

Insulated Roof, Wall & Façade Systems



Approved to LPS 1181
Certificate Nos. 196a, 200a and 279c
Approved to LPS 1208
Certificate Nos. 186b and 279b



APPROVED



BRITISH BOARD OF AGREEMENT
Certificate No. 05/2418

Building to the Power of



Kingspan®

Insurer Approved **FIREsafe** Systems



The world of construction has never been more challenging than it is today. Not only do we demand functional buildings, we demand that they be aesthetically pleasing, energy efficient, safe, cost effective and sustainable.

Many manufacturers guarantee their products for specific isolated areas of performance.

Few can offer assurance across a whole spectrum of testing standards.

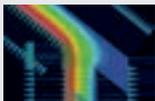
Total Insulated Panel Guarantee

Kingspan insulated roof, wall and façade systems are used for building envelope solutions on industrial, distribution, commercial, leisure, healthcare, education, business and technology parks, retail and domestic building applications.

One Simple Step to Guaranteed Performance:

Kingspan Total Guarantee Assurance covers all of the key performance areas for its insulated roof, wall and façade systems in a single comprehensive package. Performance of the Kingspan panel is guaranteed for 25 years. The products are fully tested to all the relevant building standards, and are covered by the Total Guarantee Assurance.

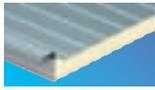
Key Features of Kingspan Total Guarantee Assurance

	<i>page</i>	
Benefits	5	
25 years panel thermal performance guarantee	8	
Panel durability and coatings up to 30 years	10	

Additional Built-in Benefits

	<i>page</i>		<i>page</i>		
Airtight Systems	8		Field Service Engineer Total Support Service	15	
Fire Safe Systems	13		Kingspan enviro care Technical Services	16	
Health & Safety Walkability/Non-Fragility	14		Enhanced Productivity with Ease of Installation	17	
			Comprehensive R&D, Testing & Certification	19	

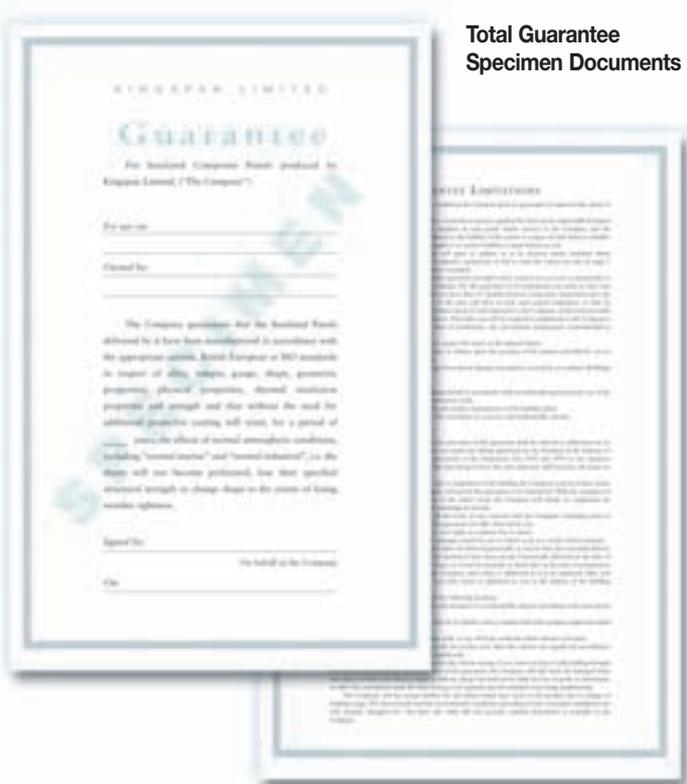
Roof Systems:

KS1000 RW Trapezoidal	
KS1000 SF Secret Fix	
KS1000 TS Slate & Tile Support	
KS500/1000 ZIP KingZip® Standing Seam	
KS1000 LP Lo-Pitch	
KS1000 CR Curved	
Kingspan Roof Tile	
Kingspan Envirodeck™	
KS1000 Polycarb Rooflight	

Wall & Façade Systems:

