Requirement: **B4(2)** **External fire spread**
Comment: On suitable substructures, the use of the system can enable a roof to be unrestricted under this Requirement. See sections 7.1 to 7.4 of this Certificate.

Requirement: **C2(b)** **Resistance to moisture**
Comment: The system can satisfy this Requirement. See section 6.1 of this Certificate.

Regulation: **7** **Materials and workmanship**
Comment: The system is acceptable. See section 12.1 and the *Installation* part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation: **8(1)(2)** **Durability, workmanship and fitness of materials**
Comment: Use of the system satisfies the requirements of this Regulation. See sections 11.1, 11.2 and 12.1 and the *Installation* part of this Certificate.

Regulation: **9** **Building standards applicable to construction**
Standard: 2.8 Spread from neighbouring buildings
Comment: On suitable non-combustible substructures, the use of the system can be regarded as having low vulnerability under clause 2.8.1[(1)(2)] of this Standard. See sections 7.1 to 7.4 of this Certificate.

Standard: 3.10 Precipitation
Comment: The use of the system will enable a roof to satisfy the requirements of this Standard, with reference to clauses 3.10.1[(1)(2)] and 3.10.7[(1)(2)]. See section 6.1 of this Certificate.

Standard: 7.1(a) Statement of sustainability
Comment: The system can contribute to meeting the relevant requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.

Regulation: **12** **Building standards applicable to conversions**
Comment: Comments in relation to the system under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1[(1)(2)] and Schedule 6[(1)(2)].

(1) Technical Handbook (Domestic).
(2) Technical Handbook (Non-Domestic).



The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation: **23(a)(b)(i)** **Fitness of materials and workmanship**
Comment: The system is acceptable. See section 12.1 and the *Installation* part of this Certificate

Regulation: **28(b)** **Resistance to moisture and weather**
Comment: The use of the system can enable a roof to satisfy the requirements of this Regulation. See section 6.1 of this Certificate.

Regulation:	**36(b)**	**External fire spread**
Comment:		On suitable substructures, the use of the system can enable a roof to be unrestricted under the requirements of this Regulation. See sections 7.1 to 7.4 of this Certificate.

Construction (Design and Management) Regulations 2015
Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See section: 3 *Delivery and site handling* of this Certificate.

Additional Information

NHBC Standards 2018

In the opinion of the BBA, the Pro-BW Plus system, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 7.1 *Flat roofs and balconies.*

Technical Specification

1 Description

1.1 The Pro-BW Plus System is a liquid-applied, glass-reinforced, flexible modified polyester system, available in unpigmented or pre-pigmented versions.

1.2 The Pro-BW Plus system consists of:

- Pro-BW Plus Resin — a flexible, modified polyester resin
- Pro-BW Pigment — a pigment dispersed in a polyester resin, available in in mid-grey as standard; other non-standard colours are available on request
- Pro-BW Catalyst — 50% dibenzoyl peroxide powder
- Pro-Force 450 — a 450 $g \cdot m^{-2}$ glassfibre mat for reinforcing the system
- Pro-Aggregate EM — a surface finish to provide an anti-slip surface if required.

1.3 Pro-BW Plus Resin has the nominal characteristics of:

Specific gravity	1.33
Gel time at 25°C	18 minutes
Viscosity	1200–1600 $mPa \cdot s^{-1}$
Thixotropic index	5.0.

1.4 Ancillary items for use with the system are:

- Pro-BW Primer S — a standard primer for preparing bituminous, wood, concrete, and some other substrates
- Pro-BW Primer — an alternative primer for preparing bituminous, wood, concrete, and other substrates as approved by the Certificate holder
- Pro-BW Metal Primer — a primer for preparing metal substrates
- Mordant T-Wash — a pre-treatment for new galvanized steel or zinc substrates
- Pro-BW Taping Mat — a reinforcing tape for use at points of weakness such as detailing, protrusions and over cracks
- Pro-BW MMA Resin — a liquid-applied methyl methacrylate resin that may be used over excessive movement joints and other special case applications
- Pro-BW Accelerator — an additive to allow application at lower temperatures
- Pro-BW Primer Accelerator — an additive to allow application at lower temperatures
- GRP trims — a range of factory-manufactured GRP trims, including upstand fixing trim, drip trim, fillet trim and flat trim
- Pro-Tool/Surface Cleaner — for use in cleaning tools.

