

PROTEC



ADVANCED LIQUID ROOFING SYSTEMS



PRODUCT INFORMATION & DESIGN GUIDE

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NOT THE SYSTEM YOU'RE LOOKING FOR?

Protec is part of our range of liquid applied roofing systems.

If you're not sure which is the best system to use, refer to our Product Selector or phone 0800 801 890.

RELATED BROCHURES

- POLYROOF 185** (GRP System)
- ELASTEX** (Overlay)
- EBS** (Balconies)
- ROOFCOAT PLUS** (Overlay)
- ROOFCOAT** (Repairs)
- PRODUCT SELECTOR**

MINERAL FINISH (OPTIONAL)

To provide anti-slip surface if required.

PROTEC RESIN

REINFORCEMENT

Reinforcing mat offers strength plus excellent elongation properties.

PROTEC RESIN

Highly durable and flexible resin. Single coat application.

PRIMER

EXISTING SUBSTRATE OR NEW TIMBER



PROTEC

■ COLD APPLIED ■ SINGLE COAT ■ 10 YEAR

TECHNICALLY ADVANCED OVERLAY SYSTEM

Protec is a cost-effective, single coat, fast curing polyester overlay system that is ideal for new roofs, for extending the life of existing roofs and for rehabilitating gutters. This tough membrane provides a resilient long lasting barrier to water penetration. The flexibility of the system easily accommodates surface movement and it is resistant to occasional foot traffic and UV degradation.

Protec is the ideal refurbishment system for any size of roof and can be applied to a variety of roof surfaces, including built-up felt, concrete, and asphalt. The system can also be used in conjunction with a new timber deck, which allows the product to be used for applications such as new build, deck replacement, or warm roof upgrades.

It is effective on complex areas such as valley gutters, extraction units, coping stones and parapet walls. In most cases there is no stripping of the old roof, therefore Protec is ideal for projects that require a fast solution with minimum disruption. It is cold applied and rapidly becomes weather resistant, providing high levels of UV protection. Suitable for both warm and cold roofs, flexible Protec can also withstand maintenance foot traffic, and through the addition of various aggregates, provide an anti-slip surface.

- For waterproofing flat roofs and gutters
- Refurbishment or new build applications
- Single coat suited to large or small projects
- Minimal disruption
- Quickly weather resistant
- Seamless cold liquid applied membrane
- Durable finish
- Choice of colours including a slate finish
- 10 Year Guarantee



PROTEC IS COLD APPLIED FOR SPEED AND SAFETY

Like all Polyroof systems, Protec is cold applied so there is minimum disruption, without the fire and safety risks associated with conventional systems that rely on boilers and exposed flames. Indicative tests also show that the system achieves FAA rating (to BS476 : Part 3).

GUARANTEES

Protec is fully backed with a 10 year manufacturer's guarantee. All work is carried out by a network of fully accredited Polyroof contractors. Polyroof Products Limited is an ISO 9001:2000 approved company.



GUARANTEE ■ MINIMAL DISRUPTION ■ COST EFFECTIVE ■ SEAMLESS

FOR SPECIFICATION ADVICE CALL THE TECHNICAL HELPLINE ON 0800 801 890

APPLICATIONS

OVERLAY APPLICATIONS

During refurbishment, care should be taken that existing roofs have sufficient insulation and condensation control. Advice on warm and cold roof designs can be found in BS5250. The main types of substrates encountered in flat & low-pitched roof refurbishment are:

Asphalt

All areas to be treated should be thoroughly cleaned and a fungicide used if fungal growth or moss is present. Any blistered or slumped areas of asphalt should be made good. Should removal be required, replace with a suitable repair compound. Allow repairs to cure prior to the system application.

Built-up Felt

Chippings should be stripped and removed from site. All areas to be treated should be thoroughly cleaned and a fungicide used if fungal growth or moss is present. Areas of badly damaged or decayed felt should be replaced to provide a sound substrate for the system. Loose or de-bonded felt must be made good. Any blisters should be made good by star cutting and re-bonding to the substrate. Allow to dry out before re-fixing. Primer may be required, consult Polyroof Products Technical Department for advice 0800 801890.

Liquid applied Polyesters and GRP

Thoroughly clean down all areas to be treated. Wipe surfaces using Surface rejuvenater*.

Other Surfaces

Consult Polyroof Products Technical Department for advice.