KS600, 900 & 1000 Optimo™	
KS600, 900 & 1000 MR Micro-Rib	
KS600, 900 & 1000 EB Euro-Box	
KS600, 900 & 1000 FL Flat	
KS600, 900 & 1000 FL-S Stucco	
KS600, 900 & 1000 MM Mini-Micro	
KS600, 900 & 1000 CX Convex	
KS600, 900 & 1000 WV Wave	
KS600, 900 & 1000 LS Longspan™	
KS1000 RW Trapezoidal	
KS1000 FC Box Profile	
Kingspan Thermatile	
Kingspan Thermabrick™	
Kingspan Thermastone	

Total Guarantee Specimen Documents



Ancillaries:

Gutters, Tophats & Flashings	
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Benefits



As part of the Total Guarantee package, Kingspan offers technical support through the design, construction and testing phases to ensure regulation compliance. The Field Service's Engineering Team offers comprehensive on the spot advice, guidance and expertise, as well as liaison with external regulatory and advisory bodies, whilst Kingspan **envirocare** Technical Services provides a free CAD advisory service.

25 years panel structural performance guaranteed

Health & Safety walkability/non-fragility

Panel durability and coatings up to 30 years (see matrix, page 10)

25 years panel thermal performance guarantee and Energy Performance of Buildings Directive (EPBD) optimised

Insurer approved **FIREsafe** systems

Systems designed for excellent airtightness performance





Other Benefits of Kingspan Insulated Roof, Wall and Façade Systems:

- **Safer Construction & Less Time at Height**

On-site Health & Safety is improved through the simple, single fix systems, which quickly provide safe working platforms and less time working at height.

- **Predictability & Rapid Build**

Kingspan insulated panel systems provide predictable costs, specification compliance, construction quality, reliable on-site schedules, 'on time' completion and building handover.

The systems shorten the overall project programme compared to on-site built-up systems, promote higher confidence and provide the opportunity for accelerated construction programmes and thus earlier investment return. The single fix, dry construction method reduces the risk of weather interruption, thereby minimising the potential for programme and cost overrun.

"A further factor in support of composite panels over built-up systems is the potential and probable reduction in site erection time which will have an affect on Main Contractor Preliminary Costs."

"It is envisaged that site erection time could be reduced by a third compared to on site built up systems."

EC Harris, independent report commissioned by Kingspan, June 2005

- **Faster Project Start**

The complete systems are single sourced from an established large-scale, reliable manufacturer, providing faster 'lead-in' and on-site project commencement and expediting programme.

- **Consistent Quality**

Kingspan insulated roof, wall and façade systems provide the consistent quality levels (ISO 9001 : 2000) associated with a world class manufacturer of factory produced building systems.

- **Reduced On-Site Working**

Fewer tradesmen are required for less time and reliance on site and 'wet trades' labour availability is greatly reduced.

- **Integrated Systems**

Kingspan insulated roof, wall and façade systems can be easily integrated with conventional construction methods and materials.

- **Cost Benefit**

Materials waste is minimised, numbers of deliveries reduced and on-site manpower and machine time optimised.

- **Dimensional Accuracy**

Factory pre-engineering guarantees consistent dimensional accuracy of panels and ancillaries.

- **Compliance**

Design specification, regulatory compliance and on-site quality are guaranteed and backed by Kingspan expertise and the assurance of the Total Guarantee.

- **Comprehensive Testing & Certification**

Kingspan insulated roof, wall and façade systems are fully compliant with applicable UK Building Regulations and Standards, as well as property insurers Factory Mutual (FM) and Loss Prevention Certification Board (LPCB) fire certification requirements. Additionally, panel systems within the roof, wall and façade ranges have BBA approval.