1.5 Ancillary items that can be used in conjunction with the system, but which are outside the scope of this Certificate, are:

- Pro-Quartz Sand — an alternative grit for walkways and balconies
- Pro-Mineral Slate — an alternative grit for walkways and balconies
- Pro-BW Sealer— a hard finishing wear coat for walkways and balconies.

2 Manufacture

2.1 The Pro-BW Plus System components, Pro-BW Primers and accelerators are manufactured via a batch blending process using conventional methods.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

3 Delivery and site handling

3.1 The Pro-BW Plus Resin component is delivered to site in 10.3 litre tins bearing the Certificate holder's name and logo, the product name, batch number, health and safety data and the BBA logo incorporating the number of this Certificate.

3.2 The Certificate holder has taken the responsibility of classifying and labelling the system components under the *CLP Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures*. Users must refer to the relevant Safety Data Sheet(s). The flashpoints, hazard classifications and packaging sizes of the components and items are given in Table 1.

Table 1 Flashpoints and hazard classifications

Component	Flashpoint (C°)	Classification	Packaging size
Pro-BW Plus	33–34	Flammable, Harmful	10.3 litre tins
Pro-BW Pigment	100	Not applicable	0.6 and 0.9 kg packs(1)
Pro-Force 450	not applicable	Not applicable	17, 30 and 100 m^2 rolls
Pro-BW Catalyst	not applicable	Irritant, Oxidising	0.5 or 1 kg packs
Pro-Aggregate EM	not applicable	Not applicable	2.25 or 25 kg packs
Pro-BW Primer S	17	Highly flammable, Irritant	5 litre containers
Pro-BW Primer	22	Highly flammable, Harmful	5 litre tins
Pro-BW Metal Primer	45	Flammable, Harmful	5 litre tins
Pro-BW MMA Resin	35	Highly flammable, Irritant	10 litre tins
Mordant T-Wash	29	Flammable, Irritant	5 litre tins
Pro-BW Accelerator	33	Flammable, Harmful	1 litre tins
Pro-BW Primer Accelerator	22	Highly flammable, Harmful	0.5 litre tins

(1) The extra pigment is sometimes used to improve opacity of the top coat.

3.3 The Certificate holder has taken the responsibility of classifying and labelling the system components under the CLP Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures. Users must refer to the relevant Safety Data Sheet(s).

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Pro-BW Plus System.

Design Considerations

4 Use

4.1 The Pro-BW Plus System is satisfactory for use as a liquid-applied roof waterproofing system on new or existing flat, completely flat and sloped roofs with limited or pedestrian access in:

- inverted roof specifications
- protected warm and cold roof specifications, eg covered by pavers or other suitable protection
- green roof specifications
- exposed warm and cold roof specifications.

4.2 The system is suitable for use on the following substrates:

- concrete
- asphalt
- plywood(1)
- OSB 3(2)
- reinforced bitumen membranes (including sanded and mineral-surfaced felts)
- insulation(1)
- GRP
- single-ply membranes(2)
- previously-coated surfaces(2)
- small areas of metal incidental to the roof, eg pipe upstands
- small areas of plastic-coated metal incidental to the roof(1).

(1) Grades approved by the Certificate holder.
(2) The advice of the Certificate holder should be consulted on compatibility with the system.

