

Sureplan FPO for Specifiers

World Reference
in Waterproofing



Sureplan FPO Single Ply Waterproofing Systems





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Fast Application
Recyclable
UV Stable
Easy to use & clean
Flexible methods of installation

A range of **high performance waterproofing systems** designed to meet today's standards

The Icopal Group continues to invest in the development and manufacture of synthetic single ply technology with the introduction of Sureplan FPO waterproofing membranes. Manufactured from flexible polyolefins, Sureplan FPO combines excellent physical product characteristics with superior quality and handling capabilities.

All roofing materials are subjected to environmental conditions that can alter the physical and chemical properties of the material. These conditions include ozone, heat, solar radiation, thermal cycling, freeze/thaw, pollution, biological growth and ponding rainwater.

Roof membrane properties must be maintained during exposure to the roof environment or the roof will not perform as expected. The inherent performance benefits of Sureplan FPO ensure the specifier and building owner of a versatile, durable and stable roofing option.

Durability

Sureplan FPO provides exceptional weather resistance and protection against all temperature extremes. Sureplan FPO is UV resistant and remains virtually unchanged throughout its serviceable life. Accelerated age testing completed on the Sureplan membranes provide an anticipated life expectancy in excess of 20 years.

Compatibility

Sureplan FPO roof membranes can be installed on all major roof deck types such as plywood, timber boards, profiled metal, concrete and cementitious screeds and is not affected by direct contact with commonly used roofing materials such as bitumen, asphalt, polystyrene or rubber. This makes Sureplan FPO the ideal membrane for refurbishing existing roofs.

Security in Application

Adjoining sheets of Sureplan FPO are fused together by hot air welding. Sureplan FPO exhibits a wide "welding window" allowing perfect welds to be produced over a broad temperature range making the membrane very user friendly.



Aesthetics

Sureplan FPO membranes are available in light grey and anthracite colour finishes as standard.

RAL (7001) – Light Grey

RAL (7015) – Anthracite

Sureplan FPO is also available to order in a white colour.

Environmentally Considerate

BREEAM – Sureplan FPO membranes can achieve an A+ rating (subject to specification).

Solar Reflectance (SRI) – FPO Light Grey = 78
FPO White = 100

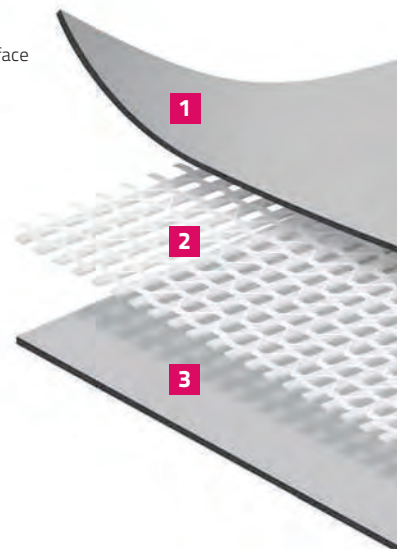
Recyclable – Excess materials generated during the manufacturing process can be ground into small pellets and recycled where it is specifically used to form part of the membrane underside. Further to this, it is understood that Sureplan FPO membranes can also be recycled at the end of their useful life, eliminating the environmental impacts associated with landfill.

Sureplan FPO Product Range

Sureplan FPO is a 1.5mm thick thermoplastic, reinforced waterproofing membrane for flat, curved and pitched roofs. A fleeceback version is also available for use in adhered applications.

Sureplan FPO membranes have been tested for fire performance in accordance with BS 476-3 and achieve an EXT:F.AC rating. Where enhanced fire performance is required, Sureplan FPO Plus membranes are available achieving an EXT:F.AB rating.

