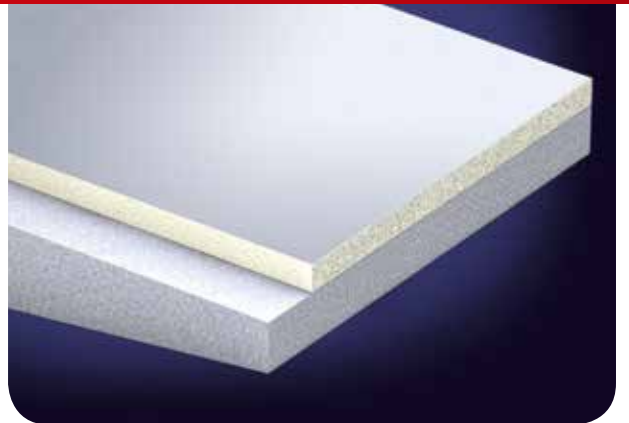




THE
Aspire
solution

Hybrid Tapered Insulation Solution – optimised performance for flat roofs



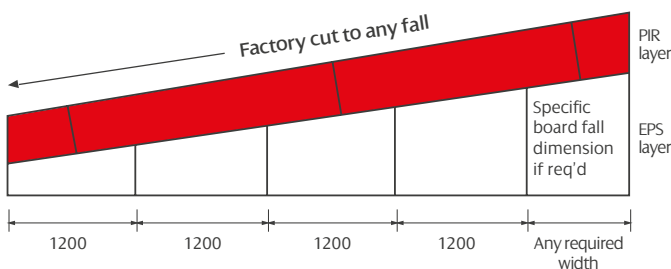
No one insulation type excels in all areas of performance. The ASPIRE Solution combines high performance PIR (polyisocyanurate) insulation and EPS (expanded polystyrene) insulation to provide a bespoke and optimised solution designed to meet a wide range of criteria in both new and refurbished flat roofs.

DESCRIPTION

The ASPIRE Solution utilises tapered EPS 150E insulation to create the required falls, over which a rigid PIR insulation layer is either fully adhered or mechanically fixed, and receives the waterproofing system. The ASPIRE solution is suitable for use with metal, concrete or timber roof decks – eliminating the requirement for other means of creating a fall such as structural falls, timber firings or screed laid to falls.

EPS is manufactured in large format donor blocks, allowing the flexibility of being factory cut into ANY required fall, profile, thickness or dimensions. A total solution thickness of up to 800mm can be achieved by ONLY two layers (EPS & PIR).

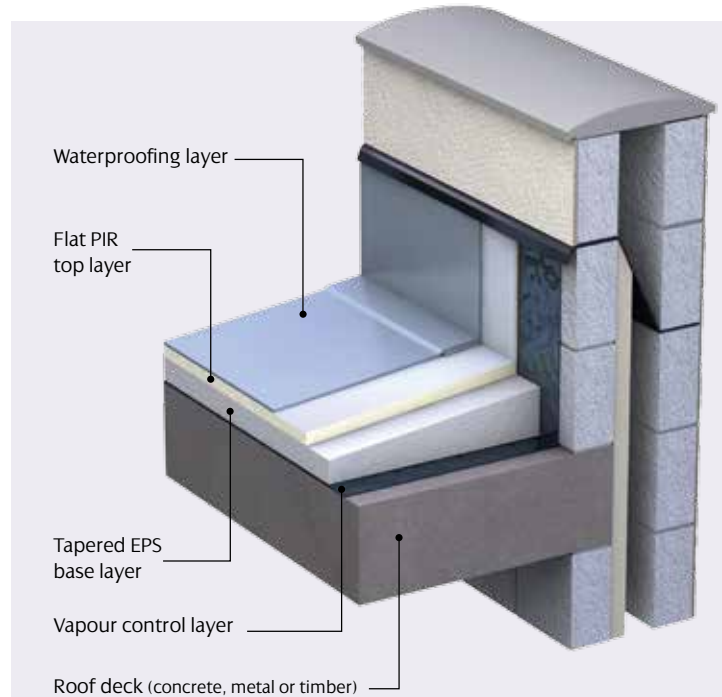
For appropriate projects, the optimum ASPIRE Solution consists of tapered EPS boards, pre-cut to the required project dimensions, overlaid with large format PIR boards. This solution enables faster installation and minimises site generated waste. The large format PIR boards provide a more aesthetically pleasing roof finish as a result of the reduced number of board joints.



