



by Liniar



Meet Alumina...

...the unique aluminium bi-folding door system with beautifully sculptured frames and optional foiled finishes, spanning apertures up to 6m wide and sashes 2.5m high.

A new-generation, technically advanced aluminium bi-fold system, Alumina has been designed by the same team as the innovative Liniar window suite.

Alumina is a highly distinctive sculptured bi-fold door, combining superb aesthetics, unparalleled quality and the utmost security to add uncompromising style to any property.

As you would expect, Alumina is fully accredited to Secured by Design, PAS24 and BS 6375. Alumina is compliant with Part Q, making it ideal for new builds, extensions and large scale projects.

- ✓ True aluminium bi-folding doors up to 6m wide and 2.5m high.
- ✓ Fully matches the sculptured lines of Liniar PVCu windows.
- ✓ Optional foiling to exterior, interior or both.
- ✓ Choice of thresholds available - including Part M compliant options.
- ✓ Thermally efficient – U-values as low as 1.2W/m²K.
- ✓ PAS24, Secured By Design, Part Q compliant.
- ✓ Fully guaranteed



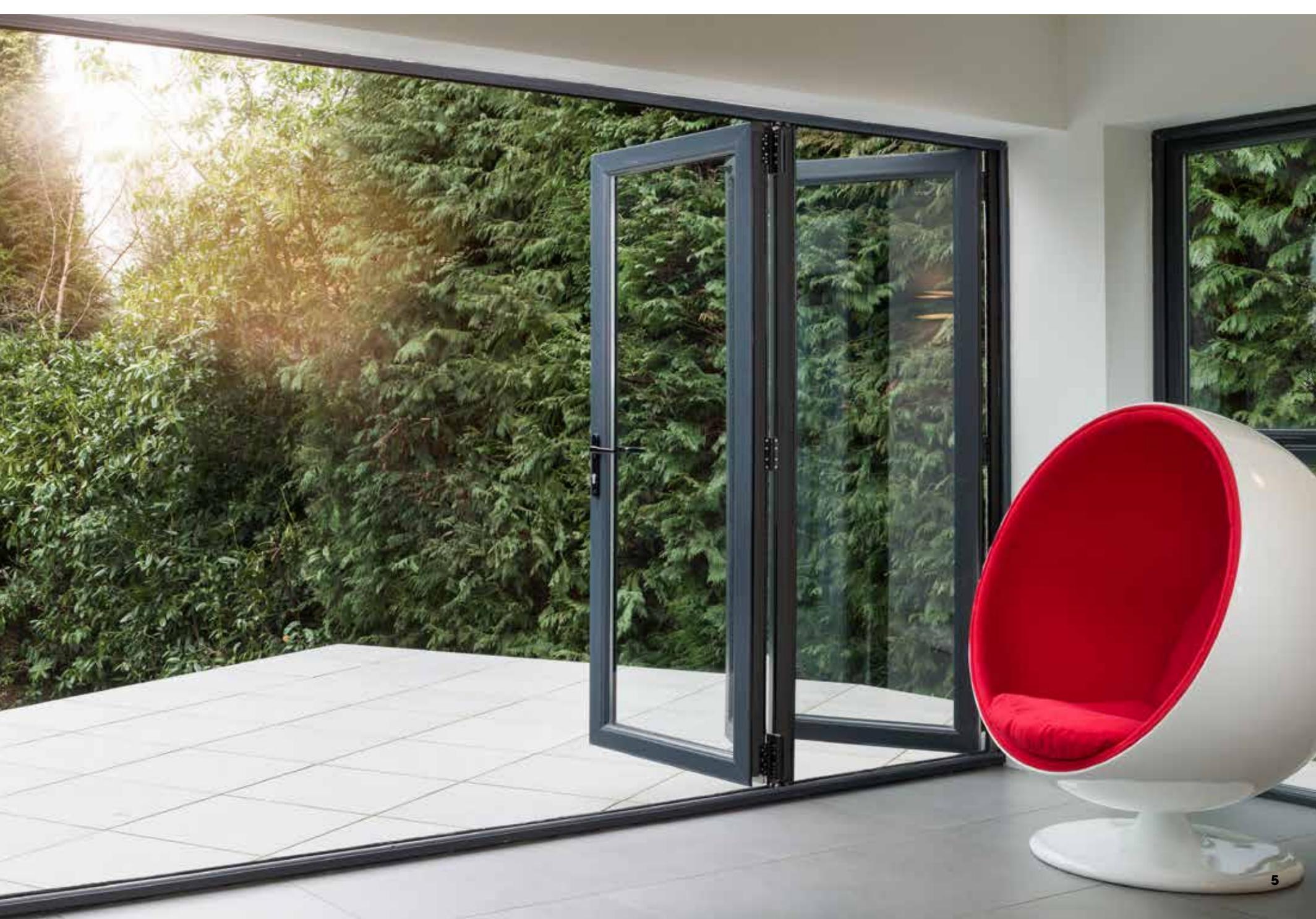
Sleek
Strong
Smooth
Beautiful
Warm

The only foiled aluminium bi-fold on the market, Alumina matches perfectly with Linar PVCu windows, with the foils offering a unique warm touch finish.

Alumina's strength and size makes it ideal for a wide range of projects, from extensions and self builds to large scale commercial use.

With U-values as low as $1.2W/m^2K$, Alumina also offers higher thermal efficiency than other aluminium bi-folding doors, thanks to its innovative patented thermal lock – helping to keep more of the heat inside your property, reducing energy bills.