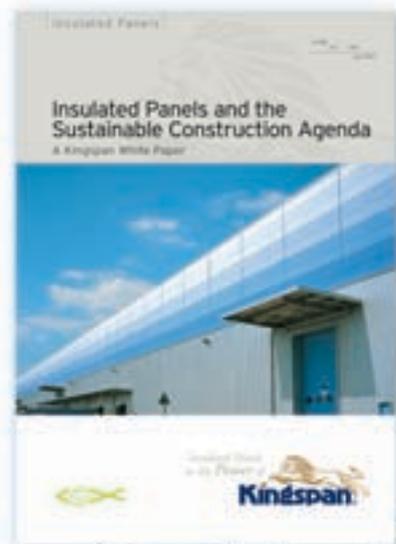
• Sustainability

Kingspan supports sustainable construction and 'Eco' best practice throughout every stage, from design concept to end of life recyclability:

- concept and design phase
- material selection and application (low embodied energy)
- Kingspan's manufacturing plants are ISO 14001 (Environmentally) and ISO 18001 (Health & Safety) accredited
- on-site working and resources
- superior thermal and airtightness performance reduces energy consumption and carbon dioxide (CO₂) emissions by up to 40% per annum, over the building's lifetime, compared to existing traditional on-site construction methods
- HVAC plant and building services can be downsized by up to 40% reducing capital and operating costs over the building's lifetime
- optimises the building's energy performance rating certification
- specific Kingspan **ECOSafe** insulated panels are independently audited and certified by the BRE as Green Guide 'A' Rated (within the highest performing specification section of the Green Guide to Specification)

• Capital and Whole Lifecycle Costs

Project specific cost analyses are available, benchmarking traditional construction methods with Kingspan insulated roof, wall and façade systems.



For your copy of our Sustainable Construction guide, please telephone: +44 (0) 1352 717251.

• Minimising Risk

Kingspan is committed to customer service and satisfaction; the insulated panel systems ensure predictability of costs, programme timings, 'as-built' quality, in use performance and mitigate defect risk.

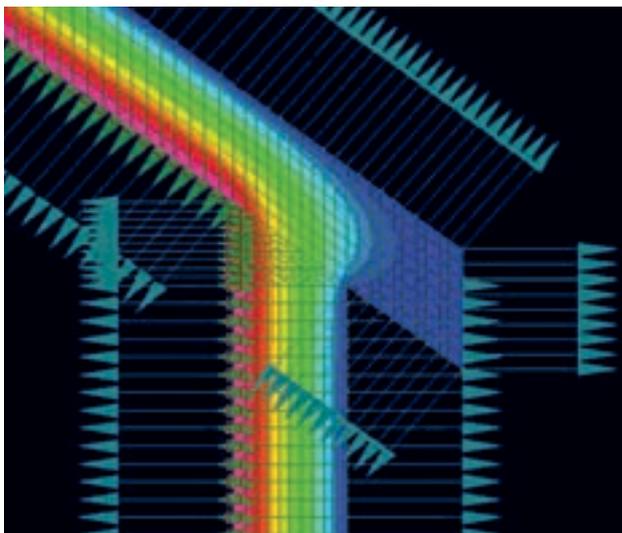
25 Year Panel Thermal Performance Guarantee & Excellent Airtightness

Kingspan insulated roof, wall and façade systems are fully compliant with Building Regulations Part L2 (England & Wales) and Section 6 (Scotland) Technical Handbooks.

The insulation core has a thermal conductivity as low as 0.020 W/m.K, and is one of the most thermally effective insulants commonly available today, performing at the specified level over the lifetime of the building. Factory engineered precision ensures insulation continuity, eliminating gaps and reducing the effects of cold bridging.

System capable of exceeding Approved Documents L2 airtightness standard and capable of achieving 2.25m³/hr/m² at 50Pa.

Technical support is available to ensure compliance and advise on the complexities of the Building Regulations and the Energy Performance of Buildings Directive (EPBD).



Thermal modelling image of an insulated panel roof and wall system indicating total insulation continuity.



Air pressure testing.

