

PROTEC SYSTEM

TECHNICAL DATA SHEET

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POLYROOF
ADVANCED LIQUID ROOFING

Part of
**Roberts
Group**

Introduction

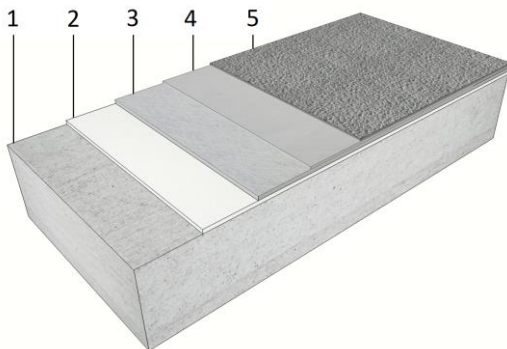
Protec is our most popular and versatile roofing system. The system carries BBA and ETA certification (CE Marked) and is available with FM Approval.

Protec's liquid roof membrane has a unique flexible hybrid polymer formulation and can be applied to virtually all common roof surfaces. Where new insulation is required, the fully bonded Protec Warm Roof system provides a simple, economical and cost effective warm roof design. Protec is ideal for all types of flat roofs, walkways and terraces, inverted, green, brown and blue roofs.

Key Features

- Ultra-Versatile Waterproofing Solution
- Flexible and Tough Membrane
- *RapidCure* Technology
- Seamless Waterproof Membrane
- Cold Applied Installation with Zero Risks from Hot Works
- Ideal for Overlays or New Roofs
- B_{ROOF}(t4), Fire Performance
- BBA, FM & ETA Third Party Certifications

Typical System Build Up



1. Substrate
2. Primer (as required)
3. 1st Coat Protec Resin and Polymat 450 Reinforcement
4. 2nd Coat Protec Resin
5. Optional Anti-Slip System

Colours & Finishes

Protec is available in three standard colours.



Optional mineral slate, quartz sand and Polyfinish anti-slip finishes are available.



* For other colours/finishes consult Technical Services.

Certification

Protec is BBA approved (Cert No. 09/4676) and ETA Certified (ETA-20/0914) with CE marking, with a certified lifespan of at least 25 years.



Protec System
 ETA (20/0914)

Protec is also available with FM Approval. (Contact technical services for further details)



Fire Classification

Can achieve classification of B_{ROOF}(t4), the top rating achievable for a flat roof system and designating Protec as unrestricted under the national requirements.

Physical Properties

Test	Result
Thickness (mm)	2.0mm
Weight / m ²	2.73kg / m ²

Foot Traffic / Mechanical Impact

Test	Method	Result
Static indentation	EOTA TR 007	L4
Dynamic Indentation Concrete Unaged	EOTA TR 006	
UV aged (1)		I ₄
Insulation Unaged		I ₄ I ₂

(1) The test documents are detailed in the Bibliography. Numbers in the table refer to the sections/parts of the various documents.

Root Penetration

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

Durability / Maintenance

The system has a BBA durability rating of at least 25 years. The system does not require any ongoing maintenance by the manufacturer, however standard biannual inspections and standard flat roof maintenance, good practice should be followed by clients as recommended in BS6229.

Packaging

Product	Pack Size	Code
Protec Resin – Light Grey	10 litre	121007
Protec Resin – Quartz Grey	10 litre	121103
Protec Resin – Chromite Grey	10 litre	121109
Protec Resin – Un-Pigmented	10 litre	121006
Protec Accelerator	1 litre	121201
Protec Inhibitor	105g	121206
Polyroof Pigment	0.6 kg	103(RAL)
Polyroof Powder Catalyst	1 kg	102003
Polymat 450	17m ²	104003
Polymat 450	30 m ²	104016
Taping Mat 450 (75mm)	110 lm	104004
Taping Mat 450 (300mm)	18 lm	104021
Uni-Primer DP	5 litre	158101
Uni-Primer DP Accelerator	0.5 litre	158103
SP Primer 202	1 litre	122006

Polyroof Metal Detailing Primer	250ml x 6	122067
Mordant T-Wash	5 litre	122007
Polyfinish – Dark Grey	9.6 litre	130011
Polyfinish – Light Grey	9.6 litre	130010
Polyfinish – Clear	10.3 litre	130017
Quartz Sand*	25 kg	109060
Green Mineral Slate Grit	15 kg	109046
Blue Mineral Slate Grit	15 kg	109049

*A wide range of coloured aggregates are available for use with Polyfinish – Clear. Please contact Polyroof Technical Services for further information.

