THE ROOFING CONTRACTOR'S GUIDE TO VACUUM LIFTING

Choosing the right equipment for safer, more efficient panel installation.

4Cladding Services

Introduction

Roofing and cladding panels are getting longer, heavier and more complex to handle.

Whether you're installing composite roof panels, structural deck, wall panels or integrated solar panels, getting materials from the delivery pack into their final position can present significant manual handling and installation challenges.

Vacuum lifting equipment can help reduce manual handling and give installation teams greater control when lifting and positioning panels.

But choosing a vacuum lifter isn't simply a case of checking the weight of the panel against the capacity of the machine.

Panel profile, dimensions, surface, installation orientation and site conditions can all affect the equipment and configuration required.

This guide covers the key things roofing and cladding contractors should consider when planning a vacuum lift.

1. How does a vacuum lifter work?

A vacuum lifter uses suction pads to create a secure connection between the lifting equipment and the surface of the panel.

The lifter is positioned on the material and a vacuum pump removes air from beneath the suction pads. This creates the vacuum required to hold the load.

Once the correct vacuum level has been achieved, the panel can be lifted and manoeuvred into position using suitable lifting equipment.

After the panel has been safely positioned and supported, the vacuum is released and the machine can be removed.

Professional vacuum lifters can also incorporate safety features such as vacuum reserves and warning systems.

IMPORTANT: Achieving suction does not automatically mean a machine is suitable for the lift. The vacuum lifter, suction pads and configuration must be suitable for the specific panel and application.



2. Why use vacuum lifting for roofing and cladding?

Large roofing and cladding panels can be difficult to handle manually, particularly when working at height or installing long panels.

Using suitable vacuum lifting equipment can help contractors:

Reduce manual handling

The machine takes the weight of the panel during the lift, reducing the physical handling required from the installation team.

Improve control

Panels can be supported during lifting and positioning, helping installers control the material as it approaches its final location.

Handle longer panels

Vacuum lifting configurations can be adapted to accommodate different panel dimensions and applications.

Improve positioning

Greater control can make it easier to accurately position panels ready for fixing.

Reduce the potential for panel damage

Correctly configured vacuum equipment lifts using suction pads rather than requiring conventional lifting attachments to be fixed to the panel.

3. What can roofing contractors lift?

Vacuum lifting equipment can be configured for a wide range of roofing and cladding applications.

These can include:

- Composite roof panels
- Composite wall panels
- Sandwich panels
- Structural deck
- Insulated guttering
- Long-span panels
- Curved panels
- Solar-integrated roofing panels such as Kingspan PowerPanel
- Other compatible profiled panels

> **The important word is compatible.**
>
> **Two panels may look very similar but require different suction pads or machine configurations because of differences in their profile or surface.**
>
> **Always confirm compatibility before the lift.**

4. Choosing the right vacuum lifter

For roofing and cladding contractors, the VIAVAC Clad Boy range provides different options depending on the application.

Clad Boy CB4

The CB4 is a versatile vacuum lifter for roof and wall panel installation and can be configured for a wide range of composite panels.

It can also be configured for specialist applications including structural deck and Kingspan PowerPanel.

Clad Boy CB5

The CB5 is a dual-circuit vacuum lifter designed for roof and wall panel installation.

It can also provide a solution for applications where panel size and site conditions create additional lifting challenges.

Rota Boy

Some projects require panels to be turned as part of the handling process.

The Rota Boy combines vacuum lifting and panel rotation, reducing the need to manually turn suitable roof panels before installation.

Other panel-handling equipment

The vacuum lifter is not necessarily the only equipment worth considering.

Depending on the project, additional solutions may help with moving panel packs, positioning materials or overcoming restricted access.

The best solution should therefore be based on the complete installation process rather than simply selecting a machine from a capacity figure.





5. It's not just about weight

One of the biggest mistakes when specifying vacuum lifting equipment is looking only at the panel weight.

A panel weighing 300 kg does not automatically mean that any vacuum lifter with a capacity greater than 300 kg is suitable.

Before equipment is selected, consider:

Panel manufacturer and product

Providing the exact manufacturer and panel type can help identify known profiles and configurations.

Profile

The ribs and shape of a panel determine where suction pads can be positioned and whether the correct seal can be achieved.

Length and width

Long panels behave differently from short panels, even when their overall weight is similar.

Surface

The suction system needs to form an appropriate seal against the panel surface.

Installation orientation

Is the panel being installed horizontally, vertically or at an angle?

Roof pitch

The installation angle may influence how the panel needs to be handled and configured.

