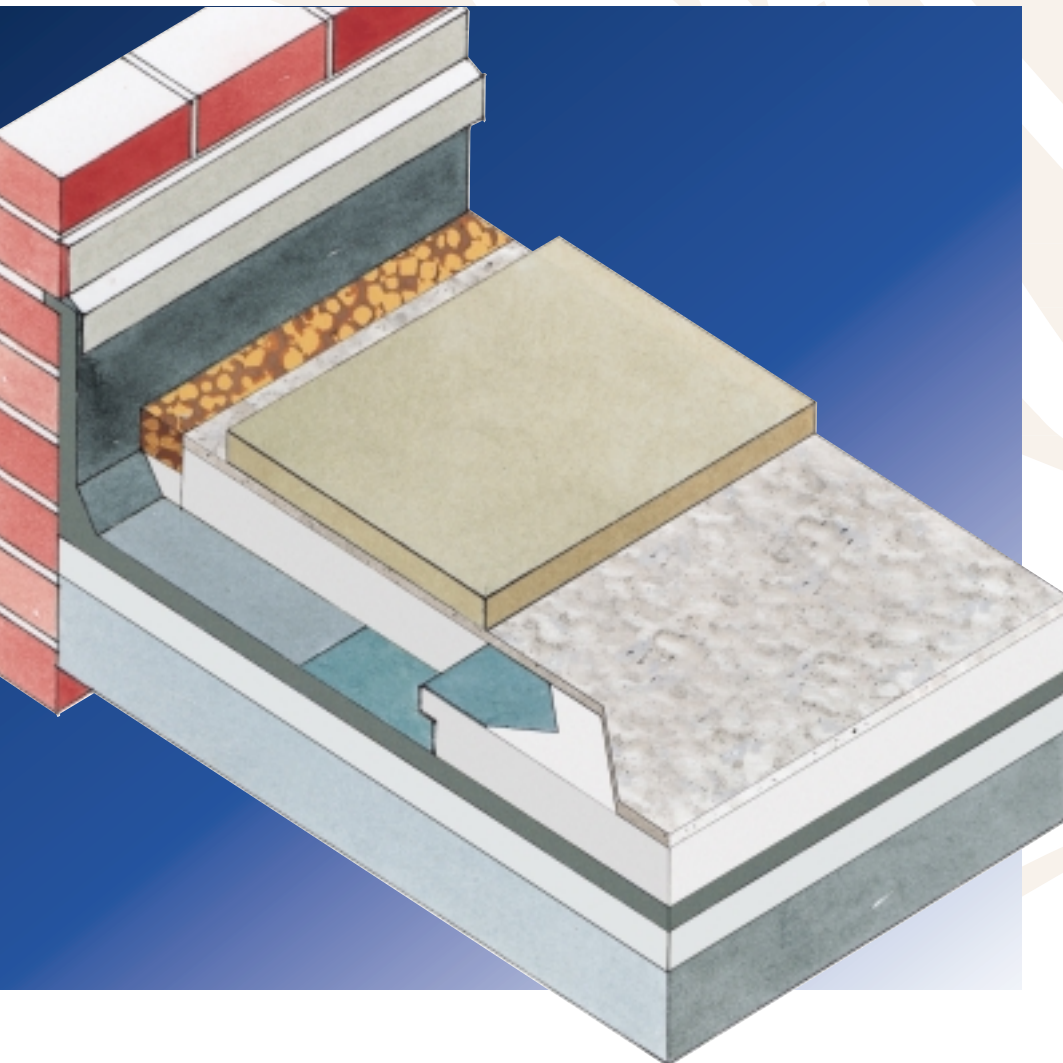




Purlcretechevron

LIGHTWEIGHT PROTECTED MEMBRANE
INSULATION - MAINTENANCE ACCESS



- ▼ Cementitious topped high performance rigid extruded polystyrene insulation panels
- ▼ Additional dead loading is kept to a minimum
- ▼ Excellent resistance to wind uplift
- ▼ Easy to handle and install – panels rebated on all four edges
- ▼ Ideal for newbuild and refurbishment
- ▼ CFC/HCFC-free with zero Ozone Depletion Potential (ODP)