Shelf Life / Storage

Shelf life 12 Months for Protec. This is based on unopened containers stored in dry, frost-free conditions away from heat.

Health & Safety

Workers should wear appropriate PPE as detailed in the safety data sheet. Safety Data Sheet available on request.

Specifying the System

Polyroof offer a free specification service. It is recommended that Polyroof Technical Services are contacted to provide specific advice on any project.

Application

The system must only be applied by contractors who have been trained and approved by Polyroof and have a valid contractor's certificate.

Temperature

The system may be applied between 3°C and 30°C (1°C and 30°C with Protec accelerator). The system must not be applied in damp or cold conditions which could cause surface condensation; during frost or if there is a risk of rain.

Equipment

Apply using a Medium Pile Roller or Brush.

Preparation

All surfaces to be coated (including any coatings, repairs or test areas) are to be inspected and made good where required to provide a sound substrate for the new waterproofing system.

All areas must be clean dry and free from contaminants such as dust, oil, grease, organic growth, sand and free from corrosion, laitance etc.

Specific guidance should be sought for any unidentified coatings such as solar reflective paint or any unidentified single ply membranes. Adhesion tests may be required.

Any unsound, loose or flaking material should be removed by mechanical means back to a sound surface.

Areas where the insulation or underlying substrate has collapsed or is defective or decayed, should be cut out, repaired and reinstated on a like-for-like basis to provide a good solid base for the coating system.

New galvanized steel and zinc substrates are treated with Mordant T-Wash at a coverage rate of 15 m² 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.

*For timber decks OSB3/Plywood consideration should be given to the use of SA Carrier Layer. If direct application to timber decks is required, consult Polyroof for detailed specification regarding suitable grades of OSB3/Plywood and treatment of board joints using Polybase.

For full guidance on preparation of substrates please refer to the Protec Manual or contact Polyroof Technical Services for advice on 0800 801 890.

Priming

The requirement for a primer will be dependent on the substrate. It is recommended Polyroof Technical Services are contacted for advice on 0800 801 890.

SURFACE	PRIMER
Polyroof SA Carrier layer	No primer required as standard

Felt Asphalt Concrete Timber* Polyroof RES Balcony Insulation (T&G)	Uni-Primer DP at an approximate coverage rate of 4-6m ² /litre. Allow to cure.
Metal Surfaces (Detailing Only)	Polyroof Metal Detailing Primer at an approximate coverage rate of 50-150ml/m ² . Allow to become touch-dry.
Single-Ply	SP Primer 202 at an approximate coverage rate of 12-15m ² /litre. Allow to cure.
*Note: Adhesion tests are required to confirm compatibility and priming requirements. Consult Polyroof Technical Services for further guidance.	
IMPORTANT For cure times of primers refer to Primer TDS or Manual	

Summer Inhibitor

Protec Summer Inhibitor extends the pot-life of the Protec Resin which is invaluable when temperatures are high during the summer months. The Protec Inhibitor can be added to Protec Resin on site prior to use. It should only be added as temperature ranges permit.

IMPORTANT: Protec Inhibitor is not designed as a replacement for the catalyst. After the Protec Inhibitor has been added, you will still need to add the powder catalyst (at the minimum rate of 2%) before you use the product.

Add a full tin of Protec Inhibitor in to a full tin of resin and stir thoroughly (taking care to ensure the full contents are transferred). Mix thoroughly to ensure that the Protec Inhibitor is evenly distributed in the resin. You may use a light mechanical mixer if required (EPI Mixer or similar).