Site conditions

Access, working height, crane position and environmental conditions all need to be considered when planning the lift.

> **Send the panel specification or technical drawing when requesting equipment. It can help the supplier identify the appropriate machine, suction pads and configuration.**

6. Why suction pads matter

Suction pads are a critical part of the lifting system.

Different panel profiles can require different pads and pad positions to achieve the correct seal.

This is particularly important with profiled roofing panels.

Small differences in ribs, crowns and panel geometry can mean that a standard suction-pad arrangement isn't suitable.

Never assume that because a machine has previously lifted one manufacturer's panel it can automatically lift a similar-looking product from another manufacturer.

Before the equipment arrives on site, confirm:

- Panel manufacturer
- Panel model/profile
- Surface
- Panel dimensions
- Panel weight
- Required installation orientation

> **Getting this information right at the beginning can prevent problems when installation starts.**

7. Long panels and exposed sites

Long-span roof panels present their own handling challenges.

As panel length and surface area increase, factors such as wind can have a much greater effect on the load.

This is particularly important on exposed sites.

A vacuum lifter can provide controlled support across the panel, but the lifting operation still needs to take account of site conditions, equipment limitations and the manufacturer's instructions.

Wind limits should always be observed.

For particularly challenging projects, discuss the application with the equipment supplier before the hire begins rather than attempting to adapt the setup once the machine is on site.



8. Structural deck

Structural decking sheets can be large, heavy and awkward to position, particularly when working at height.

Mechanical vacuum lifting can reduce the amount of manual handling involved and provide greater control when positioning sheets.

The **Clad Boy CB4** can be configured for structural deck installation, allowing suitable decking sheets to be lifted and positioned from above.

For structural deck projects, contractors should provide details of the decking profile, dimensions, weight and application so the appropriate configuration can be confirmed.

Operators carrying out structural deck work should also complete the appropriate CB4 roof training before using the equipment.

9. Handling Kingspan PowerPanel

Solar-integrated roofing panels introduce additional considerations.

A Kingspan PowerPanel should not simply be treated in exactly the same way as a conventional composite roofing panel.

The integrated PV modules need to be considered when positioning the vacuum lifter and when removing it after the panel has been installed.

Incorrect positioning or handling could damage the solar modules even if the underlying panel itself remains undamaged.

The correct Clad Boy configuration should therefore be confirmed before installation begins.

> If you're installing PowerPanel, provide the full panel specification when discussing the project with your vacuum lifting supplier.



10. Safe use starts before the lift

Vacuum lifting can reduce manual handling, but the equipment still needs to be selected, inspected and operated correctly.

Before lifting:

- Confirm that the machine and configuration are suitable for the panel.
- Inspect the equipment and suction seals for signs of damage.
- Assemble the machine according to the manufacturer's instructions.
- Check the machine's operating status and warning systems.
- Make sure the work area is suitable for the planned lift.
- Follow the lifting plan, risk assessment and site procedures.
- Ensure operators have received the appropriate training.

> Never continue with a lift if there is uncertainty about the equipment, configuration, vacuum seal or site conditions.

11. Hire or buy?

For many roofing contractors, hiring provides access to different configurations as projects and panel types change.

Hiring may suit you if:

- Your panel types vary from project to project.
- You only need a vacuum lifter periodically.
- You need a specialist configuration for a particular job.
- You don't want to maintain your own fleet.

Buying may suit you if:

- You install panels regularly.
- You frequently work with similar panel types.
- Equipment utilisation is consistently high.
- You want a machine permanently available to your teams.

> 4 Cladding Services provides vacuum lifting equipment for both hire and purchase, as well as technical support, servicing and training.

12. Your pre-hire checklist

Before you enquire, have you got...

- [ ] Panel manufacturer
- [ ] Panel/product name
- [ ] Panel profile
- [ ] Panel length
- [ ] Panel width
- [ ] Panel weight
- [ ] Roof or wall application
- [ ] Roof pitch or installation angle
- [ ] Quantity of panels
- [ ] Installation height
- [ ] Crane or telehandler information
- [ ] Site/access information
- [ ] Required hire dates
- [ ] Panel specification or technical drawing
- [ ] Details of any unusual site conditions

Don't know all the answers?

That's fine. Send us the information you do have, along with your panel specification or drawings, and our team can help identify the appropriate vacuum lifting solution for your project.

Planning your next panel installation?

From standard composite roof panels to long-span sheets, structural decking and specialist applications, getting the correct lifting equipment and configuration in place before installation can make a significant difference on site.

> **Talk to the 4 Cladding Services team about your next project.**

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