



PlyLok[®]

Product Guide

PIR and Plywood Laminate Insulation for Warm Flat Roofs.

...a better way

Introduction

The Company.

Driven by a culture of innovation, technical competence and flair, Recticel Insulation Products is dedicated to raising the standard of quality of insulation products in the UK.

Recticel Insulation, based at its new state-of-the art facility in Stoke-on-Trent, is part of the International Recticel Group, one of the world's largest producers of PIR insulation products. At Recticel Insulation, quality is at the heart of everything we do. Striving for excellence in quality of both product and service, Recticel Insulation will raise the standards and product demands of the customer by delivering to the UK unparalleled PIR product and service quality. Our mission is, to demonstrate that, on all levels, Recticel Insulation will continue to deliver '**a better way**' of Insulation.





Insulation for Warm Flat Roofs.

Plylok is a high performance rigid polyisocyanurate (PIR) foam board for use in warm flat roofs under built-up felt and approved single-ply membrane waterproofing systems.

Description.

Plylok is a closed cell, CFC and HCFC-free (zero ozone depletion), rigid polyisocyanurate foam core faced, both sides with a multi-layer coated aluminum foil. A layer of 6mm WBP plywood is then bonded to the insulation board giving additional strength and rigidity to provide a suitable substrate for partially bonded built up waterproofing systems. The board has exceptionally low thermal conductivity of 0.022 W/mK.

Benefits of Plylok warm flat roof insulation boards:

Wider choice.

Plylok, is available in a wide range of thicknesses, which will assist in meeting the appropriate Building Regulation standard with any form of warm flat roof construction.

Quality.

Outstanding product quality manufactured to ISO 9001 Quality Systems. All of our products carry the CE Mark to show compliance with the harmonised European Standard BS EN 13165.

Ozone friendly.

Zero ozone depletion potential.

Global warming.

CFCs, HCFCs and HFCs are all powerful greenhouse gases. Pentane on the other hand satisfies the "Green Guide to Specification" and the Intergovernmental Panel on Climate Change (IPCC) confirming a Global Warming Potential of below 5.

All our products have a global warming potential of below 5.

Low thermal conductivity.

The declared thermal conductivity value of 0.022 W/mK is some 30% more efficient than most other insulation materials.

Compatibility.

Fully compatible with most synthetic (PVC, EPDM etc) and bitumen based single-ply membrane waterproofing systems.

Warm roof construction.

No requirement for roof ventilation and inherently safe from harmful interstitial condensation.

Reduced risk of condensation.

Condensation within the roof structure is avoided as it is maintained at the same temperature as the inside of the building.

Handling.

Plylok is lightweight yet tough and resilient. The boards are easily cut using a fine-toothed saw.

Durability.

Plylok boards are rot-proof, durable and maintenance free.

Design

Waterproofing systems.

Description.

Plylok boards are compatible with most mechanically synthetic (PVC, EPDM etc) and bitumen based single-ply membrane waterproofing systems.

Condensation.

The requirement for a vapour control layer must be assessed with reference to BS 5250 and BS 6229. If required, a minimum 1000g polythene sheet should be used.

Roof Loading.

Plylok boards are suitable for loads associated with the pedestrian maintenance traffic on the roof; for areas of heavier pedestrian traffic extra precautions should be taken such as the use of specially designed walkways (consult the membrane manufacturer for specific details). Care must be taken to avoid damage to boards by impact or by concentrated loads during installation.

Roof Drainage.

To ensure adequate drainage the roof should have a minimum finished fall of 1:80. This may mean designing for twice the minimum finished fall to account for building inaccuracies, roof deflection and building settlement.

Thermal Bridging.

With increasing levels of insulation it is vitally important to ensure continuity of the insulation at the junction of elements. At the junction of the roof and the wall packing the eaves with compressible mineral fibre insulation will both prevent thermal bridging and close the cavity.

At upstands and parapets the cavity wall insulation should be continued above the level of the roof to ensure continuity of the wall and roof insulation (See Figures 1 and 2).

Wind Uplift.