- 1 UV resistant thermoplastic FPO top surface
- 2 Tough glass fibre reinforcing grid
- 3 Thermoplastic FPO bottom layer



Sureplan FPO System Benefits:

- Ideal solution for new or refurbishment projects
- Excellent physical characteristics
- 3rd Party Accreditation (BBA)
- Compatible with bitumen, asphalt and polystyrene substrates
- Supported by Icopal's Insured Guarantees
- Complimentary range of accessories
- Flexible methods of installation

Complimentary Accessories

Sureplan FPO accessories have been individually designed to ensure total compatibility and ease of application and play a vital role in achieving the total integrity of the Sureplan waterproofing system. Accessories include Sureplan Coated Metal sheet for the prefabrication of edge trims and details, a range of Sureplan Outlets, Sureplan Walkway Membrane, and an extruded FPO profile for the simulation of traditional metal and standing seam roofs finishes.

Membrane Summary Table

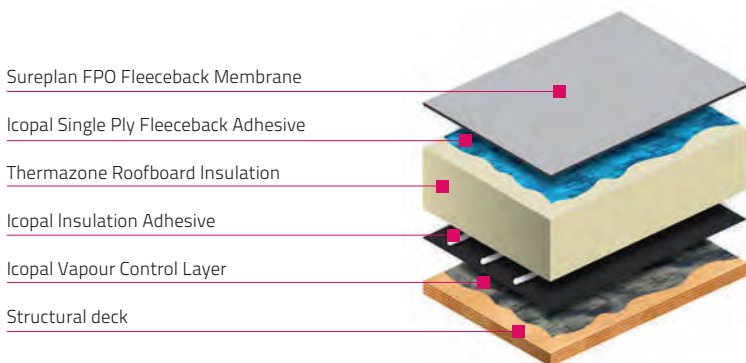
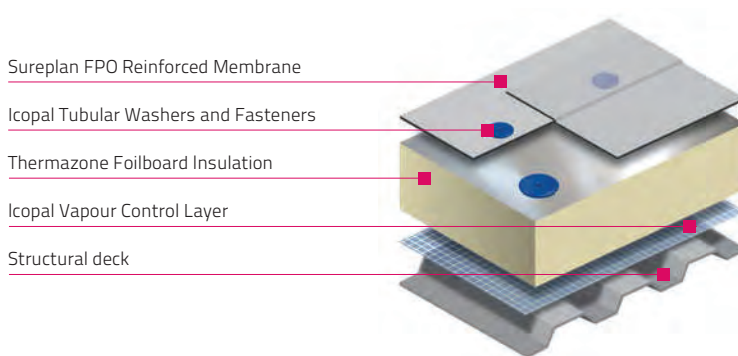
Product	Thickness	Roll Size	Colour	Method of Attachment
Sureplan FPO Reinforced Membrane	1.5mm	1.5 x 15m	Light Grey & Anthracite	Mechanically fixed, inverted and ballasted
Sureplan FPO Plus Reinforced Membrane	1.5mm	1.5 x 15m	Light Grey & Anthracite	
Sureplan FPO Fleeceback Membrane	1.5mm + fleece	2.12 x 15m	Light Grey & Anthracite	Fully adhered, hybrid, inverted and ballasted
Sureplan FPO Plus Fleeceback Membrane	1.5mm + fleece	2.12 x 15m	Light Grey & Anthracite	

Methods of Application

With today's construction trends of highly intricate and complex structures and the requirement for higher thermal insulation values, only membranes which aspire to the highest quality standards and possess unquestionable technical properties, will be considered in the design process. The versatility of Sureplan FPO ensures the designer total freedom and security when specifying the roof waterproofing system.

Mechanically Fastened System

Mechanically fixed systems are often favoured above timber or metal decks where the exposure of the fastener on the underside of the structure is not a consideration. This method of application involves the use of thermally broken fasteners fixed at pre-determined centres and is a fast and cost effective method of installing the single ply membrane which is less dependent upon amicable weather conditions.