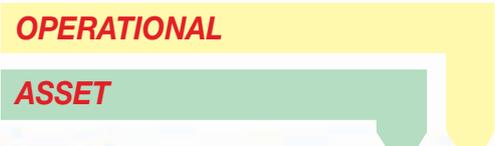
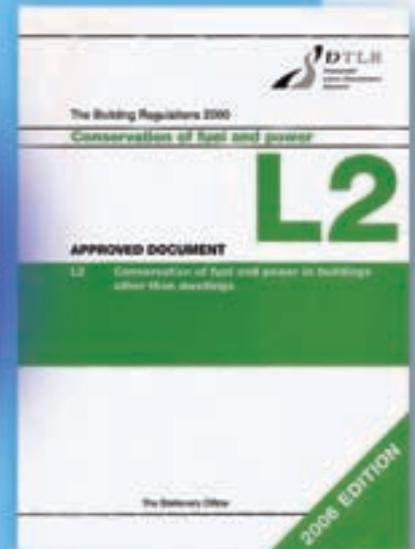


ISO 9001 : 2000 Q.C. System

Factory Pre-engineered Off-site Systems



EU Energy Performance of Buildings Directive



The forthcoming EPBD (Energy Performance of Building Directive) will have a major influence on the Commercial Property Sector in the future because it includes a requirement for building energy labelling including the determination of Operational Ratings for all buildings. The Directive is due to come into force in 2009 and is aimed at improving building energy efficiency and is a cornerstone of the sustainable construction agenda.

This will lead to a new focus on long term energy performance of building fabric systems because any deterioration in performance will be detected and a drop in Operational Rating will undoubtedly affect the building's potential sale value and lettability - disclosure of the Operational Rating will be a legal requirement of the sale/let documentation. Kingspan Insulated Panels have a key role to play because the 25 year thermal performance guarantee is your assurance that the Kingspan panel will not deteriorate in performance leading to a reduction in the Operational Rating. This will help prevent future litigation as a result of deterioration in building energy performance.

Building fabric systems that cannot provide guaranteed long term thermal performance pose a significant risk to the designer, contractor and building owner.

Energy Certificate

Building Energy Performance >		As built:	In use:
		Asset Rating	Operational Rating
Certificate type: Full Building Type: Office Address or part of building: Whole building		A	A
Very energy efficient A B C D E F G Not energy efficient			
Asset rating method: UK National Research Institute Calculation method: UK Office National Research Institute Units used: kg CO ₂ per m ² per year per annum Occupancy level: 90% Equipment use per floor: 100% Heating system type: Gas Heating performance rating: A Thermal performance rating: A Energy performance rating: A Environmental rating: A Environmental rating (for 25 year performance): A Thermal Performance Quality: Not assessed Not assessed		Calculated: 43	Actual: 43
Further information can be found in the Energy Log Book. GB 2006			