BS EN ISO 9002 : 1994
Certificate No. FM 10697



Kingspan Purlcretechevron

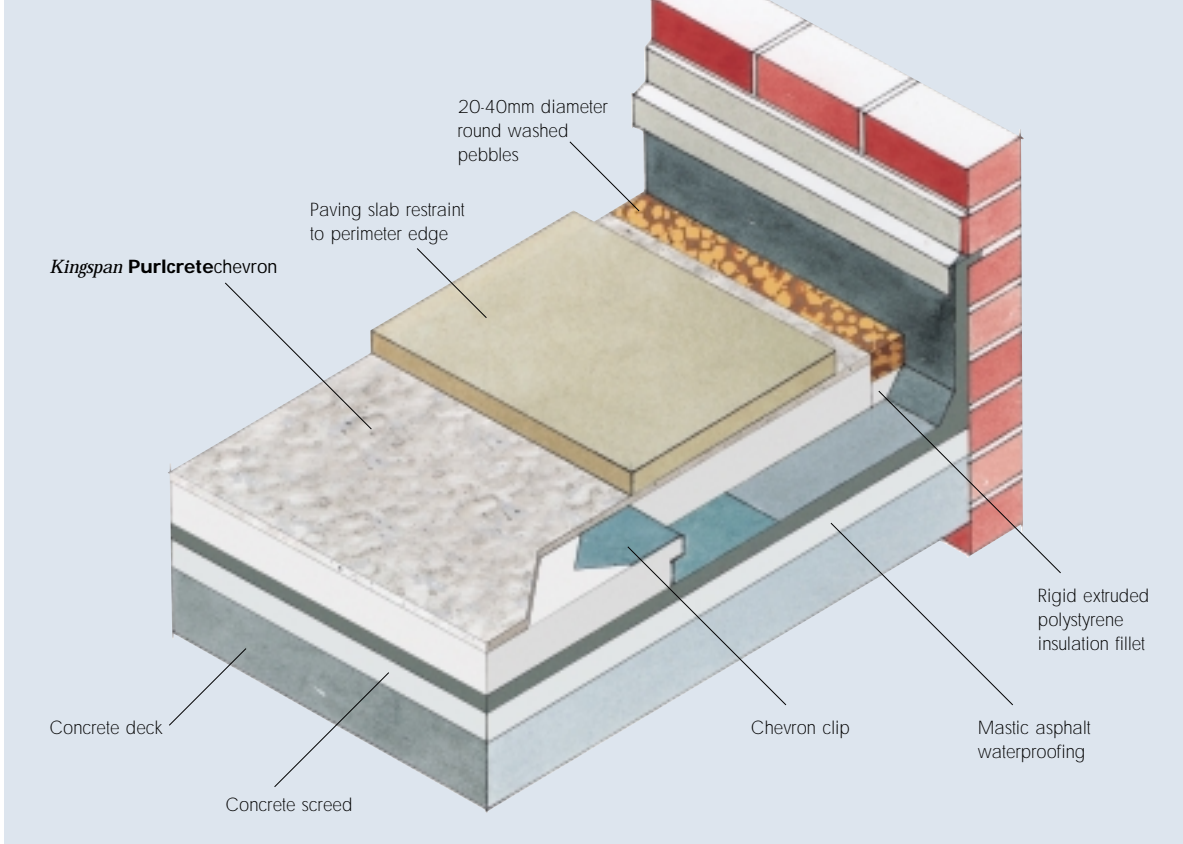


Figure 1 ROOF WITH PARAPET

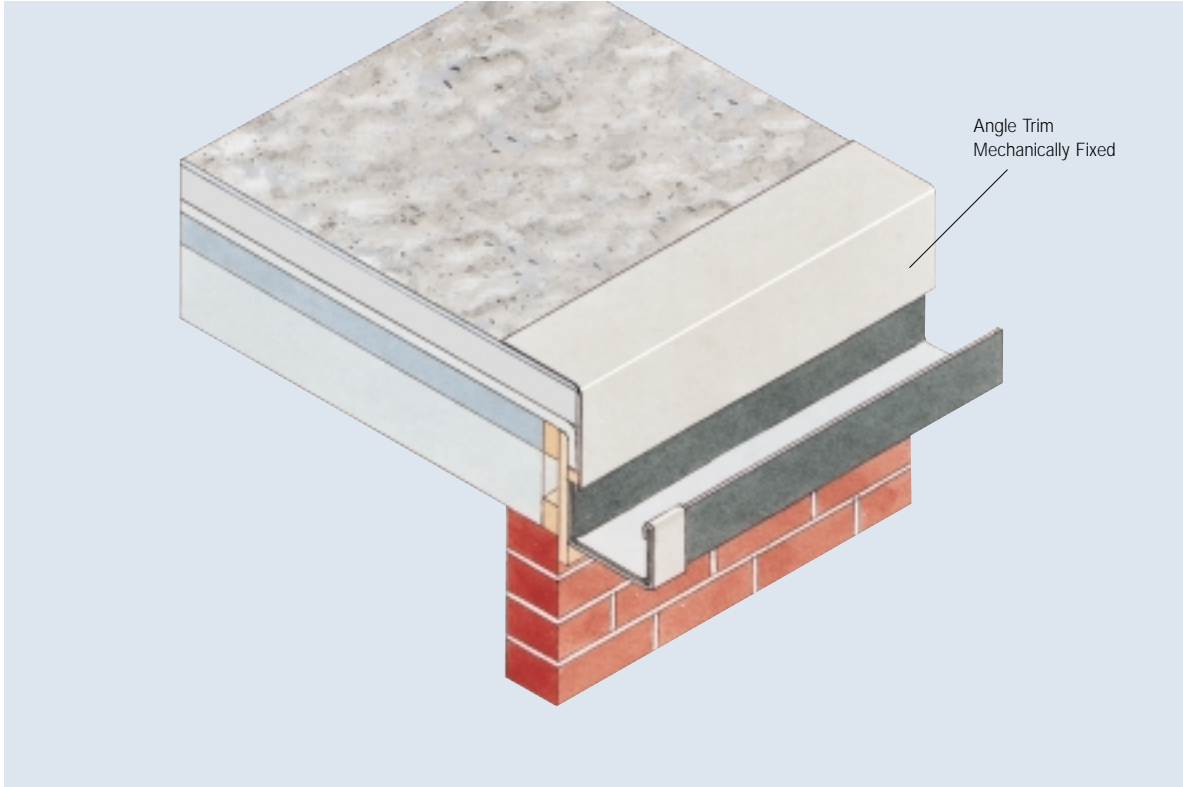



Figure 2 ROOF WITHOUT PARAPET

SPECIFICATION CLAUSE

Kingspan Purlcretechevron should be described in specifications as:-

The protected membrane roof insulation shall be **Kingspan Purlcretechevron** comprising ____mm thick rigid extruded polystyrene insulation with a 10mm thick polymer fibre reinforced hydraulic cement topping manufactured to BS EN ISO 9002: 1994 by Kingspan Insulation Limited and shall be applied in accordance with the instructions issued by them.

Details also available in NBS PLUS.  NBS users should refer to clause(s): J21 150, J21 710, J41 150, J41 710, J42 120, J42 810 (Standard and Intermediate)

DESIGN CONSIDERATIONS

WIND UPLIFT CALCULATIONS

A full wind uplift calculation should be produced to verify the fixing specification of the **Kingspan Purlcretechevron** over the roof. This service is available free of charge from our Technical Services Department (see rear cover).