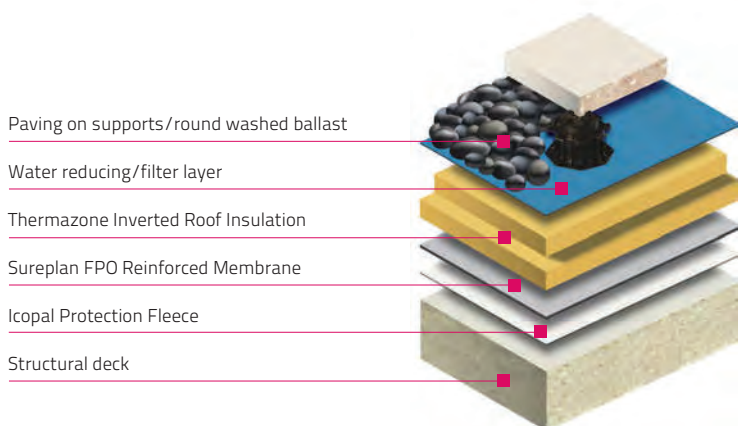


Fully Adhered System

Fully adhered systems are more commonly used above concrete substrates where the process of installing mechanical fixings is invasive and labour intensive. Fully adhered systems are reliant upon suitable weather conditions (which should be considered) however, complex geometries and pitched surfaces can be accommodated with great success. Fully adhered membranes can also provide a superior surface finish.

Inverted Roof System

Inverted roof systems offer an excellent solution for situations where access or recreation are a priority. Ballasted systems also provide maximum resistance against membrane damage, UV degradation, thermal shock, fire or noise. Standard Sureplan FPO membranes can be used in buried systems and do not require substitution for alternative grades.



Warm Ballasted Roof System

The Sureplan FPO membrane is loose-laid and welded together at the overlaps prior to the application of the ballast which holds the membrane in place. This method offers maximum restraint to wind uplift and fast application times, while providing protection from mechanical and solar/UV damage.

Paving on supports/round washed ballast

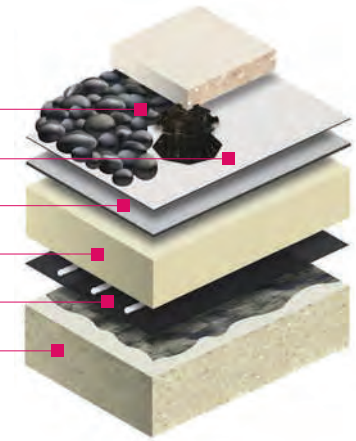
Icopal Protection Fleece

Sureplan FPO Reinforced Membrane

Thermazone Roofboard Insulation

Icopal Vapour Control Layer

Structural deck



Icopal Green Roof System

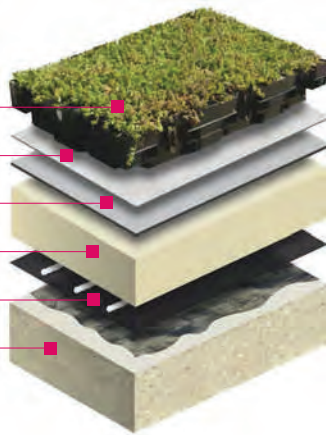
Icopal Protection Fleece

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Thermazone Roofboard Insulation

Icopal Vapour Control Layer

Structural deck



Green Roof System

The use of an Icopal Green Roof system adds another dimension to a Sureplan FPO roof system. All Sureplan FPO system application types can accept a green roof as a surfacing option. In ballasted or inverted buildups the green roof will act as the ballast to secure the system.

Guarantees

As a world leader in the manufacture of waterproofing membranes, we pride ourselves on offering the most comprehensive guarantees available in the flat roof industry, giving further reassurance of our commitment in providing total confidence in our range of high performance waterproofing membranes.

Icopal guarantees incorporate a range of features and benefits tailored to suit the client's specific requirements, including materials, insurance backing, design, consequential damage and approved installation. All guarantees offer upto 20 years as standard, subject to specification.

Several different levels of guarantee coverage are available as per the following list.