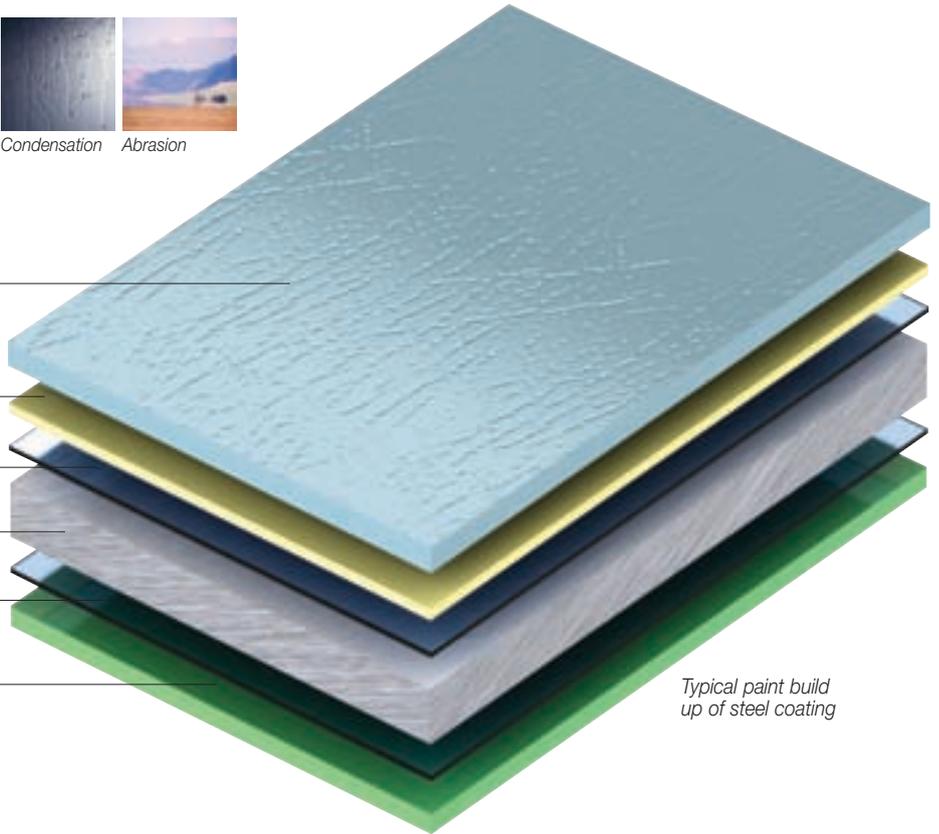
30 Year Coatings Guarantee Options

Kingspan offers the most comprehensive guarantee available for pre-finished steel of up to 30 years to first maintenance and an overall life expectancy of up to 40 years.

Kingspan products provide exceptional durability for all roof, wall and façade applications, offering excellent resistance to corrosion, chemical attack, ultra-violet, humidity and abrasion.



- Top coat
- Primer
- Chemical Pre-Treatment
- Substrate
- Chemical Pre-Treatment
- Protective paint coating



Typical paint build up of steel coating

Please contact the Kingspan Marketing Department on 01352 717251 for details on our colour range and guarantees







Fire Safe Systems*

The Association of British Insurers (ABI) recognise the importance of LPS 1181 approval for external composite panel systems.

The ABI have recently updated its Technical Briefing on sandwich systems which was first published in May 2003. In amended clause 4.4, the ABI have recognised the importance of LPS 1181 approval for external composite panel systems.



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LPS 1181: 2003 Large scale insurer approved in application test.



Propane flame test on Kingspan **FIREsafe** PIR insulation core, after 3 hours.

Identification Plaques

Fire officer and insurance surveyor identification plaques are used for rapid identification of building fabric. Kingspan maintain a project register of all buildings constructed with **FIREsafe** roof and wall systems identified by a special registration number.



Kingspan Firesafe Building Label

Invisible Marking

Invisible marking of panels allows insurance surveyors, architects, specifiers and building owners proof of specification. All Kingspan panels carry identification markings which are printed in ultra violet sensitive ink-jet print. This identification on all panels includes the following information

- Date and time of manufacture
- Core insulant specification

LPCB and FM **FIREsafe** markings are applied on all panels to the underside of the crown overlap on roof panels and adjacent to the female joint on wall panels.



Identification markings are easily read with an ultra-violet torch, which are available free of charge from Kingspan Marketing Services Department.

* Property & Business Protection - Loss Prevention Certification Board (LPCB) LPS 1181 certified insurer approved **FIREsafe** systems deliver certainty of performance and insurability.

Health & Safety

Walkability/Non-Fragility

A report prepared by BROMEL Ltd for the Health and Safety Executive in 2003 indicated that **“In construction and agriculture, falling through fragile roofs appears to be the most important agent in fatalities”**.

Falls from height are the most common cause of death and the second most common cause of major injury to workers.

In 2004/05, 32% of all worker deaths were in the construction industry. There were 71 fatal injuries to workers in construction in 2004/05, the same number as in 2003/04, and 39% of those deaths were due to falls from a height.

1,056 major injuries resulted from falling from a height. This remains the most common kind of accident, accounting for 28% of major injuries to construction employees. *(statistics taken from the Health and Safety Executive statistics web page: <http://www.hse.gov.uk/statistics/industry/construction.htm>).*



Composite Panels - the Health & Safety Benefits

- Composite panels can greatly increase the safety of workers at height in a number of ways. In the first place, once fixed into position, the complete structure of the panel offers a safe, walkable platform from which to work.

*“Liner panels on their own should be considered as fragile unless it has been conclusively proven that they are not. Try to avoid ‘lining out’ the shell to weatherproof the site. This will avoid the need for a second pass at height as well as the presence of a large expanse of potentially fragile material. **Consider the use of composite panels to reduce the need for work at height.**”*
(Source: HSE ‘Height Safe’).