DESIGN LOADS

The suitability of the structure under consideration to accept or withstand the design imposed loads including the increased dead load of the **Kingspan Purlcretechevron** system plus any necessary ballast and design snow loads should be verified according to BS 6399: Part 3: 1988 (Code of practice for imposed roof loads).

WIND LOADINGS

Wind loadings should be assessed in accordance with BS 6399: Part 2: 1997 (Code of practice for wind loads). BRE Digest 346 Parts 1-8 can also be referenced for wind loading.

DESIGN DYNAMIC PRESSURE

The design dynamic pressure q should be calculated in accordance with BS 6399: Part 2: 1997 (Code of practice for wind loads).

EXTERNAL PRESSURE CO-EFFICIENT

The external pressure co-efficient, C_{pe} , should be applied in accordance with BS 6399: Part 2: 1997 (Code of practice for wind loads). This figure is subject to a reduction as stated in the following section.

REDUCTION OF EXTERNAL PRESSURE CO-EFFICIENT VALUE

It is recommended in BRE Digest No. 295 (Stability under Wind Load of Loose-Laid External Roof Insulation Boards) that the uplift force co-efficient on a single insulation board, C_f is taken as one-third of the external pressure co-efficient, C_{pe} , applicable to the area in which the insulation board lies.

PARAPET & EDGE DETAIL

Parapet and edge detail should comply with paragraph (g) of BRE Digest 295, as detailed in 'Loose Laid Systems' on page 5 (see also Figures 1 and 2).

DESIGN RESTRAINT

The design restraint of the **Kingspan Purlcretechevron** system when interlocked into an array is:-

Stretcher bond array	Self weight x 2
Chevron array	Self weight x 3
Chevron array plus clips	Self weight x 5
Not interlocked into array	Self weight

The normal and recommended laying pattern for **Kingspan Purlcretechevron** is the chevron pattern (see page 9). This method offers additional restraint values of three times self weight where the panels are locked into the array. This restraint value can be increased to five times self weight by the use of Chevron stainless steel clips. When the **Kingspan Purlcretechevron** panels are laid to a stretcher bond pattern the restraint value when locked into the array is twice self weight. Panels with a free edge and not locked into the array should be considered as self weight only. Whatever pattern is specified, the **Kingspan Purlcretechevron** system should be laid so that the rebate interlock is always maintained. Where panels have to be cut the continuity of interlock should be maintained by the use of Promenade Clips.

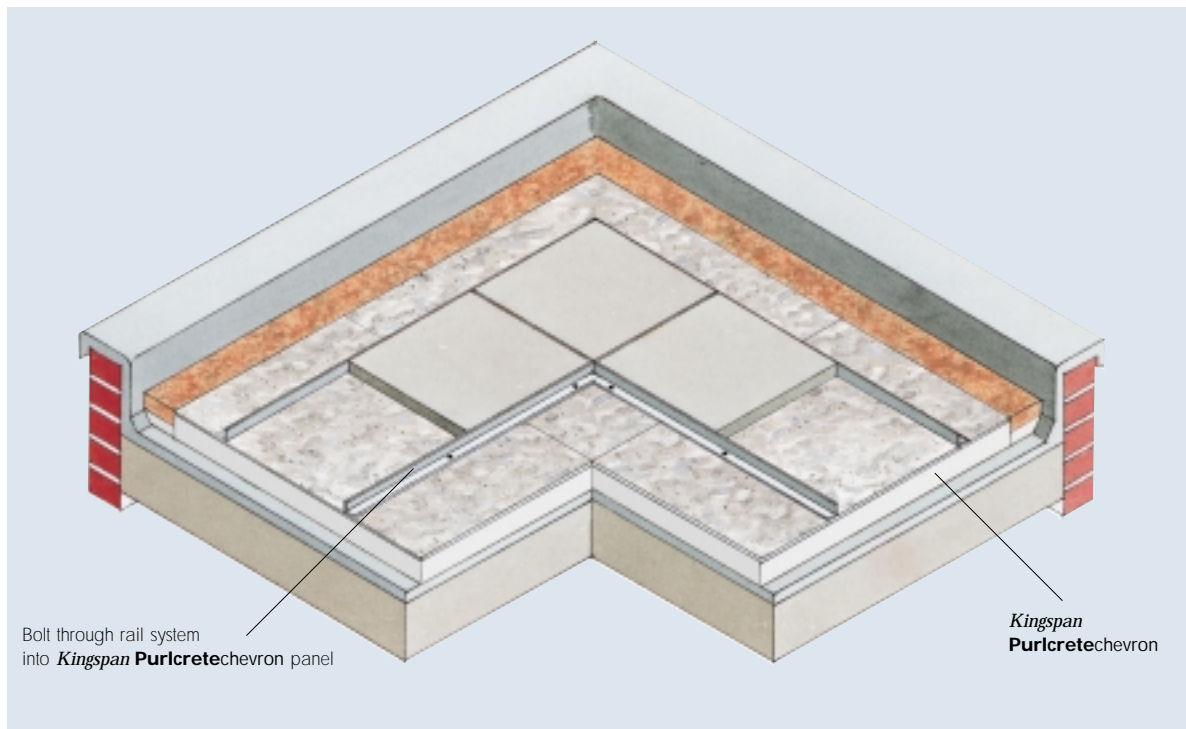
EDGE DETAIL ADDITIONAL RESTRAINT

Where the design requires additional ballast or mechanical restraint over and above the self weight values offered by the various methods of laying as described above, this is normally achieved by the use of 50 mm concrete paving slabs loose laid over the panels at centres as appropriate to the design values (see Figure 1).

Alternatively it is possible to incorporate **Purlcretepromenade** Edge Panels (see literature for **Kingspan Purlcretepromenade**).