The wind uplift force exerted on the roof will vary according to geographical location, site location and building height. Reference should be made to BS 6399 and the membrane manufacturer's recommendations for the number of fixings and the fixing pattern.

Installation.

The Recticel Plylok board should be laid to ensure that each long edge coincides with the centre of a joist. Noggins should be used to support all edges of the Recticel Plylok board which are not fully supported by the joists and at locations where the board is cut to suit openings etc.

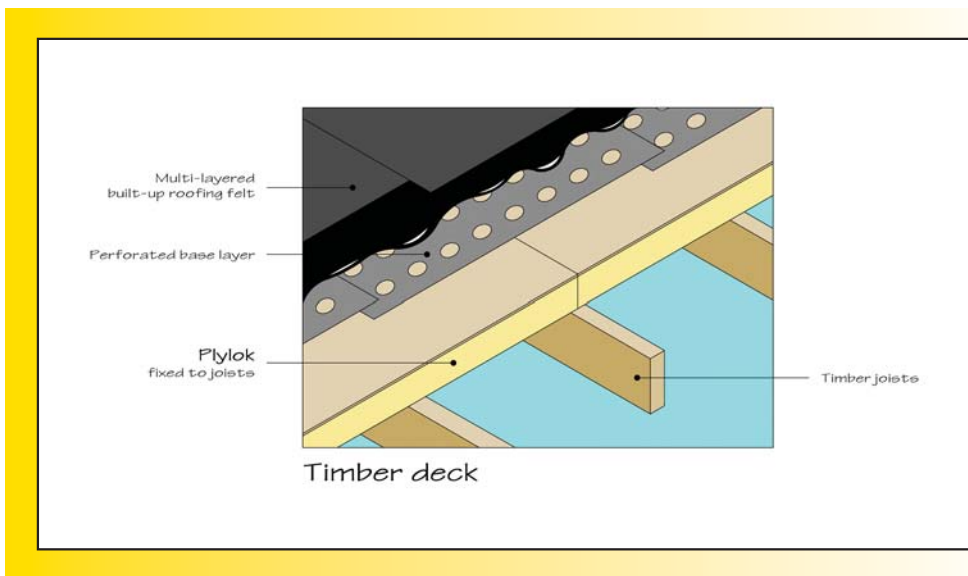
Joists should be spaced at a maximum of 600mm centres and the Recticel Plylok board fixed to the joists with the plywood side uppermost and the board laid with the long edge running along the joist.

Where an overall vapour control layer is required, this can be achieved by applying a continuous strip of mastic/butyl tape to the upper surface of all the supporting timbers which coincides with the edge of the Recticel Plylok boards. The Recticel Plylok should then be laid onto the mastic/butyl tape and secured using round-headed ring shank nails, spaced at 150mm centres running down the line of each joist and noggin.

The round-headed ring shank nails should be long enough to allow for a minimum 35mm penetration of the supporting timber and be positioned not less than 10mm from the edge of the Recticel Plylok board or 50mm from a board corner.

When two Recticel Plylok boards are secured to the same joist or noggin, ensure that the nail-centres are staggered. The Recticel Plylok boards should be lightly butted together and all board edges are to be supported by a minimum of 20mm bearing onto the face of the supporting timber.

Timber Deck - Built Up Roofing.



Installation

Figure 1.