GUTTER REFURBISHMENT APPLICATIONS

Protec is the ideal seamless membrane to line existing box and valley gutters due to its flexibility and resistance to standing water.

* Consult Primer Data Sheet. Tel: 0800 801 890 or visit www.polyroof.co.uk



Concrete Gutters (Finlock)

Clean out and remove debris and dirt from the gutters and water outlets to be treated, and ensure free drainage. Remove any existing, loose or poorly adhering materials and repair where appropriate and then treat with a fungicidal wash* to kill off any moss or fungal spores left in the gutters. Remove all residues and apply Primer*.

NEW BUILD / DECK REPLACEMENT / WARM ROOF APPLICATIONS

Timber

A new timber deck is to be provided to BS 5268-2:2002 (EN13986 Structural 2+). Typical example is 18mm finnforest Plywood Spruce Grade II/III. Boards to be staggered (brick pattern) with long edges 90° to joists, with 3mm gaps between boards and 20mm at wall abutments. End joints to be centred over joists. Roofs in excess of 100m² require a specification from the Polyroof technical department. New structural deck to be mechanically fixed to a sound structure using appropriate corrosion resistant timber, masonry or metal fixings. Fixing heads must always be countersunk into the decking.



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DESIGN CONSIDERATIONS

ROOF DESIGN

The design of the roof or gutter to which the Protec system is to be applied should be in accordance with the relevant regulations codes and good practice existing at the time of construction. Since the Protec system is designed primarily as an overlay membrane for existing constructions, care should be taken to ensure that the existing construction is structurally sound and is unaffected by problems such as condensation.

PREPARATION

This varies depending on the substrate type and the condition. In general all areas need to be thoroughly cleaned to remove all dirt and debris, mould growth, moss, etc. A fungicidal wash may also be required. Any loose or flaking material must be removed and any defective areas made good or replaced before primer is applied. Certain metals will require abrasion or pre-treatment, before application of the required primer. Adhesion tests are recommended for solar reflective coatings or other unidentified coatings or surfaces. New decks must be timber panel to a structural grade BS 5268-2:2002 (EN13986 Structural 2+). It is strongly recommended that Polyroof Products Technical Services are consulted at an early stage in the design process to determine exact preparation and priming required for any particular contract.

FALLS

When applied to existing substrates no changes to falls are usually necessary. Standing water is not detrimental to the Protec system, but where it is seen as a problem - particularly if the area is to be accessed - then cut to falls insulation or timber firrings and plywood can be used. The minimum fall recommended by the relevant British Standard code of practice is 1 in 80, although a design fall of 1 in 40 is commonly adopted to provide a construction tolerance. These guidelines also apply to new builds.

PROTRUSIONS

The system can be moulded to suit penetrations such as soil pipes, stanchions or machinery fixing positions.

EXPANSION AND CONTRACTION

Protec laid in accordance with specifications, will withstand normal building movement.

PRE-CONTRACT APPROVAL

Roof specifications over 100m² require approval from Polyroof Technical Services before the contract begins.

WALKWAYS / TRAFFIC

Protec is available with a slip resistant finish that is suitable for light maintenance foot traffic. Please note that, although the surface finish is slip resistant, it cannot possibly eliminate all risk of slipping. This is particularly relevant in the event of ice forming on the roof surface. If regular foot traffic is a requirement, please consult Polyroof Products for advice on additional surface protection or details of our specialist balcony / walkway systems.

DRAINAGE

Advice on roof drainage is given in code of practice BS.6367. Protec is compatible with most standard rainwater outlets.

PRODUCT DATA

PROPERTIES IN RELATION TO FIRE

Indicative tests show that the system achieves EXT FAA in accordance with BS476 Part 3.

WEATHERTIGHTNESS

Test data confirms that the system will adequately resist the passage of moisture to the inside of the building and so meet the requirements of the National Building Regulations.

RESISTANCE TO WIND UPLIFT

Protec is a fully bonded system. Resistance to wind uplift is adequate to meet the effects of likely wind suction.

DURABILITY

The Protec System has a minimum durability rating of 10 years.

STANDARDS COMPLIANCE

Systems and components are produced to ISO 9001:2000 quality standards.

COLOUR

Protec is available in a range of five standard BS 4800 colours. Non-standard colours are available on request.