Example ASPIRE Solution cross section

The ASPIRE Solution can be supplied in a pre-bonded, single layer on request. This option can reduce installation time further, but should be carefully considered, as some of the benefits of large format PIR boards, as outlined above, can be lost and does not employ the best practice of break bonded joints across multiple layers of insulation.

Speak to our design team for advice on the optimum ASPIRE Solution for your project.



VERY HIGH THERMAL INSULATION



LOW COST RELATIVE TO PERFORMANCE



EXCELLENT ENVIRONMENT RATING



FLEXIBLE: ANY REQUIRED FALL

ADVANTAGES

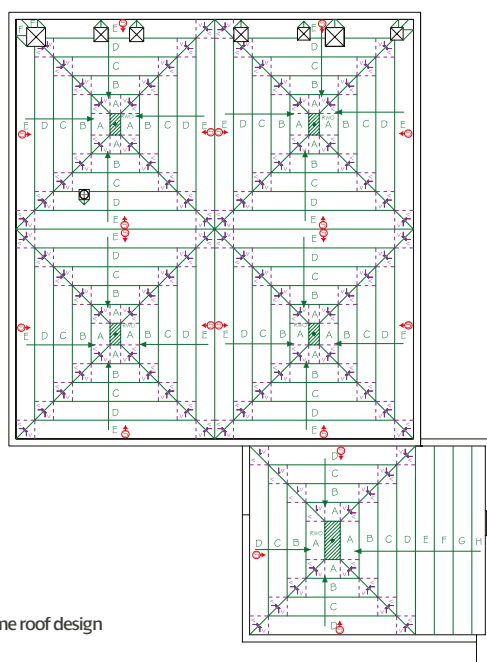
- High thermal performance to thickness ratio
- Precision factory cut to any fall, profile or board dimension
- Compatible with single-ply, bituminous and liquid applied waterproofing systems
- Corresponds to BRE Global Green Guide generic specifications which achieve summary ratings of A (PIR) and A+ (EPS)
- PIR with a certified BRE Global Green Guide rating of A+ is available subject to enquiry
- Quick and simple installation – ideal for fast track construction
- Option to use large format boards allows easier handling, faster installation and fewer joints for improved aesthetics
- Pre-formed valleys and hips are available to assist installation and minimise site waste
- Can achieve Ext FAC when tested to BS476: Part 3
- Cost effective solution
- Available in pre-bonded units
- Recognised and approved by major waterproofing manufacturers

TECHNICAL DATA

	Method	Foil Faced PIR	Tissue Faced PIR	EPS 150E
Thermal Conductivity (W/mK)	BS EN 12667	0.022	0.026 = 25 to 79mm 0.025 = 80 to 119mm 0.024 = 120 to 200mm	0.035
Compressive Strength at 10% Compression (kPa)	BS EN 826	150	150	150
Available Thickness (mm)	-	25 to 200	25 to 200	20 to 600
Water Vapour Resistance (MNs/g)	BS EN 12086: B	100	40	>238
External Fire Exposure	BS 476-3	The ASPIRE Solution achieves Ext FAC* (*build up tested: polyester-reinforced PVC single ply roofing membrane mechanically fixed to system of EPS and foil faced PIR on a plywood deck)		
Summary rating of corresponding BRE Global Green Guide generic specification	-	A**	A	A+

** PIR with a certified BRE Global Green Guide rating of A+ is available, subject to enquiry, but only on two-layer, non-pre-bonded, solutions.