- Secondly, because composite panels require only a single fix process, the amount of time spent working at height is effectively halved, reducing the risk of accidents as well as speeding up project completion times.

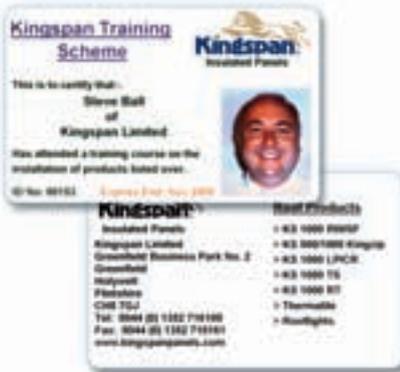
Field Service's Engineering Department Total Support Service Package



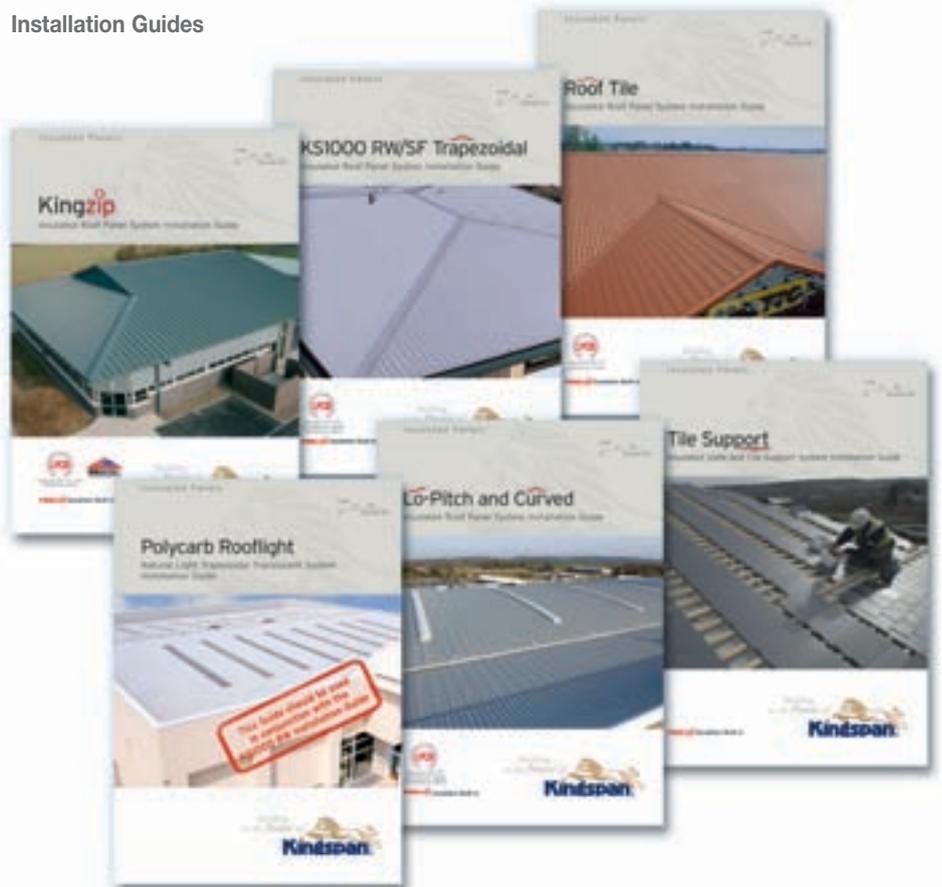
A comprehensive Field Service's Engineering Support Package assists Kingspan customers with:

- Contractor training on the installation of products - both theoretical and practical workshops.
- Kingspan training scheme - issue of identification cards certifying training undertaken.
- Pre-contract technical support and advice.
- Kingspan recommendation, specification and guarantee compliance.
- Mechanical handling solutions.
- Site inspection service, throughout contract period, to ensure product is being installed correctly to specification with reports.
- Guarantee certification.

