

Window and Door specifications:



It's important to Liniar to prove its products are backed by the highest standards, and an ongoing testing programme ensures that all systems remain fully compliant – often ahead of legislation. Liniar holds the following accreditations:



PAS 24:2012
Enhanced security performance requirements for doorsets and windows in the UK - **Casement Windows**



PAS 24:2012
Enhanced security performance requirements for doorsets and windows in the UK - **EnergyPlus Casement Windows**



PAS 24:2012
Enhanced security performance requirements for doorsets and windows in the UK - **Tilt & Turn Windows**



PAS 24:2012
Enhanced security performance requirements for doorsets and windows in the UK - **Flush Sash Windows**



PAS 24:2012
Enhanced security performance requirements for doorsets and windows in the UK - **Residential Doorsets**



PAS 24:2012
Enhanced security performance requirements for doorsets and windows in the UK - **French Doorsets**



PAS 24:2012
Enhanced security performance requirements for doorsets and windows in the UK - **ModLok Bi-fold Doorsets**



PAS 24:2012
Enhanced security performance requirements for doorsets and windows in the UK - **Alumina Bi-fold Doorsets**




Secured by Design
Secured by Design is a police-backed initiative, with this status being awarded to products designed with exceptional security features as their main priority. Liniar products that qualify to hold this certification are tested to meet the requirements of the Association of Chief Police Officers.




BS EN ISO 9001:2008
The Liniar factory has achieved BS EN ISO 9001:2008 accreditation, meeting British Standards for a quality management system. The standard is based on a number of principles including a strong customer focus, management motivation, the process approach and continuous improvement.



BBA Approval
The BBA (British Board of Agrément) is the UK's major authority offering approval of construction products. Certificates are recognised by architects and specifiers as an impartial and unbiased review on the performance of products, and Liniar holds a certificate for the whole window system.



BS EN 12608:2003
BS EN 12608:2003 is the standard of quality, consistency and performance required for PVCu extruded hollow profiles. Products are regularly tested to ensure that they continue to meet these standards.



Buildcheck
The Folding Sliding Door scheme was launched by Build Check to raise standards of bi-fold doors in the UK. Each product is put through 5,000 full cycles of all sashes, weather tested to 800 pascals and can achieve a minimum U-value of 1.8. Liniar's ModLok™ Bi-fold was the first product to successfully meet the stringent requirements.

Structural Recommendations Query Sheet



Please complete continuation sheet (if needed) and return to: [REDACTED]

Job Ref:

Please provide sketch or attachments of proposed designs showing ALL dimensions (overall & transom/Mullion), of heights & floor levels

Window reference: Comments:

A large rectangular area filled with a fine grid, intended for drawing or sketching. The grid is composed of small squares. On the left side, there is a vertical double-headed arrow labeled "Height". On the bottom side, there is a horizontal double-headed arrow labeled "Width".

The advice given within the report are based upon the information provided by the client, who must take full responsibility of the content. Please note, we have no means to accommodate for thermal expansion within the window/screen. We do not offer a dedicated SSA/CWCT accredited curtain walling system and we therefore have design limitations.

Liniair Ltd take's no responsibility for the overall structural stability, quality of the installation or for the future of it's fittings, members of existing structures. If in doubt consult a Structural Engineer. We advise that these recommendations should be checked by a Structural Engineer before proceeding.

REINFORCEMENT GUIDELINES

All profiles listed below must be reinforced as stated in these guidelines.

Reinforcement must be continuous (where applicable passed through welds) and a minimum of 25% of the effective length of mullions/transoms and 50% of the effective length of sashes. The effective length is measured along the top of the insulating glass unit (see page 177 notes).

Reinforcement to be fixed at 100mm from each end and at a maximum of 300mm centres, minimum of 3 per length and not visible when assembled wherever possible.
Security 50 (p. 42-57) to be used in all areas (see page 10) wherever applicable.