Once the Protec Inhibitor is mixed into the resin you can pour into smaller quantities if required e.g. 5 or 2 litres (Sometimes useful if you are unsure how much working time you have).

Only when you are ready to use the product should you add the catalyst powder.

Winter Accelerator

Protec winter accelerators may be required for winter / low temperature applications. Winter accelerators speed up cure and allow product to be laid at lower temperatures than standard resin (down as low as 1°C deck temperature). The accelerators are contained in an additive that can be added to standard resin products on site prior to use. They should be added only as temperature ranges permit.

IMPORTANT: Accelerators are not designed as a replacement for the catalyst. After the Protec accelerator has been added, you will need to add the powder catalyst (at the maximum rate of 4% in cold conditions) before you use the product.

Add a full tin of accelerator in a full tin of resin and stir thoroughly. Mix thoroughly to ensure that the accelerator is evenly distributed in the resin. You may use a light mechanical mixer if required (EPI Mixer or similar).

Once the accelerator is mixed into the resin you can pour into smaller quantities if required e.g. 5 or 2 litres (Sometimes useful if you are unsure how much working time you have).

Only when you are ready to use the product should you add the catalyst powder

Catalyst

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 the table below depending on the surface/air temperature, and stirred in accordance with the mixing instructions.

Temperature	Catalyst Addition Rate	Scoops per Litre
3°C-10	4%	4
10°C -15°C	3%	3
15°C -20°C	2%-3%	2-3
20°C -30°C	2%	2

Catalyst proportion for Uni-Primer DP

Temperature	Catalyst Addition Rate
Uni Primer DP	
3°C -10°C	3%-4%

10°C -20°C	2%-3%
20°C -35°C	2%

Local Reinforcements / Detailing

Protec may be applied to suitable existing detailing subject to preparation and (where necessary) priming. Alternatively, a range of Pre-formed Polyroof GRP trims may be used.

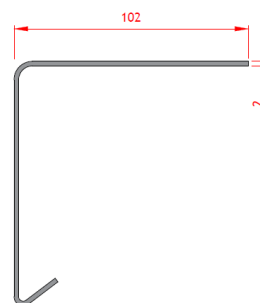
All detailing (including any GRP Trims) should be locally reinforced with Protec Resin and PolyMat 450 reinforcement prior to application of main system.

There are special requirements for taping board joints on OSB3/Plywood. Consult Polyroof for specification using Polybase.

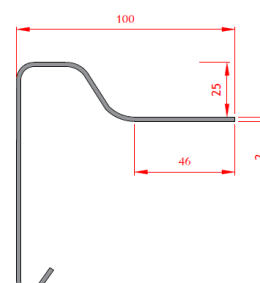
Trims

Optional Preformed Trims

The Polyroof range of rigid GRP trims offer a fast, reliable way of installing finishing trims and ensuring perfect detailing. These trims are optional as, in many cases, the existing detailing can be retained. A wide range of trim profiles exist. Consult Polyroof with specific requirements.



Typical Drip Trim



Typical Upstand Trim

Main System / Coverage Rates

Apply 1st coat of Protec Resin and Polymat 450 in accordance with coverage rates table below:

1st Coat (with PolyMat 450)
Smooth Surfaces: 1.3-1.5 Litre / m ²
Rough / De-Chipped Surfaces: 1.5-2.0 Litre / m ²

Apply 2nd coat of Protec Resin using Polyroof rollers in accordance with coverage rates table below:

2nd Coat
0.5 Litres / m ²

Important: All coverage rates are indicative only and it is the contractors' responsibility to ascertain the exact coverage rates on site. Coverage will always vary depending on substrate and the environment. Additional materials over and above this will be required to any areas that require local reinforcements, detailing etc.

Main System Cure Time (Per Coat)

Typically 45mins - 1 hr

(Incorporating Protec Accelerator and catalyst as required)

Anti-Slip Finish (Optional)

Note - The following should be carried out upon completion of the application of the full Protec waterproofing system. Please note that there is a maximum over coating time of up to 7 days. After this period cleaning with Acetone will be required allowing another 7 days over coating time.