Kingspan **Purlcretechevron**

Figure 3 RAIL FIXING SYSTEM



RAIL FIXING SYSTEM

The rail fixing system should be used on those roofs that will not accept the additional loading imposed by further ballasting.

The exact design will vary with each roof and our Technical Services Department (see rear cover) should be contacted in order that they can make their recommendations. Basic lay-out details are given in Figure 3.

MECHANICAL RESTRAINT PERIMETER DETAIL

Mechanical restraint systems can be used in some circumstances in place of or in conjunction with ballast. Suitable trims which allow anchorage to the vertical face of perimeter walls etc. may be incorporated into the design. On roofs without a parapet a trim or flashing should be specified to prevent wind blowing under the perimeter panels (see Figure 2). This will also apply to the free edge of the **Kingspan Purlcretechevron** wherever the continuity of the insulation is interrupted.

BONDED SYSTEMS

Only partially bonded systems can be considered for such applications in order to allow drainage of rainwater from the roof. The application pattern of the specified adhesive system must ensure that the drainage plane between the insulant and the roof waterproofing membrane is always maintained.

Both the specified waterproofing and adhesive manufacturers advice should be sought as to the suitability of their material or system to adequately bond the **Kingspan Purlcretechevron** to the specified substrate bearing in mind the nature of the substrate, the rigid extruded polystyrene insulation backing of **Kingspan Purlcretechevron**, the percentage bond area, and the distribution pattern. In any case the wind uplift resistance, without any reductions for layout or configuration, should be calculated in accordance with BS 6399: Part 2: 1997 (Code of practice for wind loads).

LOOSE LAID SYSTEMS

In order to provide stability against wind-induced uplift and normally being reliant on self weight, **Kingspan Purlcretechevron** can be laid loose in conjunction with additional ballasting or mechanical restraint where wind conditions are appropriate.

The use of the **Kingspan Purlcretechevron** system should take into account the recommendations given in BRE Digest No. 295, from which the following extracts have been taken.

- a. The existing roof on which the system should be laid should be impermeable and should itself be able to withstand the design imposed loads, namely the increased dead load due to the weight of the insulation system and, the design snow load as detailed in BS 6399: Part 3: 1988 (Code of practice for imposed roof loads).
- b. The insulation boards should be laid directly on, but not bonded to, the surface of the roof. Bonded systems should be designed to withstand the full loads given by BS 6399: Part 2: 1997 (Code of practice for wind loads).
- c. The top surface of each insulation board should be flush with its neighbours.
- d. The area of each individual board should not exceed 2 m².
- e. Any space remaining between the bottom of the insulation and the roof surface should be less than 5 mm high, when averaged over the whole area of the board.
- f. The gap between each board and its neighbours should not be less than 1 mm when averaged over the length of the joint.
- g. Wind should be prevented from blowing under the boards at the perimeter of the roof, or at any uninsulated area of the roof, either by means of an eaves trim or flashing, or by a parapet. The height of the parapet, measured from the top of the insulation system, should be greater than the thickness of the insulation system and also greater than the distance between the rear face of the parapet and the edge of the first board (e.g. the width of any gutter).

RAINWATER OUTLETS

Double entry rainwater outlets or gullies should be specified to allow rainwater to be drained from the roof surface at both the membrane level and at the upper surface level.

SURFACE TREATMENT

The boards have a pre-finished, durable, smooth upper surface and no further treatment is necessary.

UPSTAND PROTECTION

To protect the upstand detail from UV light and thermal cycling the specifier may wish to consider fitting **Purlcretechevron** vertically as shown below.

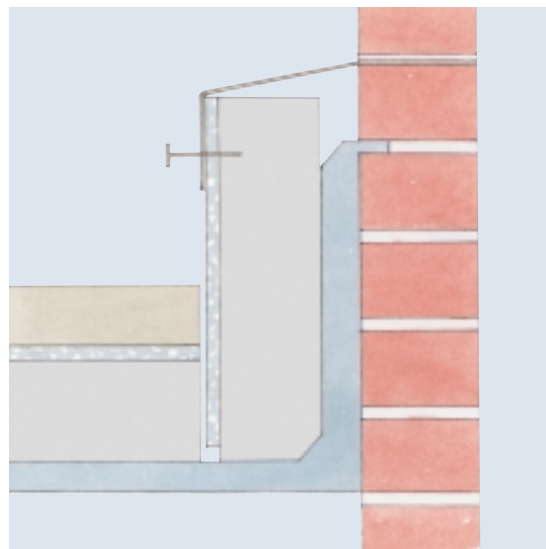


Figure 4 ALTERNATIVE UPSTAND DETAIL

WALKWAYS

Walkways should be designed by use of paving slabs overlaid on the Kingspan **Purlcretechevron** tiles.

Kingspan Purlcretechevron

THERMAL PROPERTIES

The R-values and λ -values quoted in this document are based on the procedures for the determination of the aged values of thermal resistance and thermal conductivity, laid down in the harmonised European standard BS EN 13164, using so called 90:90 principles. Comparison with alternative products may not be appropriate unless the same procedures have been followed.

THERMAL CONDUCTIVITY

The thermal conductivity (λ -value) of the extruded polystyrene component of the panel is 0.028 W/m.K, and that of the polymer fibre reinforced cement topping is 1.4 W/m.K.

THERMAL RESISTANCES

Thermal resistance (R-value) varies with thickness and is calculated by dividing the thickness of the individual component (expressed in metres) by its thermal conductivity and adding the resultant figures together.

Additionally, an allowance of 20% of the calculated insulation thermal resistance is made to compensate for saturated roofs during long periods of rain in accordance with BS 5250: 1989 (1995) (Code of practice for control of condensation in buildings). The following table of design resistance values takes this allowance into account.