WINDOW OUTER FRAME (EXC. T&T)		
L#W011, L#W012:		No reinforcement required
LFS011:		No reinforcement required
LRW012:		No reinforcement required
L#W016, L#W017:		No reinforcement required
T&T OUTER FRAME		
L#W016:	0 to 1.5m - No reinforcement required	Over 1.5m - LTR002 or LSR016
L#W017:	0 to 1.5m - No reinforcement required	Over 1.5m - LSR017 & LAR080
DOOR OUTER FRAME		
L#W016: <small>(vertical)</small>	0 to 1.5m - No reinforcement required	Over 1.5m - LTR002 or LSR016
L#W016: <small>(horizontal)</small>	0 to 1.2m - No reinforcement required	Over 1.2m - LTR002 or LSR016
L#W017: <small>(vertical)</small>	0 to 1.5m - No reinforcement required	Over 1.5m - LSR017 & LAR080
L#W017: <small>(horizontal)</small>	0 to 1.2m - No reinforcement required	Over 1.2m - LSR017 & LAR080
L#C016: <small>(vertical)</small>	0 to 1.5m - No reinforcement required	Over 1.5m - LTR002 or LSR016
L#C016: <small>(horizontal)</small>	0 to 1.2m - No reinforcement required	Over 1.2m - LTR002 or LSR016
L#W018: <small>(vertical)</small>	0 to 1.5m - No reinforcement required	Over 1.5m - LSR018
L#W018: <small>(horizontal)</small>	0 to 1.2m - No reinforcement required	Over 1.2m - LSR018
<small>Note: Use PCU profiles over 1.2m must use LSR017, LSR018, LAR080</small>		
TRANSOM / MULLION		
L#W021, L#W022:	0 to 1.0m - No reinforcement required	Over 1.0m to 1.4m - LTR001 Over 1.4m - LSR021 or LAR021
LCC021:	0 to 1.0m - No reinforcement required	Over 1.0m - DO NOT USE PROFILE, NO REINFORCEMENT AVAILABLE
LFS021:	0 to 1.0m - No reinforcement required	Over 1.0m - LFS021 or LFS022
LRW021, LRW022:	0 to 1.0m - No reinforcement required	Over 1.0m - LAR022
L#W026, L#W027:	0 to 1.0m - No reinforcement required	Over 1.0m - LSR026 or LAR026
L#W028:	0 to 1.0m - No reinforcement required	Over 1.0m - LSR028
L#W029:	0 to 1.0m - No reinforcement required	Over 1.0m - LAR029
SASH		
L#W031:		No reinforcement required
LFS031:		No reinforcement required
L#W032, L#W033:		No reinforcement required
LRW033:	VERTICALS ONLY AT ALL SIZES - LAR033	
L#W035:	0 to 1.0m - No reinforcement required	Over 1.0m - LSR035
LSW036, LSW037:	0 to 1.2m - No reinforcement required	Over 1.2m - LSR036
SLCW036, SLCW037:	0 to 1.2m - No reinforcement required	Over 1.2m - LSR036

NOTES:

- 1. Profiles available in 100mm.
- 2. Reinforcement to be cut through along the insulating glass unit arrangement.
- 3. LTR002 may be required with LSR016 in all instances.
- 4. LTR002 may be required with LSR018 in all instances.

Max lengths dependant upon window size, unguaranteed barrier loads and wind loadings requirements.

Product announcement



PVCu Thermal Reinforcement

Both LTR001 and LTR002 have been thoroughly tested by the British Standards Institute (BSI) and meet the requirements of PAS24 (security) and BS6375 Part 1 (air, water tightness and wind loading).

Made using recycled material, Thermal Reinforcement 1 and 2 are an alternative to Linlar's steel reinforcements for the use in the Linlar 70mm window and door system.

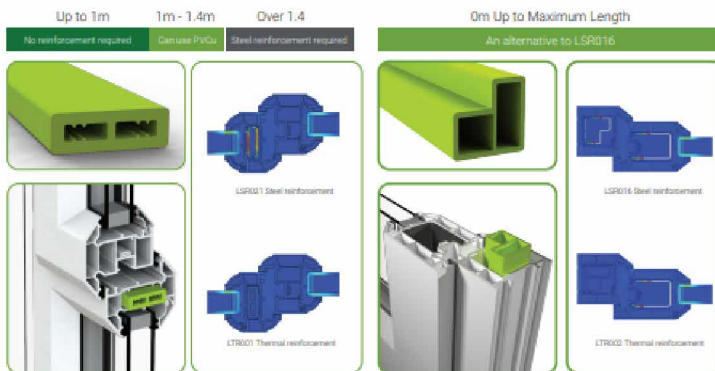
- Cost savings compared to traditional steel alternatives
- Efficient, cleaner, easier, and quieter to use in fabrication
- Enhanced energy performance
- Easier handling and installation
- Improved sustainable credentials - manufactured using recycled material and fully recyclable

LTR001

BSI tested, Thermal Reinforcement 1 can be installed in Linlar Transom T and Z profiles (only L#W021 and L#W022*) between 1 - 1.4m including those with vertical and horizontal splits (replacing steel in most cases). Enhanced to be used in mechanically jointed applications as an alternative to LAR021.

LTR002

Thermal Reinforcement 2 is an alternative to LSR016 steel reinforcement for large frames in Linlar's residential doors, French doors, tilt & turn windows and 48mm composite door frames.



The new thermal reinforcement components are included in the latest update of the Linlar Fabrication Manual which can be downloaded from The Vault, via Linlar Connect.

Please contact your software provider for updates.

