

Mechanical Handling Solutions

Making Life Easier on Site



*Insulated Panels
to the Power of*





The last number of years has seen considerable changes for the construction industry and this pace of change is set to be maintained for the foreseeable future. For the industry to continue to thrive, it has to evolve and develop new and innovative techniques to improve efficiencies on site. Kingspan is leading the way in this field and has developed relationships with mechanical handling companies to develop new and simple methods to increase productivity. As a result it is now possible to install an incredible 1,000m²† to 2,000m²‡ of insulated panel per day.

Mechanical handling covers crane hire, remote control handling solutions and self-powered units. The use of these systems rapidly speeds up the installation of panels to create significant time and cost savings.

Over the past 30 years Kingspan have always been at the forefront of the building envelope industry, with new, innovative products and up-to-date regulation & legislation advice available to all. More recently, since the advent of wide-span structural panels, Kingspan has been developing new techniques to increase on-site installation.

The advantages to mechanical handling equipment goes beyond the health and safety aspects of on-site handling and lifting. These techniques also offer significant time savings and earlier project completion, reduced labour costs and the reduced likelihood of damage to panels. Finally, the use of long length panel from eaves to ridge eliminates the installation of smaller length panels with panel end laps on roof slopes, therefore giving greater roof integrity and increased aesthetic appeal.

It is Kingspan's aim to make it easier, safer and more economical to construct on-site using our insulated panels. With this in mind we are developing relationships across the mechanical handling industry which customers are able to leverage.

One of the more recent developments in mechanical handling is a piece of equipment called the CLAD BOY® panel lifter (by 4 Cladding Services), which has been developed specifically for the insulated panel industry. The use of vacuums with soft suction seals helps to avoid damage to panel finishes and surfaces. In addition to this, Kingspan in conjunction with 4 Cladding Services, has developed a revolutionary self-powered turning unit that has specially developed for roof panels - the Rota Boy®. This system allows panels to be rotated from delivered bundles through 180°. Panels are then moved directly into position on the roof without having to be handled manually. 4 Cladding Services is a joint venture partner of Kingspan.

Mechanical Handling Solutions for Insulated Roof Systems

	KS1000 RW	KS500/1000 ZIP	KS1000 LP	KS1000 CR	KS1000 TS	KS1000 RT
Clad Boy®	✓	✓	✓	✓	✓	✓
Rota Boy®	✓	✓	✓	✓	✓	✓
Oktopus	✓	✓	✓	✓	✓	✓
Kera (UK) Ltd	✓	✓	✓	✓	✓	
SkyZip		✓				
Telescopic Forklifts	✓	✓	✓	✓	✓	✓
Mobile Tower Cranes	✓	✓	✓	✓	✓	✓
Crane Forklifts	✓	✓	✓	✓	✓	✓

Mechanical Handling Solutions for Insulated Wall Systems

	KS600/900/1000 Optimo	KS600/900/1000 AWP	KS1000 RW	KS1000 LS	KS1100 CS
Clad Boy®	✓	✓	✓	✓	✓
Rota Boy®	✓	✓	✓	✓	✓
Oktopus	✓	✓	✓	✓	✓
Kera (UK) Ltd	✓	✓	✓	✓	✓
SkyClad 124	✓	✓		✓	
SkyClad M	✓	✓		✓	
Telescopic Forklifts	✓	✓	✓	✓	✓
Mobile Tower Cranes	✓	✓	✓	✓	✓
Crane Forklifts	✓	✓	✓	✓	✓

Please note that this is not an exhaustive list, other mechanical plant companies have similar products available

Blue Sky, a relatively new independent design company, specialises in attachments for mobile elevated work platforms (MEWPs). Their machines like SkyClad enable insulated panels to be moved and installed by fewer people than if done by hand.

The Platform Company have a successful track record of working with Kingspan to deliver improved safety and efficiency to cladding installers, providing MEWPS and specialist access equipment. With the new 2005 working at height regulations now in force, this is now more important than ever.

Oktopus (UK) offers a system comprising of modules that can be bolted together to create the correct size of lifting beam for any Kingspan insulated panel. All models in the range working on the suction-pad principle and all have their own rechargeable electricity supply, making them independent of external power sources.

Kingspan has also developed techniques using the expertise of John Sutch Cranes. They have a fleet of cranes, ranging from 10 tonnes to 250 tonnes capacity, all of which are equally adept at moving insulated panels and includes all-terrain, folding and city cranes.

Lifting Gear Hire, working closely with Kingspan, has developed mechanical handling solutions for insulated panels. In particular, the offloading of long length panels i.e. 18 metres plus, from delivery trucks was an important aspect that has been successfully addressed.