- Insured System Plus Guarantee
- Insured Product Plus & Workmanship Guarantee
- Insured Product Plus Guarantee
- Insured Product Guarantee

For further information on different guarantee options, please refer to the Icopal Insured Guarantees Brochure or contact Icopal Technical Services.

Third Party Accreditation

Sureplan FPO membranes have been tested approved by the BBA and have been awarded the certificate number 12/4962.



Full **System** Solutions

Icopal offers a single source solution for complete roof waterproofing. This means simplifying the specification process whilst ensuring that all aspects of an installation attain the same excellent quality through stringent project monitoring and a guaranteed support mechanism.

Vapour Control Layer

Icopal supplies a range of high performance polyethylene and bituminous vapour control layers for use with its single ply roofing systems.

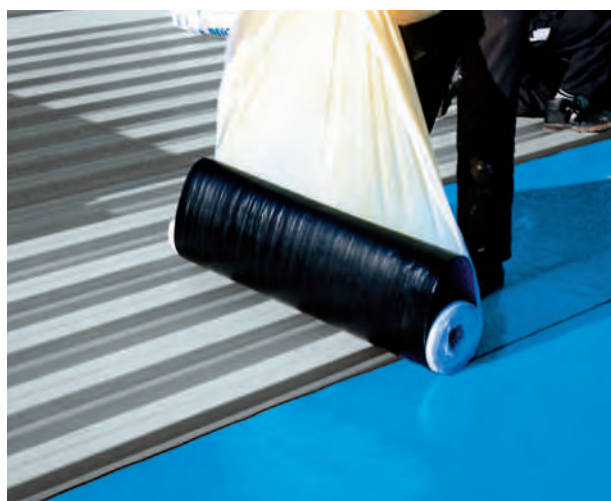
Icopal heat-activated self-adhesive vapour control layers, are manufactured from SBS-modified bitumen and reinforced with an extra strong glass fibre fleece with a PET aluminium foil.

Micoral SK has a blue SYNTAN® resin upper surface allowing the appropriate insulation board to be adhered using Icopal Insulation Adhesive.

Micoral NB is finished with a polyethylene film, and is suitable for use in mechanically fastened applications only.

These membranes are suitable for direct use on metal, timber and concrete deck types.

Also available are **Total Torch VCL**, and **Micotherm SK**. Please see individual product literature for further information.



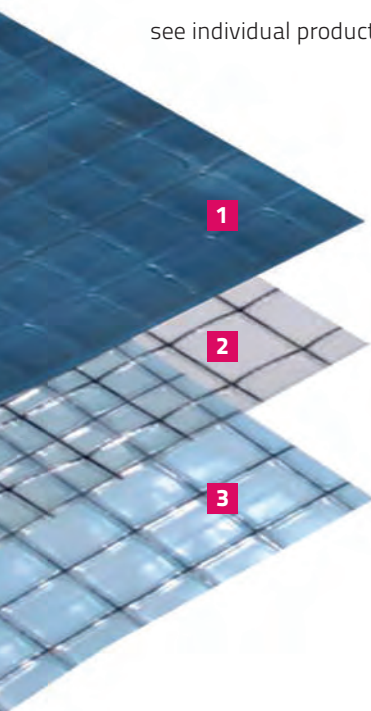
Since these membranes are adhered, they can provide a weatherproof temporary finish to the roof structure prior to the application of the insulation and final waterproofing system.

For mechanically fastened situations, the Monarflex range of reinforced polyethylene vcls, which includes **Reflex 275**, **Monofilament 250**, and **Netofol**, provide a quick and cost effective method of vapour control.

These membranes are loose-laid with laps sealed with Monobond LT tape, and are secured to the roof deck through the mechanical fastening of the insulation board.

Monarflex multi-layer VCL's are manufactured from virgin polyethylene with built-in reinforcement grids of HDPE making them highly resistant to tears and damage. Some also have a layer of aluminium foil for higher water vapour resistance performance.