Product Thickness* (mm)	Thermal Resistance (m ² .K/W)
70	1.772
80	2.066
85	2.213
90	2.360
100	2.657
110	2.948
120	3.242
130	3.536
135	3.683
140	3.831
150	4.125
155	4.272

*Product Thickness = insulant thickness + 10 mm polymer fibre reinforced cement topping

TYPICAL U-VALUES

The following examples have been calculated using both the combined method and the proportional area method. The combined method is required for compliance with Building Regulations / Standards revised after the year 2000. These examples are based on the use of 150 mm concrete deck, 50 mm screed and mastic asphalt waterproofing. In applications with plasterboard ceiling, it is taken to be 12.5 mm plasterboard with a cavity between it and the underside of the deck.

If your construction is any different or you need Hazardous to Health Regulations 1988 (COSHH) information, please consult our Technical Services Department.

Combined Method – U-values were calculated using the method which has been adopted to bring National standards in line with the European Standard calculation method, BS / IS EN ISO 6946: 1997 (Building components and building elements. Thermal resistance and thermal transmittance. Calculation method).

Proportional Area Method – the U-values shown below were calculated using the proportional area method as detailed in The Chartered Institute of Building Services Engineers (CIBSE) Guide A3 (Thermal Properties of Building Structures).

NB for the purposes of these calculations the standard of workmanship has been assumed good and therefore the correction factor for air gaps has been ignored.

The figures below are for guidance only. A detailed U-value calculation together with condensation risk analysis should be completed for each individual project. Please call our Technical Services Department for assistance (see rear cover).

DENSE CONCRETE DECK

*Product Thickness (mm)	U-value (W/m ² .K)	
	Combined Method	Proportional Area Method
80	0.42	0.42
85	0.40	0.40
90	0.38	0.37
100	0.34	0.31
110	0.31	0.26
120	0.28	0.28
130	0.26	0.24
135	0.25	0.23
140	0.24	0.21
150	0.23	0.20
155	0.22	0.19

*Product Thickness = insulant thickness + 10 mm polymer fibre reinforced cement topping

DENSE CONCRETE DECK WITH PLASTERBOARD CEILING

*Product Thickness (mm)	U-value (W/m ² .K)	
	Combined Method	Proportional Area Method)
70	0.44	0.43
80	0.38	0.38
85	0.36	0.36
90	0.35	0.34
100	0.31	0.31
110	0.29	0.29
120	0.26	0.26
130	0.25	0.24
135	0.24	0.23
140	0.23	0.23
150	0.22	0.21

*Product Thickness = insulant thickness + 10 mm polymer fibre reinforced cement topping

NB at greater thicknesses it may prove more cost effective to use a double layer system of thinner boards.

SITWORK

STANDARD LOOSE LAID SPECIFICATION

Before any work commences, the roof waterproofing should be complete and the roof completely water-tight and wind stable. The roof should be graded to allow the correct falls to all roof rainwater outlets and the surface smooth without large projections steps or gaps. Where gaps are unavoidable, the maximum un-supported span of the **Kingspan Purlcretechevron** panels should be 100 mm. Care should be exercised to ensure that wind cannot blow under the panels at such points.

CHEVRON PATTERN LAYING PROCEDURE

Roofs with Parapet

To facilitate directional laying of the **Kingspan Purlcretechevron** panels laid to a chevron pattern, the product is supplied in equal numbers of left and right handed panels. Start laying at the most windward corner of the roof and work towards the leeward corner or side. (In the UK and Ireland the prevailing wind is usually South Westerly or Westerly). Strike a right angle at this corner of the roof, preferably 75 mm in from the inner edge of the parapet. Lay one panel adjacent to the perimeter of one edge of the roof and lay a second panel of the opposite hand at right angles to it, the short end of this panel fitting to the long edge of the other panel so as to complete the rebate and form an exact ninety degree angle. A 1 mm gap should be created between all panels. Continue laying the remainder of the panels maintaining the direction of left and right hand panels as determined at the commencement. (see Figure 5).

Where the specification calls for the interlock of the **Kingspan Purlcretechevron** system to be reinforced by the use of **Kingspan Purlcretechevron** stainless steel clips, these should be fitted by inserting the pointed end of the clip immediately below the cementitious topping of the panel so that the preformed section of the clip fits snugly to the rebated edge. The flat non pointed section of the clip is seated below the adjacent panel. (see Figure 1).

The 75 mm peripheral margin should be insulated separately with rigid extruded polystyrene insulation and ballasted to prevent wind uplift.

Roofs without Parapet (see Figure 2)

Where the roof is not protected by a suitable parapet it is necessary to ensure that the wind is not allowed to blow under the edge of the **Kingspan Purlcretechevron** panels. During the laying of the **Kingspan Purlcretechevron** system all such edges must be temporarily secured until final completion of the edge detail using trims, mechanical restraints or permanent ballasting as appropriate. Where the use of temporary ballast is permitted, it is advisable to prevent slippage over unprotected edges. Continue laying the remainder of the panels maintaining the direction of left and right hand panels as determined at the commencement.

STRETCHER BOND PATTERN LAYING PROCEDURE (Brick bond)

This method of laying **Kingspan Purlcretechevron** should only be considered for those roof areas that will not accommodate the Chevron pattern.

Roofs with Parapet

Always start laying at the prevailing windward corner of the roof and work towards the leeward corner or side. (In the UK and Ireland the prevailing wind is usually South Westerly or Westerly). Create a margin by starting 75 mm in from the perimeter and lay one row of **Kingspan Purlcretechevron** panels down one edge of the roof. The second row is then laid starting with a half panel. These should interlock with the first row and with the panels adjacent to them. Alternate all subsequent rows across the full width or length of the roof. The 75 mm peripheral margin should be insulated separately with extruded polystyrene and ballasted to prevent uplift.