Uniquely designed by experts

Unlike other aluminium bi-folding doors, Alumina has been designed using already patented principles. The ModLok™ modular locking system was developed by Liniar for its PVCu bi-folding doors, achieving PAS24 security accreditation for its innovative reinforcement, lock and end plate.

Alumina takes this methodology and turns it into a patented combined lock and thermal insert – enhancing energy efficiency and enabling Alumina bi-folds to reach U-values as low as 1.2.



The same tried and tested technology is used in Alumina's rolling mechanism and track, with stainless steel rollers moving effortlessly along a superbly engineered track. Ergonomic handles mean Alumina doors are family friendly and can be operated by all members of the family with ease.

Discreet magnets ensure the doors are held together in the open position; and folding keys avoid any problems when keys are left in the locks.

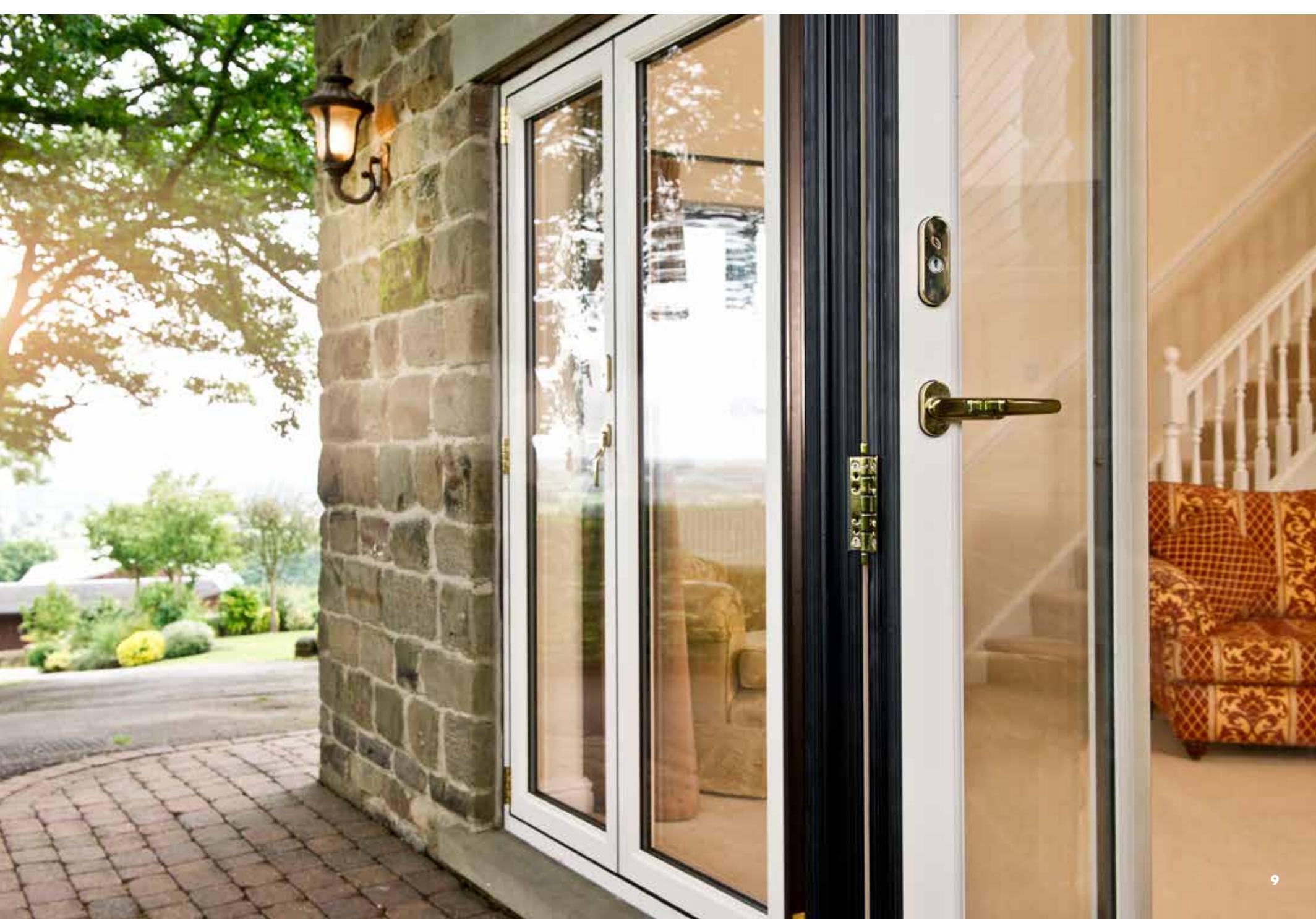


Alumina - a new concept

The Alumina bi-fold is a 'true' aluminium door - able to span up to 1.2 meters wide per sash and 2.5 metres high, with optional warm-touch foiled finish and superior U-values - yet manufactured in the same traditional way as other aluminium systems.

Alumina takes all the benefits of an aluminium door and adds extra features to make it the perfect choice where you need strength with size.





Strength with size

Commercial and heavy-duty applications require greater strength, with wider and taller panes of glass and bigger spans – and aluminium is perfectly placed to meet these requirements.

Alumina by Linar is a true aluminium door, manufactured with standard aluminium machinery. It achieved PAS24 enhanced security accreditation at the first attempt, and holds Secured By Design status, even with panes spanning up to 1.2 metres wide and 2.5 metres high.



Foiled finishes

Like other aluminium bi-folds, Alumina by Linar can be painted in just about any powder-coated colour you can imagine.

What makes Alumina different is that you can also choose a beautiful woodgrain or flat foiled finish for your doors.