* PVCu reinforcement should only be used within white profiles and single face foled profiles

Structural Recommendations Query Sheet



Please complete form in FULL and return to: design@linior.co.uk

Reports will not be processed unless all mandatory information is supplied

** Denotes mandatory information

Date:

Customer Details

Contact:

Client:

Telephone: Email:

Job Details

House/Flat No.:

Job Ref:

Wind loadings (BS EN 1991-1-4:2005) Known Peak Velocity Pressure (this will be specified in your tender documents): kN/m²

Installation / Site Postcode:

MAXIMUM height over the highest window*: m

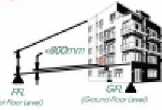


Deflection resistance of any structural member (Tension/Multiten) 1st floor & above (BS 6180)

Are there any (1st floor & above) windows or doors where any part falls within 800mm of internal floor levels?*: No Yes

Guidance assessments will not be performed if you have ticked *Yes* and have not supplied internal sill height!

- If *Yes* then the 800mm rule is applicable, please tick the minimum horizontal load to suit type of occupancy and indicate on sketches the sill height to internal floor level*:
- 0.36 kN/m Single family dwelling including flats, terraces etc. (flat/terraces and balconies)
 - 0.74 kN/m Other residential in multiple occupancy and balconies including safety balconies
 - 1.50 kN/m Areas where people might congregate



Please provide sketch or attachments of proposed designs showing ALL dimensions (overall & Tension/Multiten), sill heights & floor levels

Window reference: Comments:

Grid

Height

Width



The values given within this report are based upon the information provided by the client, who must take full responsibility of the content. Please note, we have no means to accommodate for thermal expansion within the window/frames. We do not offer a dedicated BMA/CWCT accredited curtain walling system and as therefore have design limitations.

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Full list of available glass units for Energy Rated Windows & Doors

BFRG Rating	WER	U-Value	External Pane	Internal Pane	Spacer	Gas	Simulation Number	BFRG Licence Number	All upvc Doors	Tilt & Turns	Simulation Report Date
Standard Casement - 28mm Unit											
A+	13.89	1.3	Optiwhite	Pilkington KS	Thermobar	Argon	W2611	4439			20/06/2019
A	7.15	1.3	Float	Pilkington KS	Thermobar	Argon	W2612	3067	1.4	1.4	20/06/2019
A	1	1.3	6.8 Lam ExtraClear	Pilkington KS	Thermobar	Argon	W1781	3067			28/04/2021
A	5.73	1.5	Optiwhite	Pilkington KOW	Thermobar	Argon	W1484	3067			
A	1.48	1.36	Optiwhite	Pilkington KS	Aluminium	Argon	W2718	3067			21/08/2019
B	-3.2	1.5	Float	Pilkington KS	Aluminium	Argon	W2614	3068	1.5	1.5	21/07/2019
B	-3.8	1.3	6.8 Acoustic Lam	Pilkington KS	Thermobar	Argon	W2731	3068			01/09/2019
B	-3.8	1.3	6.4 Lam (not low iron)	Pilkington KS	Thermobar	Argon	W2727	3068			22/08/2019
B	-3.83	1.5	Float	Pilkington KS	Thermobar	Air	W1479	3068			01/09/2019
B	-1	1.5	Optiwhite	Pilkington KS	Thermobar	Air	W2994	3068			27/01/2022
no rating	na	1.6	Float	Pilkington KS	Aluminium	Air	W2613	na			
no rating	na	1.48	6.8 Lam ExtraClear	Pilkington KS	Aluminium	Argon	W1784	na			
no rating	na	1.49	6.4 Lam (not low iron)	Pilkington KS	Aluminium	Argon	W2719	na			
Triple Glazed Standard Casement - 38mm Unit											
BFRG Rating	WER	U-Value	External pane	Middle Pane	Internal Pane	Spacer	Gas	Simulation Number	BFRG Licence Number	Doors	
A++	23	0.94	Optiwhite	KS	KS	Thermobar	Argon	W3024	4940		22/02/2021
A+	19	0.96	Float	KS	KS	Thermobar	Argon	W2925	4439	1.1	22/02/2021
A+	11	0.96	6.8 Lam ExtraClear	KS	KS	Thermobar	Argon	W2926	4439	1.1	22/02/2021
A	7	1.2	Float	Float	KS	Thermobar	Argon	W4042	3067		04/08/2021
A	4	1.2	Float	KS	KS	Aluminium	Argon	W2306	3067		22/02/2021
B	-8	1.4	Float	Float	KS	Aluminium	Argon	W2927	3068		22/02/2021
Triple Glazed Standard Casement - 28mm Unit											
BFRG Rating	WER	U-Value	External pane	Middle Pane	Internal Pane	Spacer	Gas	Simulation Number	BFRG Licence Number		
B	-8	1.33	Float	Pilkington KS	Pilkington KS	Aluminium	Argon	W2950	3068		29/04/2021
no rating	na	1.5	Float	Float	Pilkington KS	Aluminium	Argon	W2951	na		
Casement with deep (77mm) outer frame all round - 28mm Unit											
BFRG Rating	WER	U-Value	External Pane	Internal Pane	Spacer	Gas	Simulation Number	BFRG Licence Number			
A	2	1.3	Optiwhite	Pilkington KS	Thermobar	Argon	W3220	4439			04/01/2016
B	-1	1.3	Float	Pilkington KS	Thermobar	Argon	W3213	3068			04/01/2016
B	-8	1.3	6.8 Lam ExtraClear	Pilkington KS	Thermobar	Argon	W3217	3068			04/01/2016
B	-8	1.3	6.8 Acoustic Lam	Pilkington KS	Thermobar	Argon	W3219	3068			04/01/2016
B	-8	1.3	6.4 Lam (not low iron)	Pilkington KS	Thermobar	Argon	W3218 rev A	3068			04/01/2016
no rating	na	1.5	Float	Pilkington KS	Aluminium	Argon	W3214	na			
no rating	na	1.6	Float	Pilkington KS	Aluminium	Air	W3215	na			
Resurgence Flush Sash - 28mm Unit											
BFRG Rating	WER	U-Value	External Pane	Internal Pane	Spacer	Gas	Simulation Number	BFRG Licence Number			
A	0.11	1.26	Optiwhite	Pilkington KS	Thermobar	Argon	W3301	6174			20/11/2022
B	-3.41	1.26	Float	Pilkington KS	Thermobar	Argon	W3392	6175			20/11/2022
B	-3.26	1.26	6.8 Lam ExtraClear	Pilkington KS	Thermobar	Argon	W3304	6175			22/11/2022
B	-3.26	1.26	6.8 Acoustic Lam	Pilkington KS	Thermobar	Argon	W3885	6175			16/05/2023
Resurgence Flush Sash Triple Glazed - 38mm Unit											
BFRG Rating	WER	U-Value	External pane	Middle Pane	Internal Pane	Spacer	Gas	Simulation Number	BFRG Licence Number		
A	8.46	0.96	Optiwhite	KS	KS	Thermobar	Argon	W3403	6174		05/01/2023
A	6.12	0.96	Float	Pilkington KS	Pilkington KS	Thermobar	Argon	W3396	6174		21/12/2022
B	-7.88	1.15	Float	Pilkington KS	Pilkington KS	Aluminium	Argon	W3397	6175		21/12/2022
B	-1.31	0.99	6.8 Lam ExtraClear	Pilkington KS	Pilkington KS	Thermobar	Argon	W3395	6175		21/12/2022