For further guidance and product information contact Icopal Technical Services on 0161 865 4444 or visit www.icopal.co.uk



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2

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1 Reflex 275

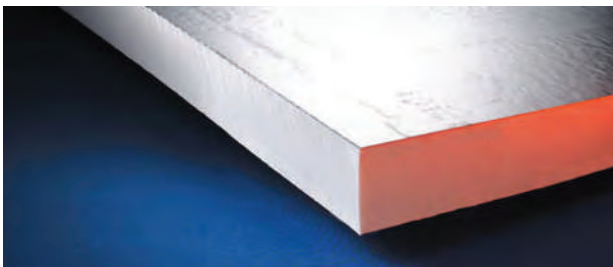
2 Monofilament 250

3 Netofol

Thermal Insulation

The Thermazone range of insulation boards has been specifically designed to complement Icopal's single-ply roofing systems. These boards are available as a uniformed flat board, or can be supplied in a tapered board to offer a cost effective solution to providing positive falls, even on the most complicated of projects.

Thermazone rigid PIR thermal insulation boards are CFC/HCFC free, have a zero Ozone Depletion Potential (ODP), and have a Global Warming Potential (GWP) of less than 5. They have excellent thermal performance, dimensional stability and are resistant to mould and microbial growth.



Thermazone Foilboard is a rigid PIR insulation board and is faced on both sides with a low emissivity composite foil autohesively bonded to the insulation core during manufacture. Thermazone Foilboard is suitable when the board and waterproofing are being mechanically fastened to the structural deck using screws and washer plates.

Thermazone Roofboard is a rigid PIR insulation board and is faced on both sides with a mineralised glass tissue autohesively bonded to the insulation core during manufacture. Thermazone Roofboard is suitable for use when the board is being adhered to a suitably bonded vapour control layer. It is also suitable when the waterproofing is being adhered to the insulation board. This insulation board may also be used in a mechanically fastened situation.

Thermazone Hydrosshield IVR insulation board is for use in inverted roof situations. It is an expanded polystyrene (EPS) board made from a low water absorption polystyrene bead. Thermazone Hydrosshield is to be used in conjunction with the Monarperm water reducing layer. Water seeping between the insulation board causes a cooling affect which must be accounted for within thermal calculations. The use of the Monarperm water reducing layer minimises water

seepage, allowing better U-value performance for a given thickness of insulant.

Mechanical Fasteners

Icopal supply a range of specialist fasteners for securing thermal insulation and Sureplan FPO membranes to a variety of structural roof decks including steel, concrete and timber.



Icopal Tubular Washers eliminate all thermal transmittance associated with metal fasteners, thereby allowing reduced thicknesses of insulation. They are designed with a low-profile washer and narrow tube diameter which aids installation and improves aesthetics.

Icopal Screw Fasteners are manufactured from high grade carbon steel which are case hardened to achieve the properties essential for long term performance and have an organic corrosion resistant finish to meet UEAtc Part 2 requirements.

Thermal insulation boards should be independently mechanically fastened to the structural deck. The number of fixings and the application pattern is dependent upon the size and type of insulation board.

Wind Loadings

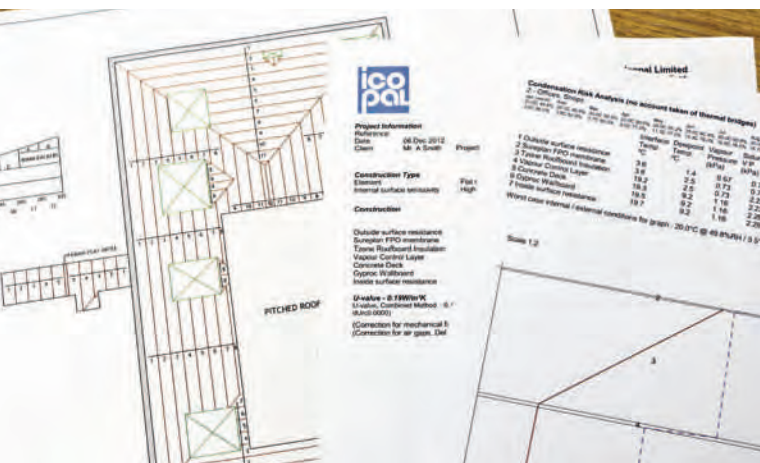
Wind loadings should be assessed in accordance with BS 6399-2: 1997 (Loadings for buildings. Code of practice for wind loads) or BS EN 1991-1-4 taking into account the height, width and length of a building, its orientation and its geographical location. Please see page 10 for further information.