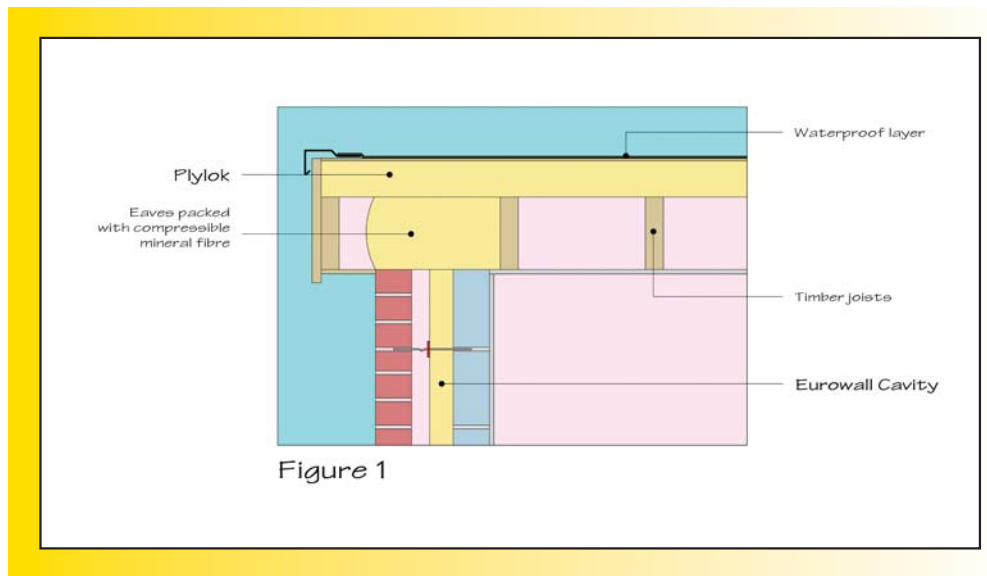
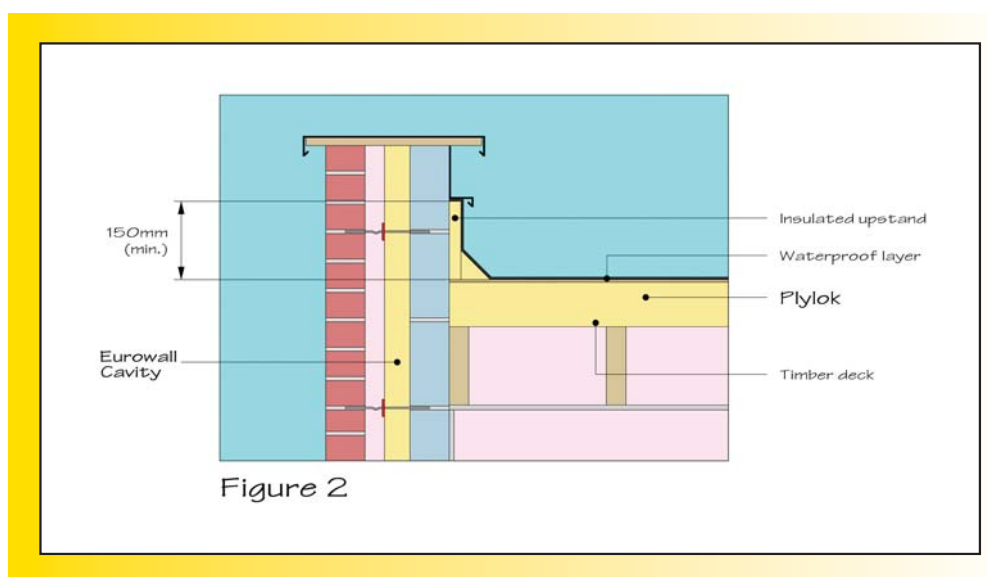


Figure 2.



Heat Loss Calculations.

Description:

The method of calculating U-values is the Combined Method (see BS EN ISO 6946) which as well as assessing the thermal bridge effect of mortar joints, timber studs etc also accounts for air gaps in the insulation and mechanical fasteners penetrating the insulation.

Fixings are assumed to be stainless steel, have a diameter of 4.8mm and fixed at a density of 4 per square metre. Figures in brackets are for plastic/telescopic fixings where no correction factor is applied.

Timber Deck Plasterboard Ceiling	
PlyLok Thickness (mm)	U-Value (W/m ² K)
56*	0.35
76*	0.27
81*	0.25
86*	0.24
96*	0.22
106*	0.20
116*	0.19
126*	0.18
136*	0.16
146*	0.15
156*	0.14

Outside, 7mm Built up felt waterproofing, Plylok Insulation, Un-vented low emissivity joist cavity, 12.5mm Plasterboard, 2mm plaster skim, Inside. Thermally broken fixings assumed for calculation purposes

*Thickness includes 6mm WBP Plywood facing.