For specific data on the insulation materials used within The ASPIRE Solution, please contact Building Innovation.



Example tapered scheme roof design

U-VALUES

When calculating the overall thermal performance of a tapered insulation scheme, the effective performing thickness needs to be determined. This must be carried out in accordance with BS EN ISO 6946: 2007: Annex C (Building components and building elements – Thermal resistance and thermal transmittance – Calculation method). The required U-Values will be calculated by Building Innovation for each project and will be defined by reference to applicable Building Regulations/ Standards or the specific project's SAP/ SBEM calculation.

SUPPLY & INSTALLATION

The tapered insulation is supplied marked with a board notation corresponding to the Building Innovation tapered scheme design; required hips and valleys are supplied factory cut in pre-mitred form. Any separate PIR flat boards are delivered independently for installation on top of the EPS layer. To maximise thermal performance the PIR flat boards should be laid with edges closely butted together and in a break bonded pattern.

ROOF LOADING & TRAFFIC

The ASPIRE Solution is suitable for limited foot traffic. Walkways should be provided on roofs requiring regular pedestrian access. After the roof has been laid and made watertight, the roof should be boarded out with protective boarding whenever site work is taking place. For more information regarding roof loading please speak to the Building Innovation design office.

WIND LOADING

Wind loadings should be assessed in accordance to BS EN 1991-1-4: 2004 + A1: 2010 Eurocode 1, Actions on structures, General Actions, Wind Actions and the UK National Annex.

ACOUSTIC REQUIREMENTS?

Speak to Building Innovation about the benefits of hybrid solutions utilising mineral fibre and PIR or EPS insulation to attenuate both sound transmission and rain impact noise on flat roofs.



ENVIRONMENTAL

The products used within The ASPIRE Solution are manufactured using blowing agents that are CFC and HCFC-free with zero Ozone Depletion Potential (ODP) and a GWP (Global Warming Potential) of less than 5, which makes them BREEAM compliant. They are also both produced under management systems that are certified to BS EN ISO 14001: 2004, a reflection of their manufacturers' commitments to environmental management. The PIR insulation component of The ASPIRE Solution corresponds to the BRE Global Green Guide generic specification for rigid urethane insulation which achieves a summary Green Guide rating of A, whilst the EPS component corresponds to the BRE Global Green Guide generic specification for EPS insulation which achieves a summary Green Guide rating of A+. PIR with a certified BRE Global Green Guide rating of A+ is available, subject to enquiry, but only on two-layer, non-pre-bonded, solutions.

SPECIFICATION CLAUSE

The insulation shall be The ASPIRE Solution as per Building Innovation scheme ref: _____, comprising a base layer of tapered EPS 150E (expanded polystyrene) and a top layer of rigid PIR (polyisocyanurate) insulation, faced with mineral coated glass tissue/faced with aluminium foil/bitumenised tissue [delete as appropriate], to achieve an overall U-value of ----- W/m²K (calculated according to BS EN ISO 6946: 2007 Annex C). Both products shall be manufactured under management systems certified to BS EN ISO 9001: 2008 and BS EN ISO 14001: 2004. The ASPIRE Solution shall be supplied to a 1:40 / 1:60 / 1:80 / bespoke [delete as appropriate] design fall. It must be installed in accordance with instructions issued by Building Innovation Ltd.

For a complete tapered roof insulation service including: survey, thermal calculation, condensation risk analysis, design, fabrication and supply contact us now



Image courtesy of IKO Polymeric



Building Innovation Ltd

Unit 30 Berrington Road, Sydenham Industrial Estate
Leamington Spa, Warwickshire, CV31 1NB

Telephone: 01926 888808 Fax: 01926 888898

Email: info@building-innovation.co.uk

Web: www.building-innovation.co.uk