Maintenance Walkways

Mask off the perimeters of the walkway / roof to provide a neat termination of the anti-slip finish. Ensure masking tape is removed whilst resin is still wet.

Apply addition coat of Protec Resin at a minimum coverage rate of 0.5Litres/m² (2.0m²/Litre) and whilst wet broadcast Mineral Slate Grit at a minimum coverage rate of 2.5kg/m². Once cured remove loose grit. Approximate finished coverage rate of grit will be 1.5kg/m² and the remaining grit may be recovered for future use

Heavily Trafficked Areas

Mask off designated area.

Apply additional coat of Protec Resin at a minimum coverage rate of 0.5Litres/m² (2.0m²/Litre) and whilst wet broadcast clean dried quartz sand (0.7 - 1.2mm) at an approximate coverage rate of 4.0kg/m². Once cured remove loose sand. Approximate finished coverage rate of sand will be 2.5kg/m² and the remaining 1.5kg may be recovered for future use.

Prior to the application of Polyfinish Resin re-mask off a 50mm margin around the perimeters of the roof. Ensure masking tape is removed whilst resin is still wet.

Apply Polyfinish Resin at a minimum coverage rate of 0.6Litres/m² (1.67m²/Litre). Allow to cure.

Cleaning

All tools should be cleaned with Acetone immediately after use.

Additional Information

Roof Construction

Consideration should be given to the type of roof construction to which the system is to be applied.

These can be broadly categorised as:

- Direct overlays
- Warm roofs
- Inverted roofs

General

Protec is suitable for both refurbishment and new build applications. The design of the roof to which the Protec system is to be applied should be in accordance with the relevant regulations, codes and good practice. Insulation may be incorporated as necessary.

Substrates

The system can be applied to a range of substrate types including built up felt, concrete, asphalt, approved OSB3*, approved plywood*, GRP, and single ply. The level of preparation and priming requirements will vary depending on the substrate type. Adhesion tests are recommended for single ply, solar reflective paint and other unidentified coatings or surfaces.

*Consult Polyroof Technical Services for a list of suitable grades.

Direct Overlays

Suitable for refurbishment or new build projects where insulation is not required. Existing roofs must be structurally sound and should comply with current building regulations.

Warm Roofs

Suitable for new constructions or upgrade of existing roofs to meet current building regulation standards.

Protec is the ideal system for warm roof applications and is equally suited for both new build and refurbishments. An Air & Vapour control layer must always be provided prior to installation of rigid insulation boards and carrier layer and care should be taken to ensure the roof achieves the required U-value in

accordance with current building regulations standards.

Inverted Roofs

Suitable for new build or refurbishment projects to meet current building regulation standards.

Inverted roof applications (also known as upside down or protected membrane roofs) are where the waterproofing layer is applied directly to the structural deck. The Protec system is ideal for inverted roofs and can be applied rapidly to existing or new decks. Decks should be capable of accepting the loading of ballast. Inverted roofs have the advantage of keeping the waterproofing membrane protected at all times and also and eliminate the need for mechanical fixings.

Lead and Standing Seam Reproduction

Protec lead roll and standing seam finishes are used on new build or refurbishment projects to reproduce the look of lead or standing seam at lower cost whilst also removing the risk of theft.

The simulations are formed using pre-formed fibreglass trims. Various levels of reproduction colours and finishes are available to reproduce the look of lead or oxidised copper.

Green Roof Systems

The Protec membrane provides an ideal waterproofing solution for use in green roof systems as it is flexible enough to easily accommodate structural movements as well as being lightweight and extremely durable.

Disclaimer

This datasheet is for general information only. Installers must refer to the application manual for full installation guidance.

Polyroof Products reserve the right to amend product specifications without prior notice. The information provided in this literature is given in good faith. Recommendations for use should be verified to ensure compliance with all current building regulations and standards. Please check that this data sheet is the latest version by contacting technical services on 0800 801890 or visiting www.polyroof.co.uk.

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