Technical Details

PlyLok is available in the following dimensions:

Length (mm)	2400
Width (mm)	1200
Thickness (mm)	56, 76, 81, 86, 96, 106, 116, 126, 136, 146, 156

Some thicknesses may be subject to minimum order quantities. Other sizes and thicknesses are available on request. Please contact Recticel Customer Services for more information.

Specification Clause.

The flat roof insulation shall be mm thick Recticel Plylok CFC and HCFC-free, rigid PIR foam with multi-layer, coated aluminium foil, facings to both sides and factory bonded 6mm WBP plywood. Insulation to be installed as work proceeds in accordance with Recticel Insulation Products instructions.

Designation Code.

PUR - EN 13165

Compressive Strength.

The compressive strength exceeds 140kPa <60mm, 150kPa >60mm at yield.

Thermal Conductivity.

The declared thermal conductivity, λ_D -value of Plylok is 0.022 W/mK for the insulation when tested using BS EN 13165: 2001 and 0.170 W/mK for the 6mm WBP ply wood.

Moisture Vapour Transmission.

The foil faces of the Plylok board give it an almost infinite water vapour resistance value. The joints between boards however will facilitate the passage of moisture vapour under normal conditions of temperature and humidity; a practical value for the moisture vapour resistance of the system is 100 MNs/g.

Specific Heat Capacity.

The specific heat capacity is 1.4 kJ/kgK.

Durability.

When correctly installed, Plylok boards are maintenance free. PlyLok boards are rot proof.

Storage.

Plylok boards are supplied wrapped in polythene to provide short term protection. On site the boards should be stored in dry conditions, clear of the ground, on a clean level surface.

Reaction to Fire.

Euroclass F (BS EN 13501-1)
Class 1 (BS 476, Part 7)



Health and Safety.

Recticel PlyLok Insulation boards are inherently safe to handle. During cutting or machining any dust generated is of nuisance value only. Large scale machining should be connected to a dust extraction system. Please note that the reflective surface on this product is designed to enhance its thermal performance. As such, it will reflect light as well as heat, including ultraviolet light. Therefore, if this board is being installed during bright weather, it is advisable to wear UV eye protection, and if the skin is exposed for a significant period of time, to protect the bare skin with a high SPF sun cream. The reflective facing used on this product can become slippery when wet. Ensure care is taken to avoid skin and eye contact with any sharp edges. Do not stand on or otherwise support your weight on this board unless it is fully supported by a load bearing surface. A comprehensive health and safety data sheet is available from Recticel Insulation Products upon request.

References.

The Building Regulations and supporting documents.

Thermal Insulation: avoiding risks.

Limiting Thermal Bridging and Air Leakage: Robust Construction Details for Dwellings and Similar Buildings (DTLR/DEFRA).

CIBSE Guide A3 - Thermal Properties of Building Structures.

BS 5250 Code of Practice for Control of Condensation in Buildings.

BS 6229 Code of Practice for Flat Roofs with Continuously Supported Coverings.

BS 6399 Loadings for Buildings.

BS 8000 Workmanship on Building Sites.

Part 4 Code of Practice for Waterproofing.

BRE Digests, Information Papers and Good Building Guides

Contact Details.