Kingspan Purlcretechevron

Roofs without Parapet

Where the edge detail does not include a parapet, ballast or restrain all edge panels to prevent wind uplift. Alternatively temporarily ballast or restrain the panels prior to the application of the specified edge trim or mechanical fixing detail. All ballasting or restraint irrespective of its permanent or temporary nature should fully meet the wind loading requirements for the roof. Except for those panels at the perimeter of the roof, each panel should be fully interlocked with the adjacent panel or be specially anchored or ballasted.

Continue across the full length or width of the roof ensuring that the panels are interlocked and are flush with the adjacent panels. Gaps between panels should not be less than 1 mm.

INSTRUCTIONS FOR ALL METHODS OF LAYING

At rainwater outlets or gullies it is essential to ensure that rainwater can be drained from the roof surface at both the membrane level and at the upper surface level. This can be achieved by the use of double entry gullies or outlets. Where the panels are laid over a roof surface that has a change in roof slope to facilitate rainwater drainage, the polymer fibre reinforced cement topping should be cut with a masonry saw along the line of the change in plane. This will reduce the risk of the panels cracking along this line. The saw cut should be left open. Where it is found to be necessary to cut right through a panel the interlock must be restored. This can be achieved by the use of opposing Promenade Clips of appropriate thickness.

Where the panelling is perforated to allow pipes or other roof projections to pass through, the holes should be cut cleanly using a masonry saw.

A minimum 5 mm gap should be allowed between the panel and the projecting object. Where these holes may effect the stability of the roof, as regards wind up-lift, additional restraint of the panels should be provided.

Where the roof deck is to be used by other trades as a working platform after the **Kingspan Purlcretechevron** system has been laid, the roof should be close boarded to prevent any damage to the completed insulation or deck. On completion the roof should be swept clean and all contractual equipment or debris removed.

DAILY WORKING PRACTICE

When ever work is interrupted free edges of the laid panels under which wind may be able to blow should be temporarily ballasted (if allowed) or adequately secured to avoid wind blow off of the partially completed roof area.

AVAILABILITY

Kingspan Purlcretechevron is available through specialist insulation distributors and selected roofers merchants throughout Britain, Ireland and Europe.

PACKAGING

The panels are supplied wrapped and packed in bundles according to thickness.

STORAGE

The packaging of **Kingspan Purlcretechevron** should not be considered adequate for long term outside protection.

Kingspan Purlcretechevron should be stored flat in a ventilated area and protected generally from accidental damage, contact with volatile solvents, flames and extended exposure to UV and sunlight. If it is stored outside for more than a few weeks, it must be covered with a pale pigmented plastic sheet.

Kingspan Purlcretechevron should not be left in the sun covered by either a transparent or a dark plastic sheet, since in both cases, board temperatures can build up to a level hot enough to appreciably alter their dimensions or warp them.

HEALTH AND SAFETY

Kingspan Insulation products are chemically inert and safe to use. A leaflet on this topic which satisfies the requirements set out in the Control of Substances Hazardous to Health Regulations, 1988 (COSHH) is available from our Technical Services Department (see rear cover).

Warning – do not stand on or otherwise support your weight on this board unless it is fully supported by a load bearing surface.

PRODUCT DESCRIPTION

TOPPING

The topping of **Kingspan Purlcretechevron** is a 10 mm polymer fibre reinforced hydraulic cement of typical density 2,000 kg/m³. The colour may vary due to the natural colouring of the cement and or the fines used in its manufacture. Colour matching can not be guaranteed.

THE CORE

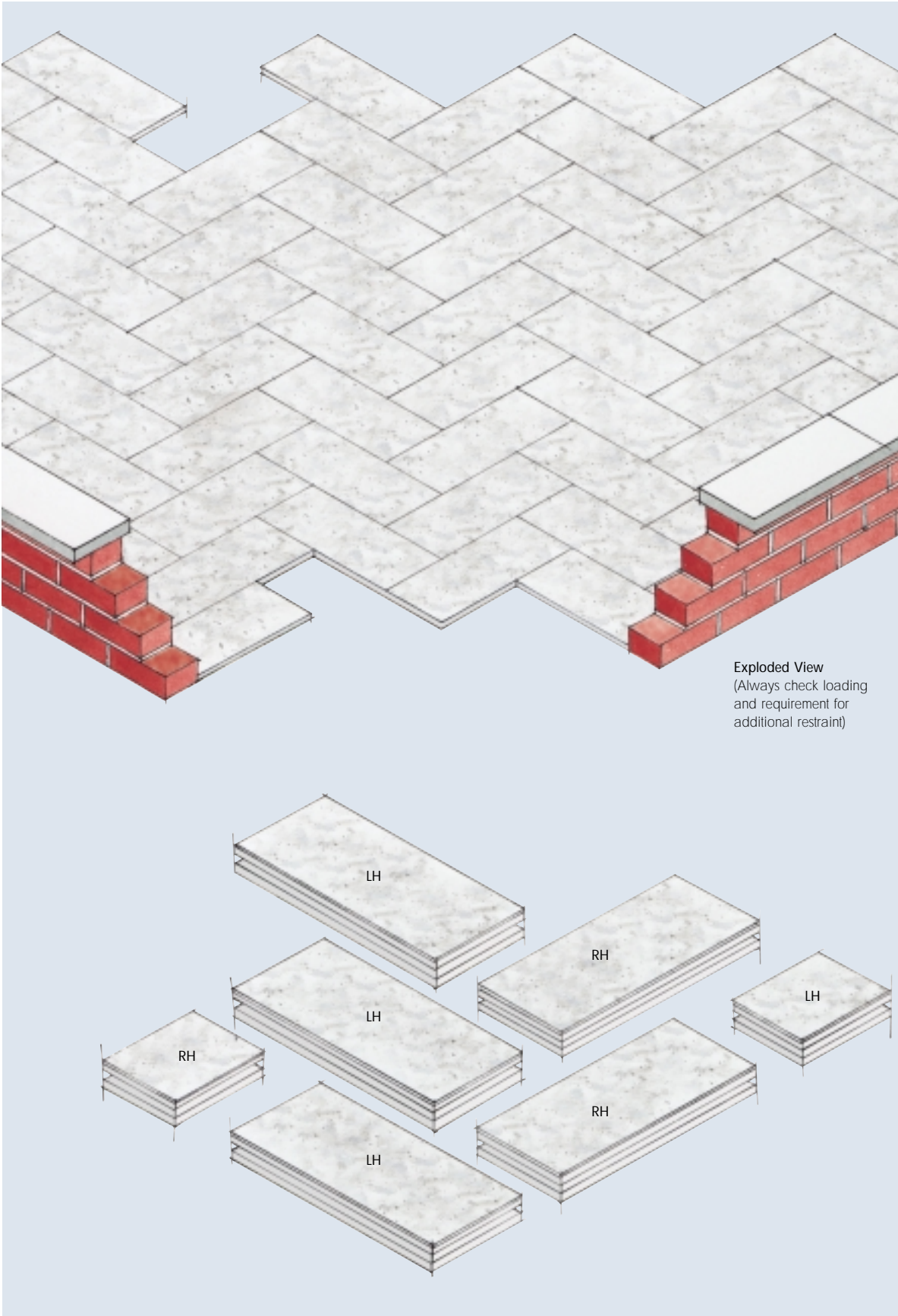
The core of **Kingspan Purlcretechevron** is a high performance rigid extruded polystyrene insulation of typical density 35 kg/m³. The tile is rebated on all four edges to allow an interlock with surrounding tiles, to provide additional self weight restraint.