The high quality foils applied to Alumina doors are factory fitted by Linar using the latest high tech machinery and are guaranteed by the manufacturer for a minimum of 10 years.

As doors are manufactured to your bespoke specification, you could choose to have a powder coated interior and a foiled exterior - or foiled on both sides.

This means if you have foiled PVCu windows in your property, you can achieve a perfect match.





Fully matching

Alumina by Liniar bi-folding doors have been designed to perfectly complement the whole spectrum of Liniar products. For the first time, you can choose cost effective, thermally efficient PVCu windows to match an aluminium bi-folding door

Manufactured from our innovative multi-chambered PVCu profile, Liniar windows are well renowned for providing exceptional thermal efficiency, strength and security – delivering peace of mind as well as a sleek, stylish finish to any property.

Patio and French doors are also available to add a touch of class to a home. Utilising Liniar's industry-leading ModLok™ technology, you'll be amazed at how different the stunning Liniar patio door is from others on the market.

For a truly luxurious finish, Liniar conservatory and lantern roofs can be designed to suit almost every type or building. All meaning that Liniar's whole sleek, stylish range is designed to match beautifully for a gorgeous finish.

Other Alumina products

Residential door

The true aluminium make-up of Alumina is perfect when fabricated as a stand-alone residential door, complementing the style of the Liniar PVCu flush sash system.

Ideal for commercial or heavy duty applications, Alumina offers added strength and security.

French doors

Alumina French doors offer an alternative to PVCu for wider apertures with panes able to span up to 1.2m wide.

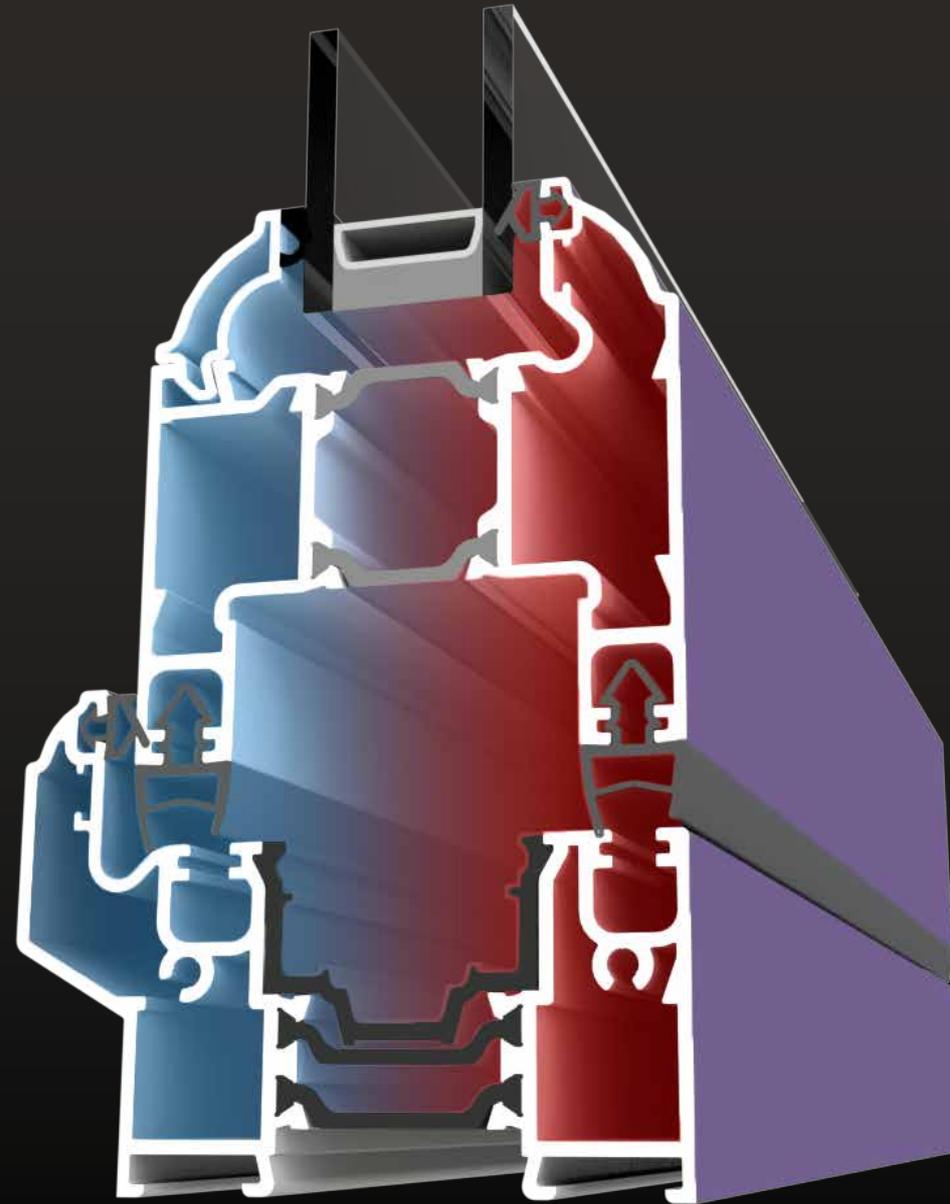
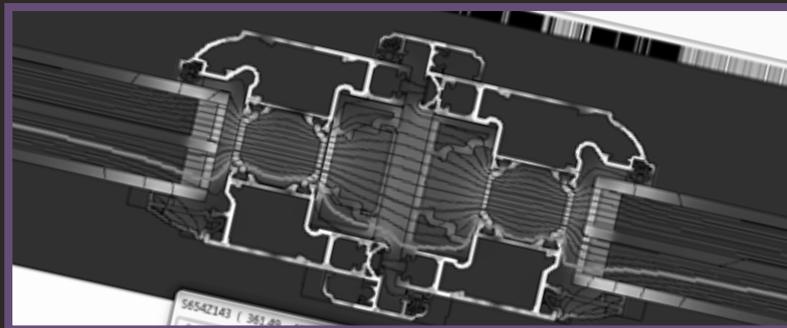
The thermal polyamide lock, thermal insert and triple glazing option, enables Alumina doors to reach U-values as low as $1.2\text{W}/\text{m}^2\text{K}$ whilst meeting PAS24 and Secured by Design requirements making all Alumina doors Part Q compliant.