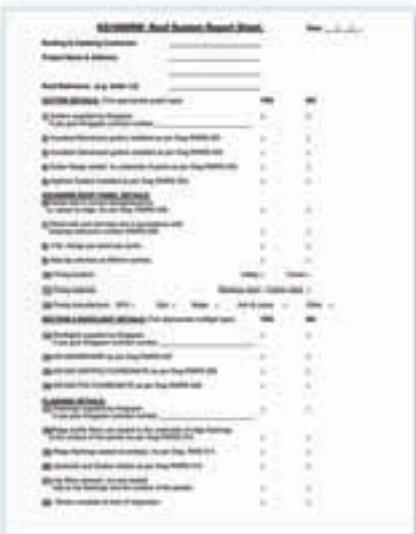
Identification Cards



Installation Guides



Site Checklists



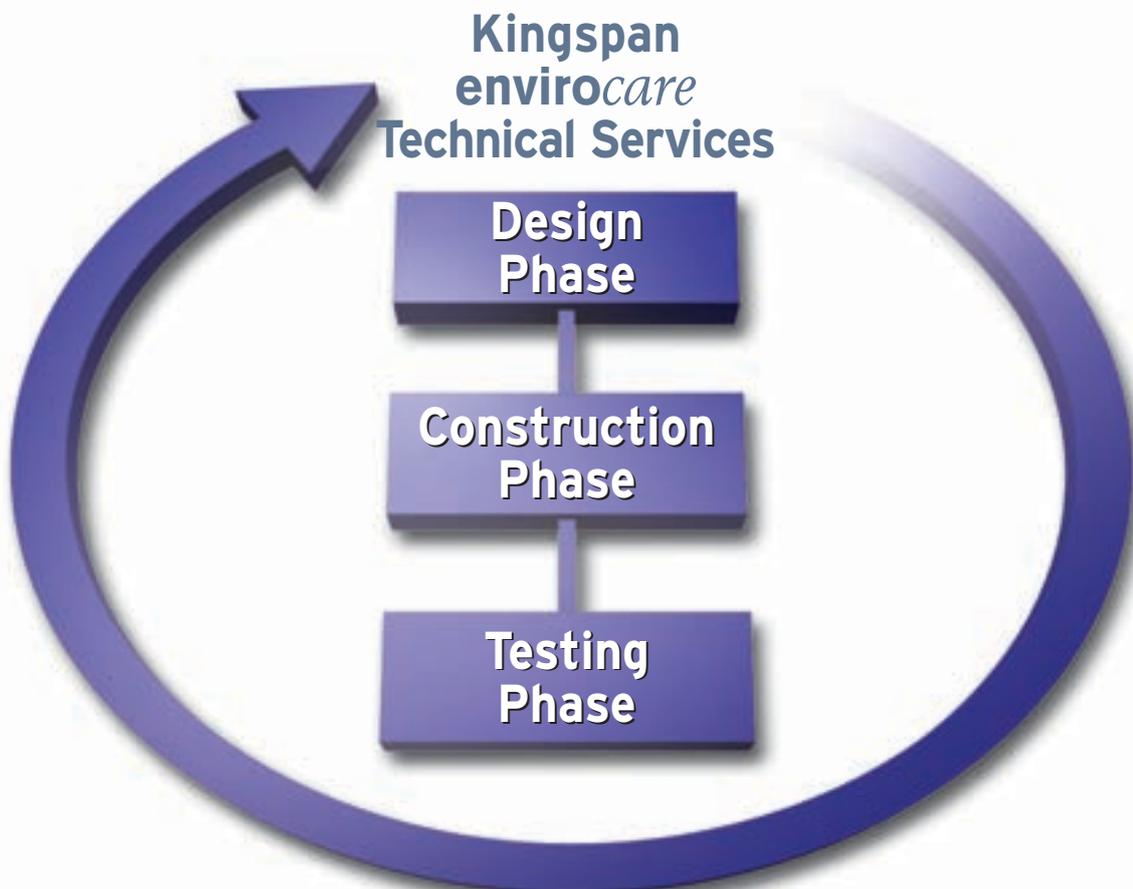
Kingspan *enviro*care Technical Services



Kingspan support all of their products with Kingspan **enviro**care Technical Services for designers, specifiers and contractors.