Accessories

Sureplan FPO accessories have been individually designed to ensure total compatibility and ease of application and play a vital role in achieving the total integrity of the Sureplan FPO waterproofing system. Amongst others, accessories include Sureplan Coated Metal sheet for the prefabrication of edge trims and details, a range of Sureplan Outlets, Sureplan Walkway Membrane, and an extruded FPO profile for the simulation of traditional metal and standing seam roofs finishes.

Design Assistance

Whether it is new build or refurbishment, Icopal's Technical Support Services will ensure all aspects of the proposed roofing scheme comply with all the latest Building Regulations and codes of practice.



Wind Uplift

Prior to commencement on site, and upon receipt of a project registration form by Icopal's Technical Services, a wind uplift calculation in accordance with current codes of practice is carried out for each mechanically fastened project. The shape of the roof, the height of the building and its geographical location are all considered when completing the calculation and subsequently determining the required fastener density for that particular roof.

For existing substrates a 'Pull-Out' strength test is recommended and can be provided by Icopal.

Site Inspection

Acting on behalf of the client, surveyor, architect or other nominated agent, Icopal Area Technical Managers can provide a comprehensive roof inspection and condition report prior to making any recommendations for remedial action.

All site inspections include a detailed commentary with photographic record and core samples, where appropriate.

Design Assistance

Standard or project specific detail drawing can be provided showing critical interface detailing and system terminations.



Cut to Falls Insulation

Icopal's in-house design service offers the most cost effective and user efficient solutions to providing positive drainage falls on even the most complicated of projects. From initial design to installation, Icopal's Technical Services will ensure the designed insulation scheme provides a combined solution of insulation value and effective roof drainage.

U-Value and Condensation Risk Analysis

U-Value and condensation risk analysis can be carried out to ascertain the potential threat to the system of interstitial condensation. Should such a threat exist, Icopal's Technical Services team will be able to advise and recommend an appropriate solution.

Specifications

Should it be requested, bespoke system specifications are generated following the completion of the site inspection report. Specifications can be created in NBS J42 or in Icopal's in-house spec-writer format. Each specification will include such things as project specific drawings and make reference to current regulations and standards, ensuring compliance at all times.

Roof Safety

Safe methods of working whilst on a roof is an essential requirement to protect the workers from falls. Icopal's range of Roof Safety and Fall Protection systems can be designed to accommodate the very specific requirements of the roof, without compromising its waterproofing integrity.

Project Monitoring

Once the project is on site, Icopal Quality Inspectors carry out regular site inspections throughout the progress of the project, checking compliance with specification, workmanship and overall aesthetic condition. Each visit is followed up with a written and photographed site report to log comments made during the inspectors visit.

On completion of the project, the Quality Inspector will conduct a thorough inspection of the roof to ensure that all the requirements of the guarantee have been met.