Superior U-values

The Liniar range is renowned for its energy efficiency - Alumina is no different. Pushing the boundaries of thermal performance, the team created a system designed from the ground upwards with tomorrow's thermal performance requirements; a feature not usually compatible with traditional aluminium windows or doors.

With 28mm double glazed and 36mm or 40mm triple glazed options available, Alumina offers 'true' U-values as low as $1.2 \text{ W/m}^2\text{K}$, thanks to its patented innovative thermal lock and large thermal breaks.



One piece lock

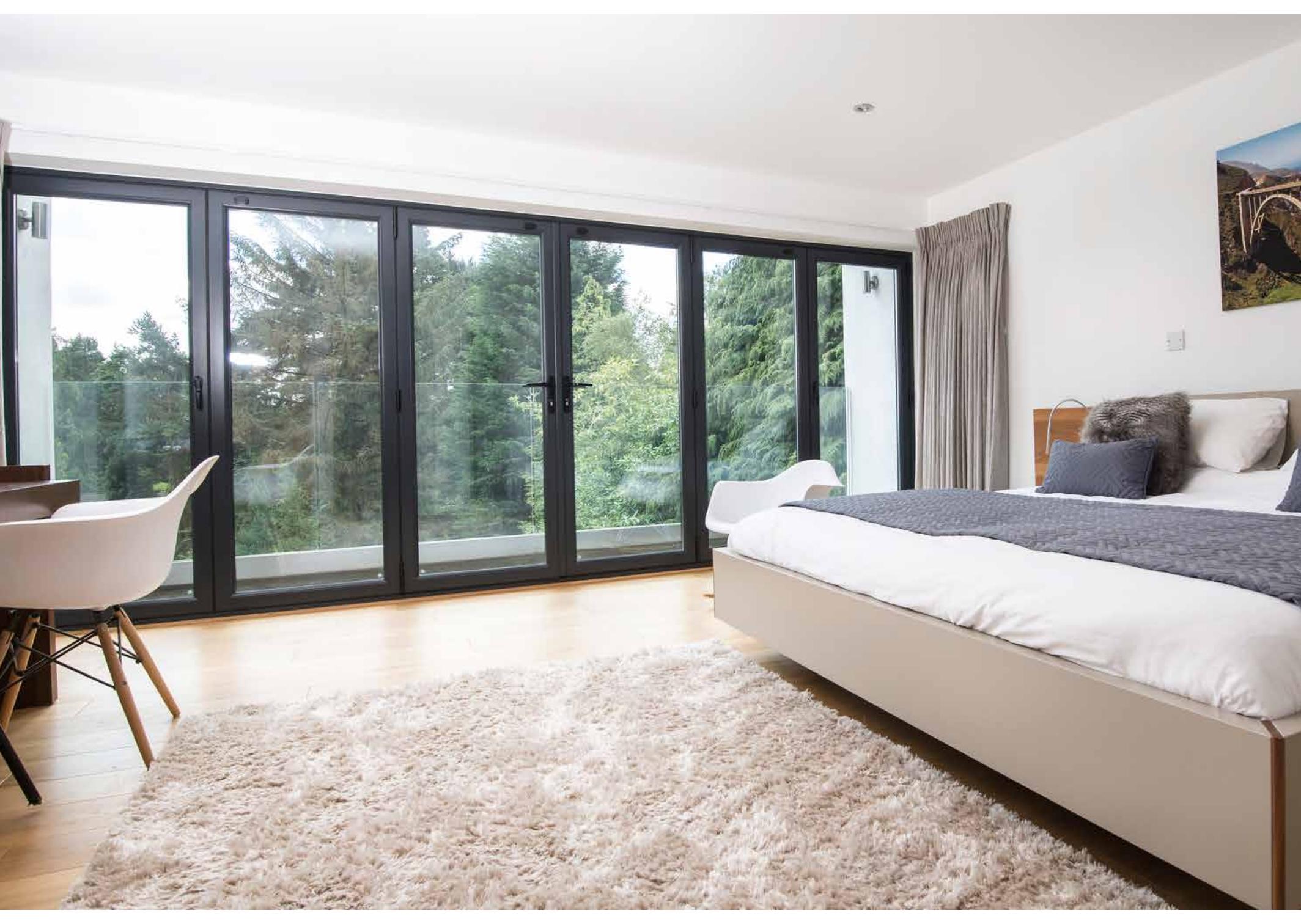
With Alumina, you can be sure of the highest security. Its suite of hardware follows the same principles as the Liniar ModLok™ bi-fold system, including multiple bi-directional locking points, shootbolts that secure firmly into the track, built-in anti-lift features and anti-bump cylinders for additional peace of mind.

Alumina also comes with a patented combined lock and thermal insert giving it its low U-values and high energy efficiency.