Other similar companies exist in the marketplace, such as Kera, Hewden and Nationwide Access. Kingspan looks forward to developing relationships with these companies in order to make even more mechanical handling solutions available to the marketplace in the future.

Kingspan take very seriously the issue of safe site handling of our insulated panels systems and we see the mechanisation of the installation process for our products as a new economic and site safety benefit to our customers.

Benefits of Mechanical Handling Techniques

- Increased productivity. Realistic to install up to 2000m²‡ of panel a day.
- Handling of long length panels gives you the option of installation from eaves to ridge in one panel length, thus ensuring greater roof integrity and increased aesthetic appeal.
- Full compliance with H&S and CITB due to the removal of manual handling on site.
- Time savings. Being able to install 2000m²‡ of panel a day allows for earlier project completion, meaning contractors are able to complete more projects in a year.
- Significant labour cost savings are provided, through reduced labour and faster completion on site.
- Reduced damage to panels on site.

†Panel used when installing 1000m²/day was KS1000 RW

‡Panel used when installing 2000m²/day was KS1000 LP

4 Cladding Services

4 Cladding Services is best known for its main product – the Cladboy panel lifter. Developed by Dutch manufacturer Via-Vac and industry-proven over several years in mainland Europe, Cladboy entered the UK market with the formation of 4 Cladding Services just over two years ago.

“The Cladboy concept is one machine that can adapt with the aid of accessories to provide a safe, reliable and quick method of handling and installing any type of insulated wall or roof panel,” explains 4 Cladding director Martyn Spence.



“It will lift panels weighing 350 kg and up to 24m long and place them accurately ready for fixing.” This is especially advantageous in roofing applications where long panels can be used to span from ridge to eaves without a joint. “It looks better and it gives the roof better integrity – less joints, less chance of leaks.”

The Cladboy lifter is designed to hang off the lifting machine – a crane or truck boom – and lift each panel with a series of suction pads. It is compact and versatile and operates with a rechargeable power source that allows it to operate independently.

Designed for use with all insulated panel types, Cladboy avoids the need for manual handling and so has positive health and safety benefits. Mr. Spence says that mechanical handling is a logical development in the use of insulated panels in construction.

“The manufacture of these panels is highly automated – they are produced in high tech factories, stacked and packed by machine and dispatched almost without any human touching them. But when they get to site, everybody starts handling them – it doesn’t make sense.”



For further information on 4 Cladding Services full product range contact: Martyn Spence 07811 253334



Safety is another major reason for using a product like Cladboy. “Current health and safety legislation has made all roofs ‘safe zones’ and any development that reduces the number of people working on a pitched roof has clear safety benefits,” says Mr. Spence. “Traditionally, a stack of panels would be lifted by crane onto the roof and then manoeuvred into position manually by a gang of workers,” he explains. “It’s still done this way on some projects, but mechanical handling is definitely the way things are going.”

The company’s most recent development, Rotaboy, was conceived as the direct result of input from Kingspan. “Cladding panels are usually stacked head-to-toe for transport so they take up less space and do not get damaged. This means that every other panel on the stack is upside down and has to be turned through 180 degrees when you lift it up for installation,” explains Mr Spence.



“Kingspan came to us and said ‘can you find a way of rotating the panels’ and of course I said yes – although at the time I didn’t know exactly how we’d do it.” The prototype Rotaboy was developed in Holland and 4-Cladding Services has just taken delivery of its first machines for the UK.

Blue Sky

Blue Sky, a relatively new independent design company, specialises in attachments for mobile elevated work platforms (MEWPs).



Run by partners Paul Cummings and Kevin Gale, this fast-growing company has worked closely with Kingspan for the past two years to develop two key products: Skyclad and Skyzip.

SkyClad is unique in the fact that it can install a batch of up to eight panels (exact number dependent on panel type and MEWP) in one run as opposed to installing each panel one-at-a-time, so there are obvious productivity benefits. In addition to this, the panels are installed safely without the risk of damage to either the panel or the access platform. "Big scissor lifts are routinely used – and abused – by cladding installers and this was an area we knew we could improve upon," says Mr. Cummings.



"When we first set up the business four or five years ago, I went to see what people were doing and to see what we could do to make their job easier," says Mr. Cummings. "We looked at the coming legislation and realised that the HSE was going to come down hard. If we could design a product that removed most of the manual handling and got fewer people working at height then we could reduce the risk of injury and help people comply with the new legislation."

For further information on BlueSky's full product range contact:
Rick Shepherd 07778 545495



The Skyclad concept comes in two versions, SkyClad 124 for installing the first four rows of horizontal cladding panels and after a quick change of modular heads, SkyClad M to fit the panels above row four.