PLEASE NOTE: Only highly insulated NEW BUILD dwellings can have a u-value between 1.4 and 1.6

 Garrard Windows standard glass spec
 Alternative unit option if required



Why choose Liniar windows?

Technically advanced

The technology used in many other PVCu window profiles is at least 20 years old. Liniar's profile was designed completely from scratch in 2007 and is far more technically advanced - built for today's exacting challenges.

British made

Liniar profiles are extruded in Derbyshire at the HI Plastics manufacturing plant, which boasts the largest mixing plant in the UK. Continued investment in the factory and facilities keeps Liniar at the forefront of innovation.

Designed by experts

The Liniar range is designed, manufactured and supported by a team with over 500 years' experience within the window industry.

More thermally efficient

Liniar's revolutionary profiles are far more thermally efficient than traditional PVCu window profiles. By removing unnecessary steel reinforcement, instead developing the latest in multi-chambered profile technology, we make sure the heat stays where it belongs - inside your home.

More cost-effective

Liniar profiles deliver even more energy savings for the homeowner. Liniar window systems are capable of achieving WERs (Window Energy Ratings) of A++, with U-values as low as 1.2w/m²K (DGL) and 0.8w/m²K (TGL).

Better for the environment

Liniar frames have always been 100% lead-free, well in advance of legislation. Furthermore, all elements of a Liniar window are fully and easily recyclable at the end of its life.

Less frame, more glass

Ultra-slim sightlines designed into Liniar products allow in maximum natural light - and result in more attractive windows and doors.

Strong and secure

Our windows and doors are tested to the latest security standards. PAS24 and Secured by Design were achieved with flying colours, making Liniar windows compliant to Part Q building regulations.

Fully tested

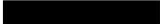
Not only does Liniar carry out weather testing and security testing, it has invested in a robot for cyclic testing, giving customers peace of mind that their Liniar products will endure the rigours of daily living.

Beautiful colours

Liniar's coloured foils give the appearance of woodgrain and won't peel or scratch off - and the whole Liniar range is available in a wide choice of colours with an easy clean, low maintenance finish.

Accredited

It's important to Liniar to prove its products are backed by the highest standards - Liniar windows and doors hold the following accreditation:



www.liniar.co.uk