Designed from scratch by the Liniar team, the innovative lock combines the ultimate specification of security with a high strength engineering polymer lock body – so the lock itself acts as a thermal break, boosting the door's thermal performance compared to a traditional aluminium door.

Alumina's one piece lock gives clean lines and an unrivalled lock appearance, meaning Alumina doors are just as beautiful when they are in operation as when they are closed.





Fully accredited

Not only are Alumina bi-fold doors the most attractive and thermally efficient on the market, they've been designed to exceed all relevant building regulations, holding the following accreditations:

Secured By Design

Products designed with exceptional security features and confirmed as meeting the requirements of the Association of Chief Police Officers.

PAS24

The British Standard for Enhanced Security Performance, PAS24 testing shows every component has been subjected to a series of tests demonstrating enhanced security performance.

BS 6375

Parts 1, 2 and 3 of British Standard BS 6375 are the requirements for weather performance testing, inclusive of wind loading, functionality testing and cyclic testing.



Choosing a bi-fold door

Before you invest in a bi-fold door, it's important to consider a number of different options. Material is the first consideration, and Liniar's PVCu ModLok™ bi-fold system is worth considering for apertures with sashes up to 2.15m high.

If you've decided to go ahead with aluminium bi-folds for larger sized apertures, read on.



Where are the doors located?

If your property is exposed, subject to high winds and inclement weather, you may wish to order a set of doors with a lower U-value, or even with triple glazing. This means they will be more efficient at keeping the cold outside.

You may also find a standard threshold more appropriate; low thresholds can be fitted but will not offer as great a degree of weather tightness.



Do the doors need to match your windows?

If you have PVCu windows on the same elevation of the property, you may wish to select a fully matching aluminium bi-folding door.

With Alumina, you can choose from a wide range of foiled finishes, or you can ask for a powder-coated finish in almost any colour.

See page 26 for more details.



Should doors open inwards or outwards?

If you wish to maximise space inside your room, bi-folding doors that fold on the outside will usually be preferable.

However your outdoor space may restrict what's possible, so you can always select doors that open inwards if necessary. Consideration should be taken for internal furnishings and curtains.



What is the size of your aperture?

Alumina bi-folding doors are made to order, with a maximum sash height of 2.5m.

Please ask for advice from your Liniar fabricator regarding the width and the number of panes possible within the space available. The general rule of thumb is to go for as few panes as possible – you'll have more glass with less visible frame, and the cost should be lower too.



Will the door be used as a main entrance?

If so, you may wish to consider a set of bi-folds with one door that opens independently of the other panes, like a normal hinged door - avoiding the need to fold back the full set each time.

This may be appropriate for letting pets outside regularly, for example.



Do you need low threshold access?

There are three types of threshold available for the Alumina bi-folding door – none of which need to involve any excavation work, as they've been cleverly designed to sit on top of existing flooring.

You can also choose a half-tray, so your interior floor can fully butt right up to the doors.

See page 28 for more details.

Configurations

The Alumina bi-folding door range has a wide variety of options when it comes to sizes and opening configurations – available from 1 pane wide up to 7 panes.

Our door pane numbering works like this:

- The first number shows the number of doors in total within the frame.
- The second number shows the majority of doors folding back to either left or right.
- The third number shows the balance of doors opening in the opposite direction.

So, a 4-3-1 bi-folding door would be four panes wide, with three doors folding back to one side of the frame, and a single opening door on the other.

To see all opening/closing sequences visit our website at:
www.liniar.co.uk/bifoldopeningclosing



If you know the rough measurements of your aperture, you can see the configuration options available to you using the table below. Find the nearest width across the top, and look down the relevant column to ascertain the choices available.

Alternatively, if you've already decided on a certain configuration, look across from the number of doors to find the approx opening width required. Please note: this table is for guidance only; each set of Alumina doors is made to order to your own exact measurements.

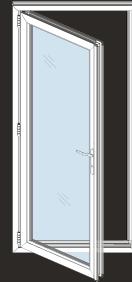
Opening width

		0.6m	1m	1.2m	1.4m	1.6m	1.8m	2.0m	2.2m	2.4m	2.6m	2.8m	3.0m	3.2m	3.4m	3.6m	3.8m	4.0m	4.2m	4.4m	4.6m	4.8m	5.0m	5.2m	5.4m	5.6m	5.8m	6.0m		
Number of doors	1 door	Available	Available	Available																										
	2 doors*			Available																										
	3 doors					Available																								
	4 doors*								Available																					
	5 doors										Available																			
	6 doors*												Available																	
	7 doors														Available															

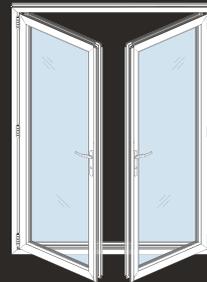
* 2-2-0, 4-4-0, 4-2-2 and 6-6-0 are subject to a minimum sash size of 0.7m



Access Doors



Alumina can also be manufactured as a single access flush fit door – ideal as an alternative to the more traditional residential door. Fully matching, single access doors are perfect for rooms with a side exit or utility door located near to your bi-fold aperture, and will help to maximise light flooding into the room.



French doors are made from the same sleek profile as Alumina bi-folding doors, with slim sightlines and a floating central mullion to make best use of available space. Alumina French doors can be manufactured to open inwards or outwards. If your opening is larger, you could add matching PVCu sidelight panels to maximise thermal efficiency.

2 Panes



Our smallest bi-folding door, 2-pane Alumina sets are ideal for openings from 1.5m wide and open inwards or outwards, with both doors folding to one side. Ideal for juliet balconies.