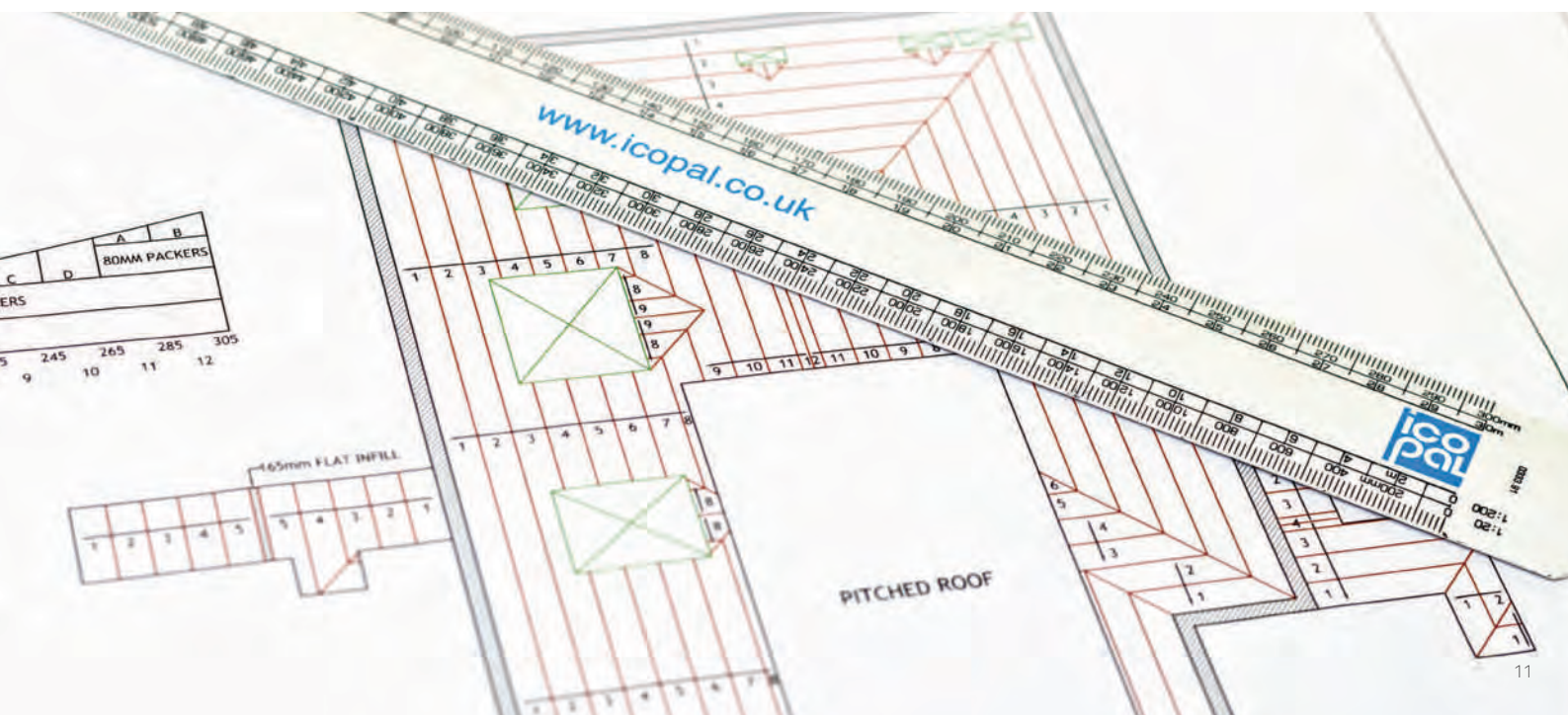
Approved Contractors

All Sureplan FPO installations are carried out by Icopal Sureplan approved contractors, each of whom attend and complete a specific training course carried out at one of Icopal's dedicated training centres.

Trained operatives are required to demonstrate professional levels of competency in all aspects of membrane detailing and application. Upon satisfactory completion of the training, each operative will be certified to a level of competency in the application of the system.

Repair and Maintenance

All roof waterproofing systems require periodical inspection and maintenance. BS 6229: 2003 recommends that all flat roofs be inspected twice yearly; (eg. autumn and spring) so that potentially blocked gutters or outlets can be cleared. In areas of high dust or pollution, inspections should be carried out more frequently. Under the terms and conditions of the Icopal guarantee, a more thorough inspection should be carried out every five years by the original approved installer.





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