For technical reasons connected with the colour printing process these colours may not precisely match the topcoat colour.

OVERLAY SYSTEMS

Overlay systems offer an alternative to the complete replacement of existing flat roofs, as they minimise disruption and in most cases keep the building fully operational during the refurbishment.

An overlay system is usually considered when the existing roof covering is showing early signs of breakdown: e.g. a felt roof where bubbles or blisters are starting to appear, or a single ply or gutter installation where seams or joints are beginning to fail. The condition of the existing roof largely determines the required level of preparation.

Most common roof coverings can be overlaid but care should be taken to ensure that the existing underlying substrate is sound and of reasonable quality.

We recommend that a site survey is carried out by Polyroof Technical Services if there is any doubt about the condition of the substrate. Existing detailing is usually retained, but new detailing can be integrated into the system if required.

It is advisable that, where possible, the whole area is overlaid rather than carrying out localised repairs. This ensures that the system is completely seamless throughout and offers a fully guaranteed solution. Localised repairs are, of course, possible if a short-term solution is required.

Overlay systems should not be considered a ‘cure-all’ for a badly designed roof, care should always be taken to ensure that any underlying problems are first addressed - such as condensation or poor insulation values – before work begins. Advice on upgrading to a warm roof design can be obtained from Polyroof Technical Services.

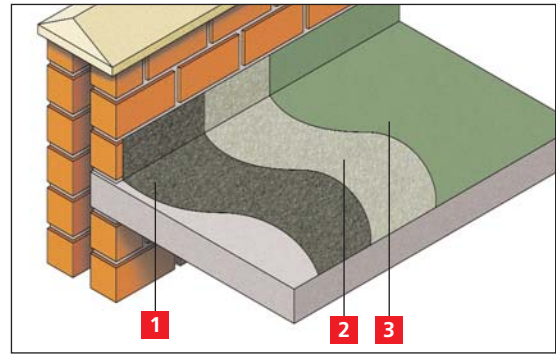
DECK REPLACEMENT WORK / WARM ROOF UPGRADES

Where the existing roof decking is found to be in poor condition, it will not be possible to use an overlay system. The roof deck should be stripped and replaced with a structural grade timber panel to BS 5268-2:2002 (EN13986 Structural 2+). Where the roof is over a dwelling or other building that is heated, a warm roof upgrade may be required. The new roof should be reconstructed to part L building regulations standards and insulation provided accordingly to meet required U-Values. Further advice regarding this subject can be obtained from Polyroof Technical Services

NEW BUILD

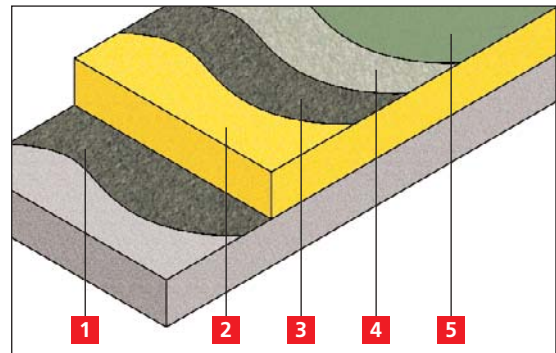
Protec may be used in new build situations. A structural timber deck must be provided to BS 5268-2:2002 (EN13986 Structural 2+). The new roof should also meet the thermal performance requirements of part L of the building regulations. Further advice and specification information regarding new build work may be obtained from Polyroof Products Technical Services.

TYPICAL BUILD-UP



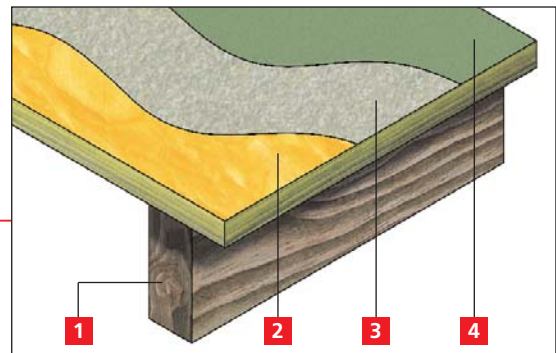
- 1 Existing prepared substrate
- 2 Mat reinforcement
- 3 Protec system

INSULATED DECK



- 1 Existing substrate made good to form VCL or new metal lined felt VCL
- 2 Rigid urethane insulation core
- 3 Felt prepared and primed to form VCL
- 4 Mat reinforcement
- 5 Protec system