CFC/HCFC-FREE

Kingspan Purlcretechevron is manufactured without the use of CFCs/HCFCs and has zero Ozone Depletion Potential (ODP).



Figure 5 CHEVRON LAYING PATTERN



Kingspan Purlcretechevron

PRODUCT DATA

STANDARDS AND APPROVALS

Kingspan Purlcretechevron is manufactured to the highest quality standards under a quality control system approved to BS EN ISO 9002: 1994 (Quality systems, Model for quality assurance in production, installation and servicing).



BS EN ISO 9002 : 1994
Certificate No. FM 10697

STANDARD DIMENSIONS

Kingspan Purlcretechevron is available in the following standard size and thicknesses:

Nominal Dimension	Availability
Length (m)	1.2
Width (m)	0.6
Topping Thickness (mm)	10
Insulant Thickness* (mm)	60, 70, 75, 80, 90, 100, 110, 120, 125, 130, 140, 145

* Other thicknesses are available subject to quantity

INSULATION COMPRESSIVE STRENGTH

Typically exceeds 350 kPa at 10% compression when tested to BS 4370: Part 1: 1988 (1996) (Methods of test for rigid cellular materials).

THERMAL EXPANSION

The linear thermal expansion coefficient of the rigid extruded polystyrene insulation element of **Kingspan Purlcretechevron** is 0.07 mm/m.K. when tested to BS 4370: Part 3: 1988 (1996) (Methods of test for rigid cellular materials).

WATER VAPOUR RESISTANCE

Modified to include board facings, the boards achieve a resistance greater than 350 MN.s/g when tested in accordance with BS 3837: Part 2: 1990 (1996) (Specification for extruded boards).

ABSORPTION OF MOISTURE

The rigid extruded polystyrene insulation element of **Kingspan Purlcretechevron** is not sensitive to moisture of any kind. Its surface is water-repellent and there is no capillary suction. The material is also not hygroscopic. Over a 28 day cycle with temperature fluctuating 20/40°C its water absorption is <0.5% when tested to BS 3837: Part 2: 1990 (1996) (Specification for extruded boards).

DURABILITY

If correctly applied, **Kingspan Purlcretechevron** has an indefinite life. Its durability depends on the supporting structure, waterproofing and the conditions of its use.

RESISTANCE TO SOLVENTS, FUNGI & RODENTS

The rigid extruded polystyrene insulation element of **Kingspan Purlcretechevron** is resistant to most dilute acids, and alkalis. It may not be resistant to some solvent-based adhesive systems, particularly those containing methyl ethyl ketone. Adhesives containing such solvents should not be allowed to come into contact with the rigid extruded polystyrene insulation backing of **Kingspan Purlcretechevron**. Edible oils, white oil, petroleum jelly and fuel oil should also be avoided. Organic solvents, petrol, petroleum solvents, and solvent based cold bitumens and or mastic will have a detrimental effect if allowed to come into contact with the rigid extruded polystyrene insulation backing of **Kingspan Purlcretechevron**. In the event of the panels being in contact with harsh solvents, petrol, mineral oil or acids or it being damaged in any other way, it should not be used. If already fixed, they should be replaced.

The rigid extruded polystyrene insulation element used in the manufacture of **Kingspan Purlcretechevron** resists attack by mould and microbial growth.

Neither the facings or rigid extruded polystyrene insulation element of **Kingspan Purlcretechevron** provide any food value to vermin and they are not normally attractive to them.

FIRE PERFORMANCE

Flat roofs incorporating a **Kingspan Purlcretechevron** protected membrane roof insulation system and waterproofed using built-up felt, when subjected to British Standard fire tests, achieve the results given below. Further details on the fire performance of rigid extruded polystyrene insulation products can be obtained from our Technical Services Department (see rear cover).

Test	Result
BS 476: Part 3: 1975 (External fire exposure roof test)	FAA rating

MAXIMUM SERVICE TEMPERATURE

The rigid extruded polystyrene insulation element of **Kingspan Purlcretechevron** should not be brought into direct contact with high temperature heat sources. The maximum service temperature of the rigid extruded polystyrene insulation element of **Kingspan Purlcretechevron** is 75°C.