3 Panes

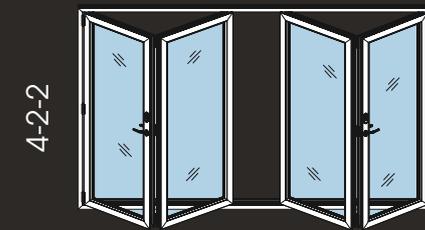


With three panes, you can choose all three doors folding back to one side (3-3-0), or two folding panes with a single access door (3-2-1).



3-3-0

4 Panes



There are three choices for 4-pane door sets; a single access door (4-3-1), all four panes folding back (4-4-0), or the more symmetrical 4-2-2 where two doors fold out to each side from the centre.

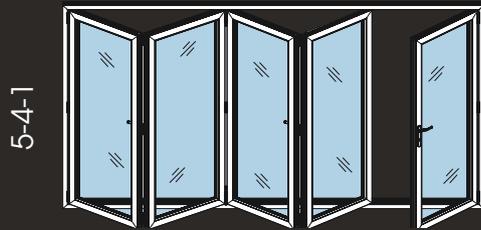


4-3-1



4-4-0

5 Panes



With 5-pane doors, choose from a set with a single access door (5-4-1), all five panes folding back (5-5-0) or three panes folding from one side and two from the other (5-3-2).

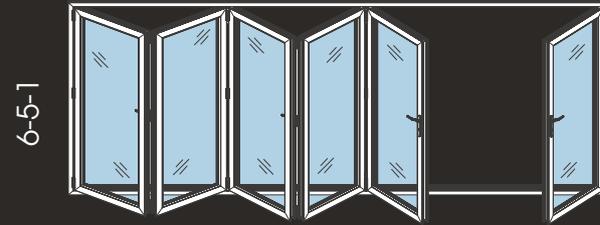


5-3-2

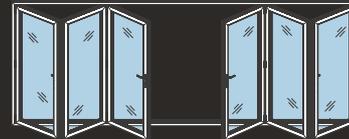


5-5-0

6 Panes



Select from three options for 6-pane doors; a single access door (6-5-1), all six panes folding back (6-6-0) or the more symmetrical 6-3-3 where three doors fold out to each side from the centre.



6-3-3

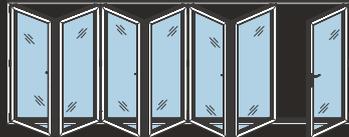


6-6-0

7 Panes



7-4-3



7-6-1



7-5-2

Wider configurations offer the most choice – so select from a set with a single access door (7-6-1), all seven panes folding back (7-7-0) or a combination of folding doors (7-4-3 and 7-5-2).





Colour options

Available in a choice of three powder-coated colours as standard, Alumina is also available with a beautiful factory-fitted foiled finish.

Colours and finishes can be different inside and out, so you can choose the perfect match for both the exterior and interior of your home.

Standard colour options are shown on the next page, and these are available from stock – but if you’re prepared to wait a little longer, you can choose almost any foiled colour option.*

Linjar’s high quality foils are applied in our on-site lamination facility using eco-friendly primers and the latest machinery and engineering techniques. All colours are fully guaranteed for 10 years.

As the colours printed are representative only, we recommend choosing from an Alumina foil swatch booklet for the most accurate colour match.

Example:



Stocked Powder Coated Finishes (Both Faces)



White (Gloss)
Closest RAL: 9910



Black (Matt)
Closest RAL: 9011



Grey (Matt)
Closest RAL: 7016

Stocked Foiled Finishes (Both Faces)



Irish Oak Foil
Closest RAL: N/A



Golden Oak Foil
Closest RAL: N/A



Rosewood Foil
Closest RAL: N/A



Grey Foil
Closest RAL: 7016



Black Foil
Closest RAL: 8022

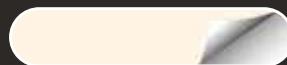


Cream Foil
Closest RAL: 9001



White Foil
Closest RAL: 9010

Stocked Foiled Finishes (External Face Only)



Cream Foil
Closest RAL: 9001



Chartwell Green Foil
Closest RAL: N/A



Golden Oak Foil
Closest RAL: N/A



Rosewood Foil
Closest RAL: N/A



Grey Foil
Closest RAL: 7016



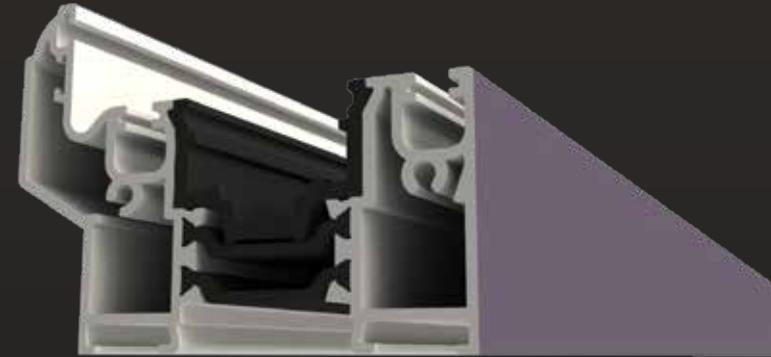
Black Foil
Closest RAL: 8022

* Additional foiled finishes are available on longer lead times - ask your fabricator for more details.

Low threshold

All Alumina bi-folding doors are available with three threshold options, for the ultimate choice.