TIMBER PANEL SUBSTRATE



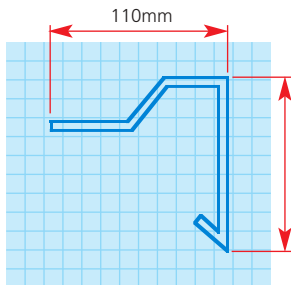
- 1 Timber joist
- 2 Plywood
- 3 Mat reinforcement
- 4 Protec system



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OPTIONAL PRE-FORMED COMPONENTS

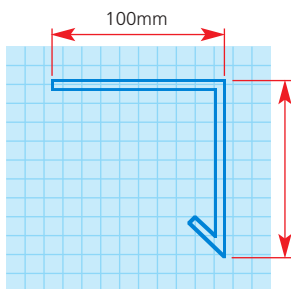
The Polyroof range of rigid GRP trims offers a fast, reliable way of installing finishing trims and ensuring perfect detailing. These trims are optional as, in many cases, the existing detailing can be retained. A wide range of non standard profiles exists. Consult Polyroof with your specific requirements.



UPSTAND FASCIA TRIMS

Butt strap required

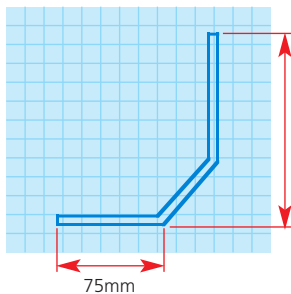
Available in lengths:
100mm
125mm
175mm



DRIP TRIMS

Butt strap required

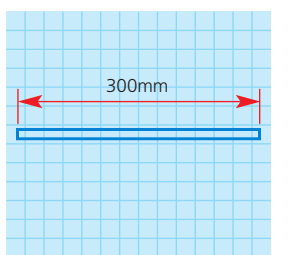
Available in lengths:
75mm
100mm
150mm



FILLET TRIM

Butt strap not required

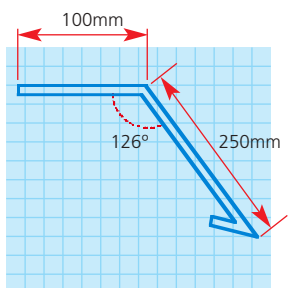
Available in lengths:
150mm
250mm
350mm
400mm



FLAT TRIMS

Butt strap not required

Available in 300mm lengths:



MANSARD TRIMS

Butt strap required

Available with internal angles:
126°
145°
155°
NB. 155° has external length of 300mm

Polyroof pre-formed GRP Trims have a nominal thickness of 2.15mm and are supplied in 2.441m lengths. NB. Drawings are not to scale.

PHYSICAL PROPERTIES

COMPOSITE		
TEST UNITS	MEAN RESULT	METHOD
Thickness	1.5mm	
Tensile strength	58 (MPa)	(Nmm ⁻²) (ISO 3268)
Elongation	1.7%	(ISO 3268)
LOI	24.1% O ²	(ISO 4589)
Hardness	67	(Shore A)

CAST RESIN		
TEST UNITS	MEAN RESULT	METHOD
Tensile strength	7.0	(ISO R527)
Tensile Modulus	2.1	(ISO R527)
Elongation	70%	(ISO R527)

LIQUID RESIN		
TEST UNITS	MEAN RESULT	METHOD
Specific Gravity	1.32	(ISO 2811)
Viscosity	200 mPa.s	(ISO 3219)
Thixotropic Index	4.2	(ISO 9219)
Gel Time (25°C)	13.5 mins	(BS 2782.835c)



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TYPICAL LIQUID SUPPLIED COLD ROOF COATING SPECIFICATION

TYPICAL NBS SPECIFICATION FOR OVERLAY OF BUILT-UP FELT ROOF

DRAWING REFERENCE(S):

N/A

BASE (SUBSTRATE FOR COATING):

Built up Felt.

PREPARATION:

It is advised that the Polyroof contractor consults Polyroof Technical Department (0800) 801890 for advice on detailing and preparation prior to commencement of contract.

IMPORTANT - if any areas of aluminium solar reflective paint or unidentified coatings are present, adhesion tests may be required.

Make good existing felt.