4.3 For the purpose of this Certificate, limited access are defined as those subject only to pedestrian traffic for maintenance of the roof covering, cleaning of gutters, etc. Where traffic in excess of this is envisaged, special precautions, such as additional protection to the membrane, must be taken, for example, use of Pro-Aggregate EM or similar, incorporated into the final coat.

4.4 For the purpose of this Certificate, flat roofs are defined as those having a minimum finished fall of 1:80 (For design purposes, twice the minimum finished fall should be assumed unless a detailed analysis of the roof is available, including overall and local deflection, direction of falls, etc.); completely flat roofs are defined as those having a finished fall of less than 1:80; and pitched roofs are defined as those having falls in excess of 1:6.

4.5 Decks to which the system is to be applied must comply with the relevant requirements of BS 6229 : 2003, BS 8217 : 2005 and, where appropriate, *NHBC Standards* 2018, Chapter 7.1.

4.6 For green and inverted roofs, structural decks to which the system is to be applied must be capable of transmitting the dead and imposed loads experienced in service.

4.7 Dead loads and imposed loads for green and inverted roofs are calculated in accordance with BS EN 1991-1-1 : 2002 and BS EN 1991-1-3 : 2003, and their UK National Annexes.

4.8 The drainage system for green roofs must be correctly designed, and provision made for access for maintenance. Dead loads for green roofs could also be dramatically increased if the drains become partially or completely blocked, causing waterlogging of the drainage soil layers.

4.9 Recommendations for the design of green roof and roof garden specifications are available within the latest edition of the *GRO Green Roof code – Green Roof Code of Best Practice for the UK.*

4.10 In inverted roof specifications, the ballast requirements should be calculated in accordance with the relevant parts of BS EN 1991-1-4 : 2005 and its UK National Annex.

5 Practicability of installation

Installation of the system must be carried out only by specialist roofing contractors trained and approved by the Certificate holder.

6 Weathertightness



6.1 The system will adequately resist the passage of moisture to the inside of the building and so satisfy or comply with the relevant requirements of the national Building Regulations.

6.2 The system is impervious to water and, when used as described, will give a weathertight roofing capable of accepting minor movement without damage.

7 Properties in relation to fire



7.1 When tested to DD CEN/TS 1187 : 2012, Test 4, the following flat roof systems achieved a classification under BS EN 13501-5 : 2016 of B_{ROOF}(t4):

- a 6 mm calcium silicate board, one coat of Pro-BW Primer at 0.25 litres per m^2, one coat of Pro-BW Plus resin at 1.25 litres per m^2, a layer of Pro-Force 450 reinforcement and one coat of Pro-BW Plus resin at 0.50 litres per m^2
- a primed 19 mm orientated strand board, a self-adhesive vapour control layer, a 120 mm thick, foil faced polyisocyanurate insulation board bonded with a polyurethane adhesive, one coat of Pro-BW Plus resin at 1.25 litres per m^2, a layer of Pro-Force 450 reinforcement and one coat of Pro-BW Plus resin at 0.50 litres per m^2.

7.2 The membranes, when used in protected or inverted roof specifications, including an inorganic covering listed in the Annex of Commission Decision 2000/553/EC, can be considered to be unrestricted under the national Requirements.

7.3 The designation of other specifications, eg when used on combustible substrates, should be confirmed by:

England and Wales — test or assessment in accordance with Approved Document B, Appendix A, clause 1
Scotland — test to conform to Mandatory Standard 2.8, clause 2.8.1[(1)(2)]
Northern Ireland — test or assessment by a UKAS-accredited laboratory, or an independent consultant with appropriate experience.

7.4 In the opinion of the BBA, when used in irrigated roof gardens or green roofs, the use of the membrane will be unrestricted under the requirements of the national Building Regulations.

7.5 If allowed to dry, the plants used may allow flame-spread across the roof. This must be taken into account when selecting suitable plants for the roof, and appropriate planting, irrigation and/or protection should be applied to ensure that the overall fire-rating of the roof is not compromised.