- The rebated aluminium frame runs seamlessly around to form a weathertight threshold, and the doors are supplied with this as standard.
- Liniar's optional aluminium low threshold requires no trench excavation to install, and is just 23.5mm at its highest point.
- Add an optional tray to the low threshold to make the bi-fold doors Part M compliant for wheelchair access and family living.



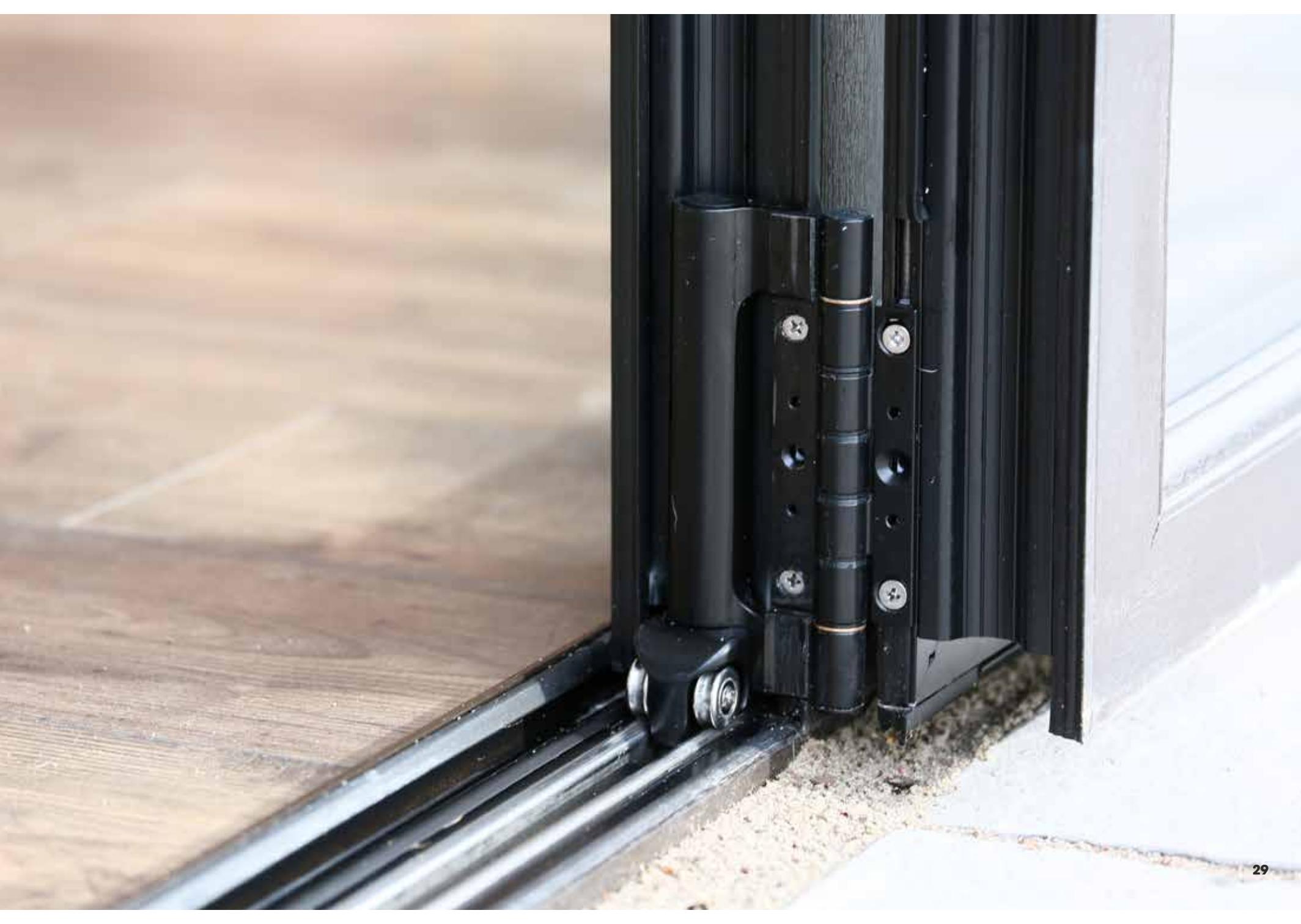
Rebated aluminium frame

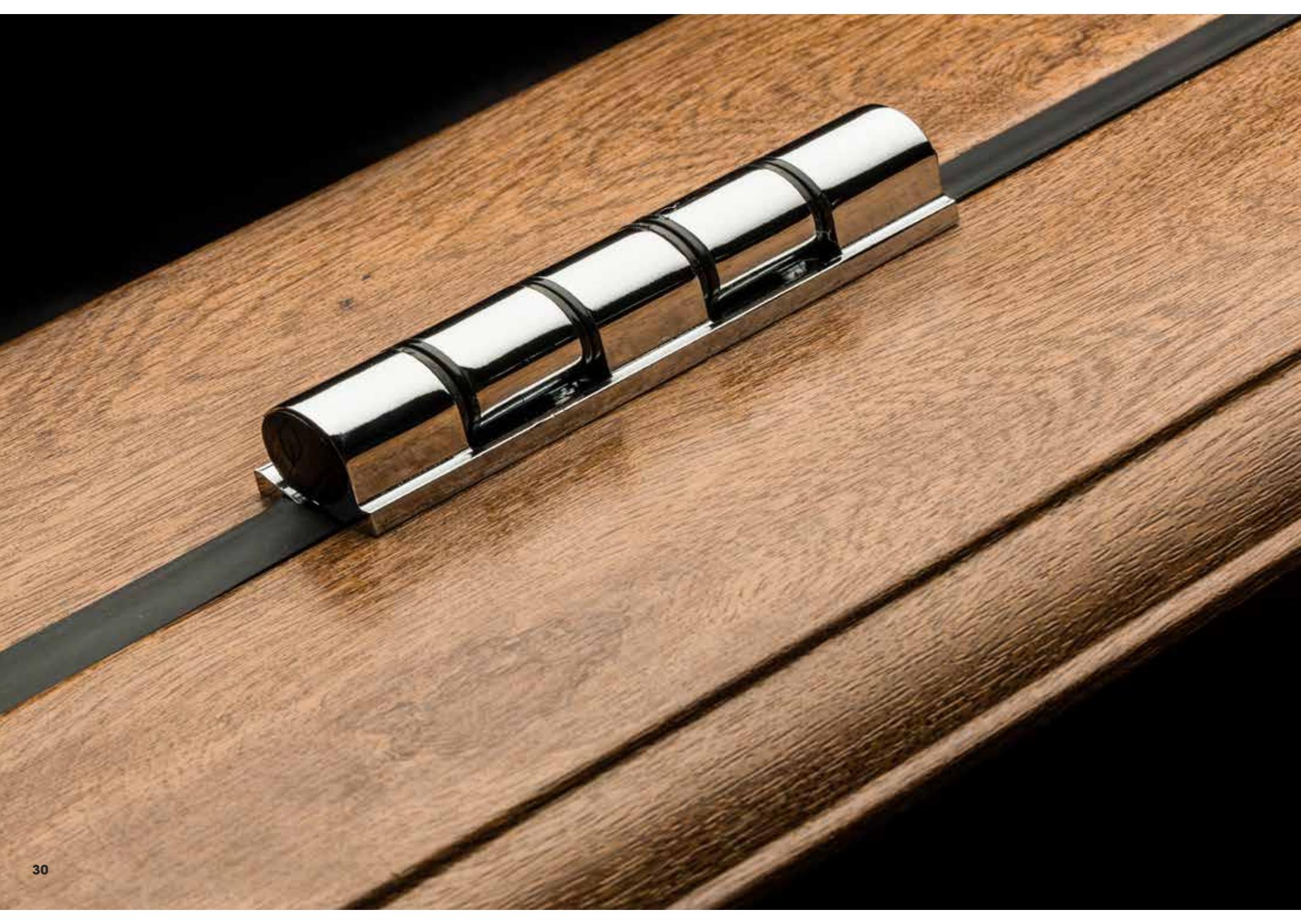


Thermally broken low threshold



Thermally broken Part M low threshold





Hardware

Alumina bi-folds feature the same stunning hardware as the Liniar ModLok™ range of doors.

Designed by Liniar and sourced from the highest quality specialist hardware manufacturers, both main and slave door handles are available in the following colour choices:



White



Gold



Black



Dark Chrome*



Chrome

* Dark chrome only available on handles.

Whichever hardware colour you choose, you can rest assured that the security features built into every set of Alumina doors offer the highest protection to your family. Designed to incorporate multiple

bi-directional locking points, opposing hooks and shootbolts, alongside anti-lift features and anti-bump cylinders, the Alumina hardware suite helped the doors to achieve PAS24 enhanced security accreditation at the first attempt – together with Secured By Design status.

Attractive

The design of the modular locking hardware ensures Alumina's sleek exterior has a uniquely seamless finish around every single door pane.

In addition, the strong magnets that hold each folding pane in place are thin and discreet, allowing an uninterrupted view of the doors from the outside.

Alumina's slimline hinges have the fixings hidden inside, so they not only look beautiful but offer increased security as they can't be unscrewed from the outside.

Caring for Alumina

The rolling mechanisms that carry the door panes along the track are fitted with sealed stainless steel bearings and require no lubrication.