"Machines like Skyclad enable panels to be placed quickly and precisely by fewer people than if done by hand. They are quicker, safer and more productive. And the insurance industry likes them too," says Mr. Cummings. Moreover, you're in a much better position to negotiate lower premiums if you can show that you are employing the best and safest methods currently available. "If there is an accident, the insurance company (and the HSE) will look to see what measures you took to minimise the risk. If they can show that another person is using a method that you could have used to reduce risk, that will work against you."

Blue Sky's collaboration with Kingspan has also produced the Skyzip tool, a hand-held device that quickly and safely joints Kingspan's Kingzip standing seam roof product. SkyZip increases productivity of installation for Kingzip roofing panels as well as having numerous safety benefits over other seaming devices.



The Platform Company

The Platform Company have a successful track record of working with Kingspan to deliver improved safety, productivity and efficiency to cladding installers.



With the new 2005 working at height regulations now in force, this is now more important than ever.

With over 2,000 machines available to hire they have one of the largest fleets of mobile elevated work platforms (MEWPs) in the country. Lee Perry, Sales Director for the Platform Company suggests, "Availability is important but so is a machine's suitability to the task. The Platform Company has a policy of investing in the specific piece of kit to meet a job's needs, and none more so than with cladding."



For further information on
The Platform Company's full product range contact:
Andy Gilbert 07789 033904

Helping to meet every employer's duty to, "...provide equipment as far as is as reasonably practicable for preventing a fall from occurring" (Work at Height Regulations 2005), where equipment doesn't exist The Platform Company develops it. Working in partnership with Kingspan has resulted in some truly world-class innovations. Mr. Perry says, "Really addressing clients' needs is what we're all about. Without listening to organisations like Kingspan, we wouldn't be where we are today."



Adding an electrical power source on the platform was one of The Platform Company's first innovations – eliminating potentially hazardous trailing leads and having to rely on a separate generator.

Reducing the manual handling of panels at height is another key area where they have helped. Working in conjunction with Kingspan and Blue Sky access, the development of the Skyclad system of automated panel positioning using Large Deck Diesel Scissors has been a major breakthrough. Mr. Perry says, "The deck size of our scissors proved crucial to the project's success as to stay within the confines of the platforms safety handrails, operatives need access to the side edge of each panel."



Lifting Gear Hire



LGH has produced four prototype methods which have been demonstrated to Kingspan. These solutions all utilise a modular steel beam that can be altered in increments of 0.5m. They engineered a bespoke lifting rig which carefully integrates components from their modular beam system with shackles, slings and self levelling crane forks. All four prototypes are currently being assessed by Kingspan.

"We are specialist lifting engineers," says Tom Mercer, branch manager at Lifting Gear Hire's Ellesmere Port depot. That is why Kingspan approached LGH to help develop mechanical handling solutions for our insulated panels.



Ever since the introduction of long length structural panels, the question of handling these large items without risk of injury or damage to the panel itself has been a challenge to the installer. In particular, off-loading such panels from a delivery truck was seen as potentially problematic with existing handling equipment.

Kingspan decided to take the lead in finding a solution to this problem and asked Lifting Gear Hire to help. "You're lifting a fairly delicate load that might be 18 or 20m long, and if you lift them with pallet forks there is a possibility they may bend at either end," says Mr. Mercer.

For further information on
Lifting Gear Hire's full product range contact:
Tom Mercer 0151 357 2906



Lifting Gear Hire

"Kingspan asked if we could find a way of picking them up straight and safely, so we've drawn on our vast lifting application knowledge to develop the optimal solution for their needs."



John Sutch Crane Hire

Based in the North West of England, John Sutch Crane Hire runs a fleet of traditional mobile telescopic cranes serving a broad customer base. However it is the firm's Dutch-built Spierings cranes that have excited the interest of the cladding industry. Kingspan, always alert to complimentary technologies that add value to its panel products, has taken a keen interest in the Spierings concept.



"We have three Spierings folding models with horizontal reach capability from 33m up to 50m. Our largest model will lift 1.9 tonnes to a height of 36m at its maximum 50m outreach – and that's a great benefit to a cladding contractor", says John Sutch area manager, Mike Fitton.

Installing an insulated panel roof on top of a multi-storey building can require a crane with plenty of height under the hook and long reach capabilities. The customary way of doing this is to erect a traditional mobile crane inside the building so that it emerges through the roof trusses. Panels can then be lifted and installed around the crane – but obviously not in the area where the crane penetrates the roof structure. "You have to dismantle the crane and then re-erect it in another position to complete the roof", explains Mr Fitton.