Technical Desk Freephone 0800 0854079

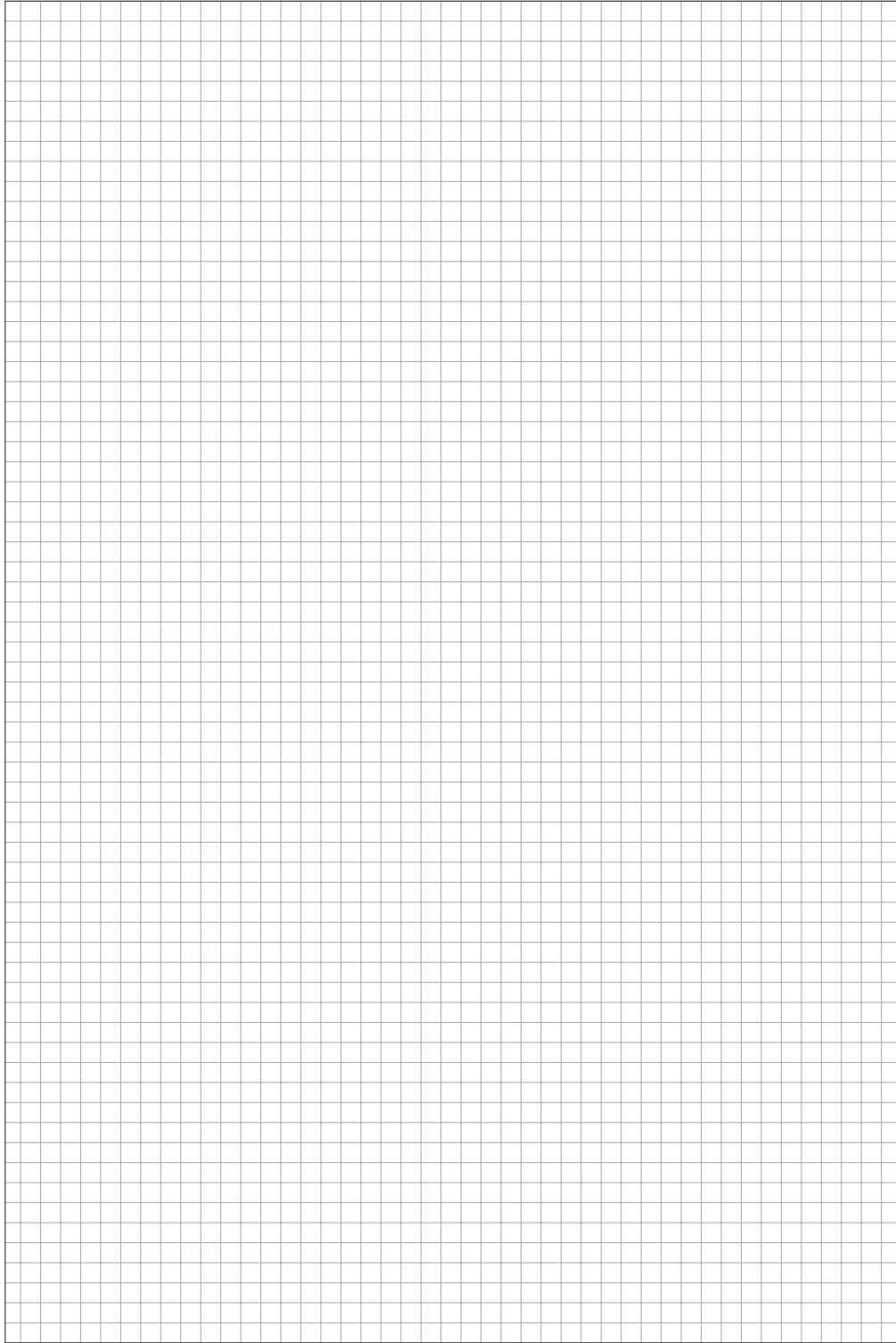
Email: enquiries@recticelinsulation.co.uk