Star cut blisters, dry out and re-bond. Cut back to base badly cracked and defective areas of felt where instructed. Dry out base and patch level with existing surface with layers of matching felt lapped not less than 100 mm onto existing felt.

Where required, use biocidal wash.

After cleaning down and making good existing coverings, apply a biocidal solution recommended by coating manufacturer to all areas previously subject to organic growth. Allow to dry.

Powerwash roof areas.

To provide a contamination free surface for coating application, clean all areas using a water jet and allow to dry.

WATERPROOF COATING:

Liquid Applied Polyester Overlay System.

MANUFACTURER:

Polyroof Products Ltd. Furness House,
Castle Park Industrial Estate, Flint,
Flintshire CH6 5XA
Tel: 01352 735135
Fax: 01352 735 182
Email: Info@polyroof.co.uk
Web: www.polyroof.co.uk

PRIMER REFERENCE:

Polyroof PU Primer.

COATING SYSTEM REFERENCE:

Polyroof Protec System.

APPLICATION:

Laid by Polyroof Approved Contractor in accordance with Polyroof Products Ltd Instructions.

Coverage Rates below are indicative and will depend on porosity / surface roughness. Contractors should visit site to ascertain coverage rates – consult Polyroof Products Technical Services for advice (0800) 801890.

Protec Resin: 1.6 - 1.8 litres/m² (0.55 - 0.63m²/litre)

Protec System must be fully reinforced using Protec Mat reinforcement.

REINFORCEMENT:

Protec Mat Reinforcement.

MINIMUM DRY FILM THICKNESS:

> 1.5mm

SURFACE PROTECTION:

Maintenance Foot Traffic

No additional surface protection required, however a slip resistant finish can be applied (consult Polyroof Technical Department for advice).

Regular Foot Traffic

Consult Polyroof Technical Department for details on protection or alternative Polyroof systems.

ACCESSORIES:

Polyroof Pre-formed GRP Trims (if required).



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DESIGN DETAILING

RAINWATER OUTLET

- Existing substrate
- Reinforcement
- Protec membrane
- Rainwater outlet

Note: The Protec system should be dressed into the outlet as far practicable.

ROOF-LIGHT UPSTAND

- Existing substrate
- Reinforcement
- Protec membrane
- Roof-light

Note: On new build it is preferable to use proprietary roof lights incorporating a GRP upstand wherever possible. GRP upstand to be abraded prior to laminating direct.

ALUMINIUM TRIM DETAILING

- Existing substrate
- Reinforcement
- Protec membrane
- Aluminium trim
- Protec reinforced at joints

Note: Aluminium trims to be wiped with Protec surface rejuvenator abraded and metallic primed. Protec to be applied same day as primer.

PIPE DETAIL

- Existing substrate
- Reinforcement
- Protec membrane
- Additional reinforcement
- Weathering flange/seal

Note: A flashing detail should be created with a weathering flange/seal.

CONCRETE FINLOCK GUTTER

- Additional reinforcement to joints
- Reinforcement
- Protec membrane
- Concrete Gutter

Note: Refer to preparation notes on page 4.

WELTED DRIP

- Existing substrate
- Reinforcement
- Protec membrane
- Welled drip

Note: Alternatively, if drip is in poor condition this may be replaced with a Polyroof GRP trim.

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A NATIONWIDE NETWORK OF COMPANY TRAINED TECHNICIANS

Polyroof is only supplied to and installed by contractors fully application trained and licensed by the company, to ensure consistent quality of installation. Contractors' performance is regularly monitored and random inspection of installations carried out. Failure to comply with the Company's stringent standards leads to withdrawal of certification.

QUALITY CONTROL

Polyroof Products Ltd operates comprehensive and rigorous quality control procedures in accordance with ISO 9001:2000

The scope of this approval includes the design and installation of roofing systems, the provision of technical support, as well as the appointment and monitoring of installers.

Not only is the manufacture of Polyroof liquid applied roofing systems and accessories quality approved, but so too is the procurement, storage and supply of all related materials and consumables.

GUARANTEES

A ten year manufacturer's guarantee is available, subject to specification. Insurance backing available, please call 0800 801 890 for details.



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The only contract which Polyroof will enter into with the customer is that contained in the Guarantees, the details of which are available on request. This Guarantee is in the form of a written guarantee which takes effect only when issued in writing by Polyroof to the customer at the request of the Contractor.