8 Adhesion

The adhesion of the system to the substrates indicated in section 4.1 is sufficient to resist the effects of any wind suction, elevated temperatures, thermal shock or minor movement likely to occur in practice.

9 Resistance to mechanical damage

9.1 The system can accept, without damage, the limited foot traffic and light concentrated loads associated with installation, maintenance and pedestrian traffic on defined walkways. However, reasonable care should be taken to avoid puncture by sharp objects or concentrated loads.

9.2 Results of testing for dynamic and static indentation are given in Table 2.

Table 2 Dynamic and static indentation

Test	Result	Method
Dynamic indentation		
steel		
control (1)	I_4	
unaged at 10°C	I_2	EOTA TR 006
UV aged(2)	I_4	
UV aged(3)	I_4	
heat aged(4)	I_4	
Static indentation		
steel		
control (1)	L_4	EOTA TR 007
Unaged at 23°C	L_4	
water exposure (5)	L_4	

(1) Tested as received.
(2) UV aged using weather meter at an exposure of 800 MJm^{-2} UVA 50°C to EOTA TR 010.
(3) UV aged using weather meter at an exposure of 400 MJm^{-2} UVA 50°C to EOTA TR 010.
(4) Heat aged for 100 days at 80°C to EOTA TR 011.
(5) Water exposure for 180 days at 60°C to EOTA TR 012.

9.3 When used on fibre cement substrates, additional precautions must be taken to spread loads when carrying out maintenance work.

9.4 When used over construction and expansion joints, the system can accommodate the minor structural movement likely to occur in service.

10 Resistance to root penetration

The system will resist penetration by plant roots and can be used as a waterproofing layer in green roof specifications.

11 Maintenance



11.1 The system must be the subject of annual inspections and maintenance to ensure continued performance in line with good practice. Maintenance should include checks and operations to ensure that, where applicable:

- where used, protection layers are in good condition
- the exposed membrane is free from the build-up of silt and other debris and unwanted vegetation is cleared.

11.2 Green roofs and roof gardens must be the subject of regular inspections, particularly in autumn after leaf fall and in spring, to ensure that unwanted vegetation and other debris are cleared from the roof and drainage outlets (see section 4.8). Guidance is available within the latest edition of *The GRO Green Roof Code — Green Roof Code of Best Practice for the UK.*

11.3 Should a leak occur in the roof waterproofing it must be repaired following removal of the upper layers of the system. Correct reinstatement of these layers must be carried out with particular care and the advice of the Certificate holder should be sought.

12 Durability



12.1 The system will achieve an initial life expectancy, for an exposed roof, of at least 25 years. When fully protected and subjected to normal service conditions in an inverted roof specification with an open covering (eg aggregate pavers), the system can provide an effective barrier to the transmission of liquid water and water vapour for the design life of the roof in which it is incorporated.

12.2 In situations where maintenance or repair of any of the components in the roof structure are necessary (eg the protection layer or insulation), the durability of the membrane may be reduced. In these circumstances the Certificate holder should be consulted.

12.3 An estimation cannot be given for the life of green roof specifications owing to the nature of use; however, under normal circumstances, it should be significantly greater than for exposed waterproof coverings.

Installation

13 General

13.1 Installation of the Pro-BW Plus System must be carried out in accordance with the Certificate holder's instructions and this Certificate, only by specialist roofing contractors trained and approved by the Certificate holder in accordance with the Certificate holder's Installation Manual.

13.2 Application of the system is carried out at a minimum substrate temperature and an air temperature of 3°C stable (1°C with the use of accelerators), rising to a maximum air temperature of 30°C and a substrate temperature of 40°C. The system must not be installed in rain, snow, fog or misty conditions, or when the relative humidity is above 95%.

13.3 Detailing (eg upstands) must be carried out in accordance with the Certificate holder's instructions.

13.4 Soil or other bulk material must not be stored on one area of the roof prior to installation, to ensure that localised overloading does not occur.