Ensure the top and bottom tracks are kept free from dust and debris, which may impair the function of your doors.

Door locking mechanisms should be cleaned, with hinges and locking mechanisms lightly lubricated with a machine oil at least once each year (and more frequently where appropriate).



Guaranteed

Alumina Bi-Folding Doors consist of a wide variety of components that cannot be covered under one guarantee and therefore are grouped below into the respective qualifying periods:

Aluminium and PVCu Extrusions - 10 Years

All Aluminium and PVCu extrusions are manufactured using tried and tested formulations from approved suppliers and will not warp, split or discolour.

Moving Parts - 5 Years

All moving parts are guaranteed against failure. Failure due to mishandling will void all guarantees.

Coloured Hardware Finish - 1 Year

The guarantee applies to product finishes for 1 year but does not include faults caused by wilful or neglectful damage, and excessive wear and tear.



6 great reasons to choose Alumina

Designed from scratch – The team recognised the need for a pure aluminium bi-fold that fully matched with Liniar PVCu windows – so they designed one!

Superior U-values – Alumina offers ‘true’ U-values as low as 1.2W/m²K, thanks to its innovative thermal lock.

Low threshold – Optional Part M compliant aluminium low threshold is just 23.5mm high at its highest point, requiring no trench excavation to install.

High security– Alumina ensures the highest security with multiple bi-directional locking points, shootbolts, built-in anti-lift features and anti-bump cylinders.

Foiled or powder coated – Your Alumina bi-fold can either be powder coated, or foiled with any woodgrain finish.

Attention to detail – With innovative features including folding keys, ergonomic handles, hidden fixings for hinges and discreet magnets.

Alumina by Liniar
Flamstead House
Denby Hall Business Park
Denby
Derbyshire
DE5 8JX

Tel: 01332 883900
Fax: 01332 883901
Email: alumina@liniar.co.uk