The Spiering cranes are mounted on a truck chassis and they are self-erecting. "It takes only 11 minutes to unfold the jib after positioning the crane on outriggers".

The Spierings machine combines the best characteristics of a traditional tower crane and a telescopic mobile crane. It has a vertical telescopic tower and a horizontal jib with the hook suspended from a trolley running the length of the jib. This gives the crane exceptional 'up-and-over' lifting ability, unlike a telescopic mobile crane that has to stand well away from a building to lift over it – even with a luffing fly-jib.

For further information on
John Sutch's full product range contact:
Mike Fitton 0151 236 8880



The cycle times for the Spiering cranes are quicker than conventional cranes and importantly, the operator is positioned above the job, giving him excellent vision over the working area. In addition to this, the Spierings machine, like a telescopic mobile crane, is entirely self-erecting and can travel rapidly from site to site.

For many installers, the Spierings crane is the ideal machine for cladding and roofing installation. "It has all the features they need. It will lift a heavy panel out to a considerable distance and because it is mobile, it only needs to be on site for the short period of time that the panels are being installed".

John Sutch took delivery of its first Spierings crane three years ago and was only the second company in the UK to own one. "It's a revolutionary machine and it takes a leap of faith to see its potential", says Mr Fitton. "It was a hard sell to penetrate the market, but we now have many converts".

JOHNSUTCH

Oktopus



The Oktopus range of suction lifting machines have been effectively used throughout the UK for 10 years and have been adapted over those years to offer a complete range of solutions for roofing and cladding applications. Whether they are mounted on a fork lift, a telescopic handler or suspended from a crane, the Oktopus range can handle any size panel, up to 400 kg's in weight. Now featuring the latest dual suction system technology to bring suction lifters into line with the latest European and British standards (last updated in January 2004), the Oktopus range represents the ever changing world of mechanical lifting.

In common with other equipment suppliers, Oktopus has worked closely with Kingspan on its product R&D. "Five years ago, Kingspan said to us 'we'd like to recommend you, but you'll have



For further information on
Oktopus UK Ltd's full product range contact:
Arran Gould 07885 295020



to be able to handle anything we produce.' Well, we like a challenge!" says Mr. Gould, sales engineer with Oktopus UK. "Back then we were lifting 20m panels; now we're lifting 30m ones."

Most recently, Oktopus has responded to the challenge to design a device that can both lift a large format panel from a delivery stack and rotate it through 180 degrees, ready for the crane to lift it into place. The resulting model, the PT180 Rotator, will flip a panel over quickly, safely and without risk of damage. Now with six basic models in the range, Oktopus can provide lifting and handling attachments for every Kingspan insulated panel application.

"The demand for mechanical handling is very strong because there are so many advantages. The health and safety issue is a major reason why people are moving away from manual handling, but so are productivity and quality."

Mechanical handling is faster and more accurate than the traditional method of man-handling a panel into position. "Fitted to a telehandler, the Oktopus machine gives you millimetre control. You can install so many panels per day that it's scary!" says Mr. Gould. "And the faster you install them, the more the cost per panel comes down. And because you don't have people dragging and twisting the panels, the risk of damage and faulty installation is much lower than traditionally," he added.



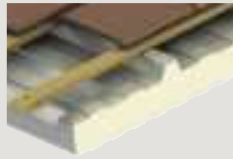
Kingspan Insulated Roof, Wall & Facade Systems

Roof Systems

KS1000 RW
Trapezoidal



KS1000 TS
Tile Support



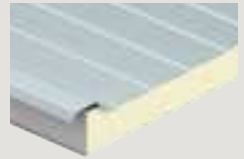
KS500/1000 ZIP
KingZIP®



KS1000 LP
Lo-pitch



KS1000 CR
Curved



KS1000 RT
Roof Tile



KS1000 XD
X-dek®



Wall & Facade Systems

KS600, 900
& 1000
Optimo™



KS600, 900
& 1000 MR
Micro-Rib



KS600, 900
& 1000 EB
Euro-Box



KS600, 900
& 1000 FL-S
Flat (Stucco)



KS1000 MR
Facade System



KS600, 900
& 1000 MM
Mini-Micro



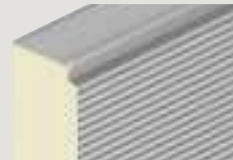
KS600, 900
& 1000 CX
Convex



KS600, 900
& 1000 WV
Wave



KS600, 900
& 1000 LS
LongSpan



KS1000 RW
Trapezoidal



Controlled Environment Systems

KS1100 CS-Rib



KS1100 CS-FL



KS1100 CS-MR



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