14 Site and surface preparation

14.1 Substrates on which the system is to be applied must be properly prepared in accordance with the Certificate holder's instructions.

14.2 Adhesion to substrates depends on the condition and cleanness of the substrate. Substrates must be visibly dry, sound and free from loose materials or contamination (eg moss or algae). In cases of doubt, the advice of the Certificate holder's Technical Department should be sought.

14.3 Any areas of fungal growth or moss must be treated with an approved, proprietary anti-fungal solution to ensure that all spores are destroyed.

14.4 High-pressure sand-blasting or water-jetting may be used to remove loose or flaking materials and residues following treatment with the anti-fungal wash, but the substrate must be visibly dry before application of the system.

14.5 Damaged areas of the substrate (eg broken fibre-cement sheets or blistered bitumen roofing felt) must be removed, replaced or repaired.

14.6 Deck surfaces must be free from sharp projections, such as protruding fixing bolts or concrete nibs. The wash is allowed to react, and the surface conversion is indicated by a black deposit. The surface residue is washed off with water and dried prior to the application of the primer.

14.7 Gutters and outlets must be checked to ensure that they are, and remain, clear of all debris.

14.8 New galvanized steel and zinc substrates are treated with Mordant T-Wash at a coverage rate of 15 m^2 per litre. The wash is allowed to react and the surface conversion is indicated by a black deposit. The surface residue is washed off with water and dried prior to the application of the primer.

14.9 Metal substrates are primed using Pro-BW Metal Primer at a coverage rate of 5 to 10 m^2 per litre; rough or porous surfaces will significantly reduce coverage rate. The primer should be left to dry for a minimum of 2 hours and ideally between 8 and 24 hours to maximize adhesion. The maximum overcoating period is 14 days; after this period it may be necessary to rub down and/or re-prime the surface.

14.10 Other substrates are primed, using catalysed Pro-BW Primer at a coverage rate of 4 to 6 m^2 per litre. Porous surfaces should be visually checked to ensure an adequate seal and any suspect areas re-primed as necessary. The

primer is allowed to dry for at least one hour before overcoating. If the primed surface is left for longer than seven days before the application of the system, it is necessary to solvent wipe the surface with acetone prior to the installation of the waterproofing. The catalyst proportion for Pro-BW Primer S and Pro-BW Primer are given in Table 3 in respect of the surface/air temperature.

Table 3 Catalyst proportion for Pro-BW Primer S and Pro-BW Primer

Temperature (°C)	Catalyst addition (%)	
	Pro-BW Primer S	Pro-BW Primer
3-10	4-6	3-4
10-20	3-4	2-3
20-35	2	2

15 Application

15.1 The system is mixed on site by adding the pigment (if required) and then the catalyst to the resin in the correct proportions. The catalyst is added in the proportions given in Table 4 depending on the surface/air temperature and stirred in accordance with the mixing instructions.

Table 4 Catalyst proportion for Pro-BW Plus

Temperature (°C)	Catalyst addition (%)
3-10	4
10-15	3
15-20	2-3
20-30	2

15.2 One coat of Pro-BW Plus Resin is applied to all upstands, detailing, protrusions, cracks, joints, and stepped joints with adjoining dissimilar substrates, and reinforced with Pro-BW Taping Mat or pre-cut strips of Pro-Force 450 prior to the application of the main waterproofing. Pro-BW Plus Resin is allowed to dry before overcoating with the main waterproofing.

15.3 The application is normally in two coats. Depending on the substrate, the first coat of resin is applied at the rates given in Table 5, and Pro-Force 450 rolled out and laid with 50 mm side and end laps. The extra resin is immediately applied to achieve a closed, pinhole-free surface.