KINGSPAN INSULATION

Kingspan Insulation offers an extensive range of premium and high performance insulation products, breathable membranes and pre-fabricated / pre-insulated systems for the construction industry. Following an extensive investment programme, Kingspan Insulation is continuing to lead the insulation industry by manufacturing the majority of its insulation products with zero Ozone Depletion Potential (ODP) and quoting thermal performance data in accordance with the new harmonised European Standard.

Kingspan Insulation Limited specialise in the solution of insulation problems. Our range of insulation products which meet the exacting requirements of the construction industry are produced to the highest standards, including BS EN ISO 9002: 1994 and IS EN ISO 9002: 1994. Each product has been designed to fulfil a specific need and has been manufactured to precise standards and tolerances.

INSULATION FOR:

- PITCHED ROOFS
- FLAT ROOFS
- CAVITY WALLS
- TIMBER AND STEEL FRAMING
- EXTERNALLY INSULATED CLADDING SYSTEMS
- FLOORS
- SOFFITS

INSULATED DRY LINING

TAPERED ROOFING SYSTEMS

Kingspan KoolDuct® PRE-INSULATED DUCTING

Kingspan nilvent™ BREATHABLE MEMBRANES

Kingspan TEK Haus™ BUILDING SYSTEM

THE KINGSPAN INSULATION PRODUCT RANGE

THE KINGSPAN KOOLTHERM® K-RANGE

- With a thermal conductivity of 0.018 W/m.K rigid phenolic insulation is the most thermally efficient insulation product commonly available.
- Utilises the thinnest possible insulation board to achieve required U-values.
- Fire performance can be equivalent to mineral fibre.
- Achieves a Class O fire rating to the Building Regulations.
- Achieves the best possible rating of <5% smoke emission when tested to BS 5111: Part 1: 1974.
- CFC-free / available CFC/HCFC-free with zero Ozone Depletion Potential subject to enquiry.

THE KINGSPAN THERMA ZERO ODP RANGE

- With a thermal conductivity of 0.022-0.026 W/m.K zero ODP rigid urethane insulation is one of the most thermally efficient insulation products commonly available.
- Easily achieves required U-values with minimum board thickness.
- Achieves the required fire performance for the intended application.
- CFC/HCFC-free with zero Ozone Depletion Potential (ODP).

THE KINGSPAN STYROZONE™ & PURLCRETE ZERO ODP RANGES

- Rigid extruded polystyrene insulation (XPS) has the highest compressive strength of any commonly available insulant.
- Ideal for specialist applications such as inverted roofing and heavy-duty flooring.
- Easily achieves required U-values with minimum board thickness.
- Achieves the required fire performance for the intended application.
- CFC/HCFC-free with zero Ozone Depletion Potential (ODP).

ALL PRODUCTS

- Their closed cell structure resists both moisture and water vapour ingress – problems which can be associated with open cell materials such as mineral fibre and which can result in reduced thermal performance.
- Unaffected by air movement – problems that can be experienced with mineral fibre and which can reduce thermal performance.
- Safe and easy to install – masks are not required, as Kingspan Insulation products do not produce loose dust or irritant fibres.
- Provide reliable long term thermal performance over the lifetime of the building.

CUSTOMER SERVICE

For quotations, order placement and details of despatches please contact our Building Fabric Insulation Customer Services Department on the numbers below:

UK – Telephone: +44 (0) 870 850 8555
– Fax: +44 (0) 870 850 8666
– email: commercial.uk@insulation.kingspan.com
Ireland – Telephone: +353 (0) 42 97 95000
– Fax: +353 (0) 42 97 46129
– email: commercial.ie@insulation.kingspan.com

TECHNICAL ADVICE

Kingspan Insulation Ltd support all of their products with a comprehensive Technical Advisory Service for specifiers, stockists and contractors.

This includes a free computer-aided service designed to give fast, accurate technical advice. Simply phone our **TECHLINE** with your project specification and we can run calculations to provide U-values, condensation/dew point risk, required insulation thicknesses etc... Thereafter we can run any number of permutations to help you achieve your desired targets.

We can also give general application advice and advice on design detailing and fixing etc... Site surveys are also undertaken as appropriate.

Please contact our Building Fabric Insulation Technical Services Department on the **TECHLINE** numbers below:



UK: – Telephone: +44 (0) 870 850 8555
– Fax: +44 (0) 1544 387 278
– email: techline.uk@insulation.kingspan.com
Ireland: – Telephone: +353 (0) 42 97 95032
– Fax: +353 (0) 42 97 46129
– email: techline.ie@insulation.kingspan.com

LITERATURE AND SAMPLES

Kingspan Insulation produces a comprehensive range of technical literature for specifiers, contractors, stockists and end users. The literature contains clear 'user friendly' advice on typical design; design considerations; thermal properties; sitework and product data.

Available as a complete Design Manual, on CD-ROM or as individual product brochures, Kingspan Insulation technical literature is an essential specification tool. For copies please contact our Marketing Department on the numbers below:

UK – Telephone: +44 (0) 1544 387 210
– Fax: +44 (0) 1544 387 299
– email: literature.uk@insulation.kingspan.com
Ireland – Telephone: +353 (0) 42 97 95038
– Fax: +353 (0) 42 97 46129
– email: literature.ie@insulation.kingspan.com

GENERAL ENQUIRIES

For all other enquiries contact Kingspan Insulation on the numbers below:

UK – Telephone: +44 (0) 870 850 8555
– Fax: +44 (0) 870 850 8666
– email: info.uk@insulation.kingspan.com
Ireland – Telephone: +353 (0) 42 97 95000
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