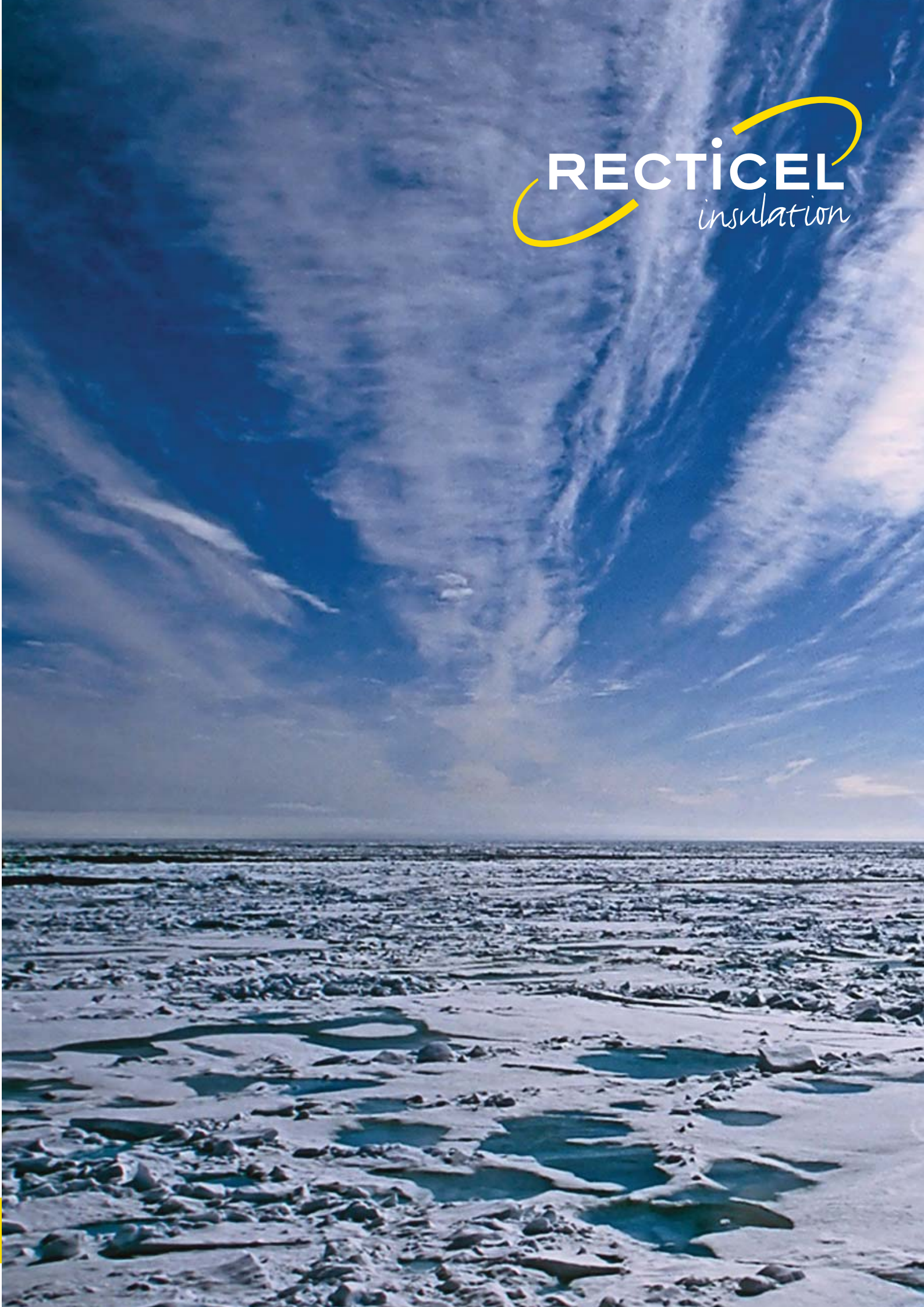
The information, technical details and other instructions included in this literature are correct at the time of publication and apply to the uses described. Heat loss calculation figures quoted are for guidance only. A detailed U-value calculation together with condensation risk analysis should be completed for each individual project. Please contact Recticel Insulation Technical Service Department for assistance.

Recommendations for use should be verified as to the suitability and compliance with actual requirements, specifications and any applicable laws and regulations. For other applications or conditions of use, contact Recticel Insulation Technical Service Department for assistance.

Recticel Insulation Ltd. reserves the right to amend product specifications without prior notice.

Notes







Recticel Insulation Products
Enterprise Way,
Whittle Road,
Meir Park,
Stoke-on-Trent.
ST3 7UN

Technical Desk Freephone 0800 0854079
Email: enquiries@recticelinsulation.co.uk

t 01782 590470
f 01782 590497
www.recticelinsulation.co.uk

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