Table 5 First coat coverage rate(1)

Substrate	Coverage rate (litres per m^2)
Smooth concrete	1.25–1.30(2)
Plywood	1.25–1.30
Asphalt	1.25–1.30
Sanded felt	1.25–1.30
Mineral felt	1.50–2.00(2)
De-chipped felt/asphalt	1.50–2.00(2)
Single Ply	1.25–1.30
GRP	1.25–1.30
Metal	1.25–1.30
Insulation	1.25–1.30

(1) The rates given in the Table are indicative only and it is the contractor's responsibility to ascertain the rate used on the specific site.
(2) When applying to very rough, uneven or heavily mineralised surfaces, the coverage rate may be significantly reduced; this should be taken into account when estimating material usage.

15.4 The second coat of resin can be applied as soon as it is practical to do so. However, the maximum period between coats is seven days, after which it is necessary to clean the surface with acetone allowing a further seven days, application time. The coverage rate for the second coat is 0.5 litres per m^2.

15.5 Joints subjected to excessive movement may require the use of Pro-BW MMA Resin as an alternative bridging material; the Certificate holder should be consulted for advice.

16 Repair

Should minor damage occur, it can be rectified by cleaning back to unweathered material, reactivating the surface and applying the Pro-BW Plus system to the damaged area at the total application rate stated in sections 14 and 15.

Technical Investigations

17 Tests

Tests were conducted on samples of the Pro-BW Plus System and ancillary products, and the results assessed to determine:

- tensile strength and elongation on control, heat aged(1) and UV aged(2) samples
- tensile adhesion on control, heat aged(1) and after water exposed(3) samples
- resistance to fatigue on control and after heat ageing(1)
- resistance to dynamic impact on control, hard and soft substrates and on a hard substrate at –10°C on a control, after heat ageing(1) and UV ageing(2)
- resistance to static indent on control hard and soft substrates and on a hard substrate at 80°C on a control and after water exposure(3).

(1) Heat aged for 200 days at 70°C.
(2) UV aged at 1000 $MJ \cdot m^{-2}$ UV-A.
(3) 180 days of surface water exposure at 60°C.high service temperature properties.

18 Investigations

18.1 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

18.2 Visits were made to a site in progress to assess the practicability of installation.

18.3 Data on fire performance were evaluated.

Bibliography

BS 6229 : 2003 *Flat roofs with continuously supported coverings — Code of practice*

BS 8217 : 2005 *Reinforced bitumen membranes for roofing — Code of practice*

BS EN 1991-1-1 : 2002 Eurocode 1 : *Actions on structures — General actions— Densities, self-weight, imposed loads for buildings*
NA to BS EN 1991-1-1 : 2002 UK National Annex to *Eurocode 1 : Actions on structures — General actions— Densities, self-weight, imposed loads for buildings*
BS EN 1991-1-3 : 2003 *Eurocode 1 : Actions on structures — General actions — Snow loads*
NA to BS EN 1991-1-3 : 2003 UK National Annex to E*urocode 1 : Actions on structures — General actions — Snow loads*
BS EN 1991-1-4 : 2005 *Eurocode 1 : Actions on structures — General actions — Wind actions*
NA to BS EN 1991-1-4 : 2005 UK National Annex *to Eurocode 1 : Actions on structures — General actions — Wind actions*

BS EN 13501-5 : 2016 *Fire classification of construction products and building elements — Classification using data from external fire exposure to roofs tests*

DD CEN/TS 1187 : 2012 *Test methods for external fire exposure to roofs*

EOTA TR 006 *Determination of the resistance to dynamic indentation*

EOTA TR 007 *Determination of the resistance to static indentation*

EOTA TR 010 *Exposure procedure for artificial weathering*

EOTA TR 011 *Exposure procedure for accelerated ageing by heat*

EOTA TR 012 *Exposure procedure for accelerated ageing by hot water*

Conditions

1. This Certificate:

- relates only to the product that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

2. Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

4. The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

5. In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product or any other product
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product
- actual installations of the product, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to UKCA, UKNI or CE marking.

6. Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.

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