This includes a free computer-aided service designed to give fast, accurate technical support and advice. Contact us with your project specification and we can provide:

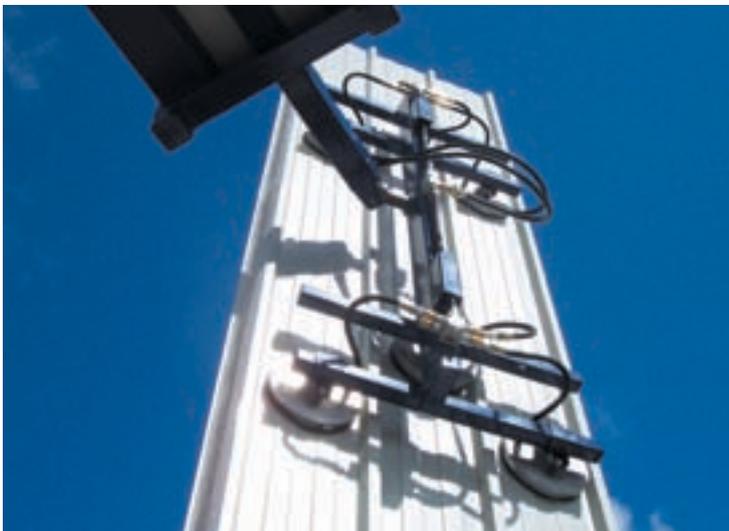
- Project specific model specifications (N.B.S. or Kingspan format)
- Construction/junction details in line with current Building Regulations
- Communication with Regulatory bodies e.g., Steel Tolerances
- Attend design meetings
- Thermal, wind/snow load calculations
- Condensation risk/thermal performance calculations
- Roof drainage calculations
- General building physics issues
- Details approval prior to installation



Enhanced Productivity with Ease of Installation



Kingspan is leading the way in innovative techniques to improve efficiency on-site, and has relationships with mechanical handling companies to aid in the development of new and simple methods to increase productivity. As a result it is now possible to install up to 2,000m²* of insulated panels per day.



* Case study available on request.





Designed, tested, accredited and proven.



R&D, Testing & Certification

Kingspan's range of insulated roof and wall systems are proven for the following:

- Safer construction
- Structural integrity
- Thermal and airtightness
- Fire safety
- Acoustics
- Robustness and durability
- Buildability quality
- Faster build speed
- Environmental sustainability
- Reduced lifetime costs

Product quality is assured through the use of accredited and tested raw materials, high technology manufacturing techniques and rigorous testing to appropriate National and European standards.

All Kingspan products are quality approved to ISO 9001: 2000 and Kingspan's manufacturing plants are ISO 14001 (Environmentally) and ISO 18001 (Health & Safety) accredited.



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APPROVED



Environmental Profiles Scheme
Certificate Number ENP 358

Kingspan Insulated Roof, Wall & Façade Systems

Roof Systems

KS1000 RW
Trapezoidal



KS1000 SF
Secret Fix



KS1000 TS Slate
& Tile Support



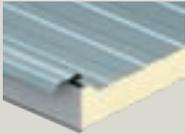
KS500/1000 ZIP
Kingzip® Standing
Seam



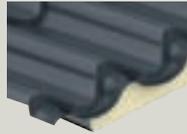
KS1000 LP
Lo-Pitch



KS1000 CR
Curved Roof



Kingspan
Roof Tile



Kingspan
Envirodek™



KS1000
Polycarb Rooflight



Wall & Façade Systems

KS600, 900
& 1000
Optimo™



KS600, 900
& 1000 MR
Micro-Rib



KS600, 900
& 1000 EB
Euro-Box



KS600, 900
& 1000 FL
Flat



KS600, 900
& 1000 FL-S
Stucco



KS600, 900
& 1000 MM
Mini-Micro



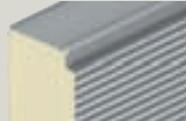
KS600, 900
& 1000 CX
Convex



KS600, 900
& 1000 WW
Wave



KS600, 900
& 1000 LS
Longspan™



KS1000 RW
Trapezoidal



KS1000 FC
Box Profile



Kingspan
Thermatile



Kingspan
Thermabrick™



Kingspan
Thermastone



Ancillaries

Gutters, Tophats &
Flashings



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