



Hybrid systems

a new concept in composite facade and window systems



SENIOR **HYBRID** SYSTEMS™

Senior Architectural Systems supplies aluminium facades, windows and doors to the commercial and residential construction markets. Operating from three strategically situated service centres at Doncaster, Newport and Livingston the company maintains its original emphasis on customer service, local availability and forming long term, mutually beneficial relationships with specifiers and fabricators.

Seniors mission is to offer high performance products which meet the requirements of each project so the fabricator can be competitive and the client confident.

Product Portfolio

Aluminium shopfronts, ground floor treatments, doors, curtain wall, commercial windows, residential windows residential doors, patio doors...

and introducing the:



SENIOR
HYBRID
SYSTEMS™

Timber/Aluminium
Facade & Window
Systems

Designed for the UK
Manufactured in the UK



SENIOR HYBRID SYSTEMS Facade & Window Systems



The Hybrid Range from Senior Architectural Systems

Hybrid is a new concept in facade supply. In addition to the existing range of high performance aluminium products Senior now offer a range of composite windows, doors and curtain wall combining the long life and low maintenance of aluminium externally with all the benefits of engineered timber internally. These are available from stock through a national network of fabricators so that clients and contractors can have either product from the same source, or combine the products on an individual project without having to change supplier or installer.

The benefits of this new approach are:

Availability

Timber for the internal frames is available from stock within the UK with aluminium outer frames available in any polyester powder colour from Senior's in house paint facilities.

Quality

All Senior Architectural service centres are fully ISO9000 accredited. The machinery necessary to fabricate Hybrid is only available from Senior ensuring consistency of quality from any fabricator.

Thermal Efficiency

Hybrid windows have the thermal efficiency of timber combined with the latest glass technology to produce U Values well below the current and anticipated future Building Regulation requirements.

Low Maintenance

Hybrid windows provide the advantages of fully pre treated engineered timber internally, so any possibility of warping or twisting is eliminated. This combined with the benefits of powder coated aluminium windows externally means maintenance is minimal.

Choice of Appearance

Hybrid windows have either natural or painted timber internally. Because the internal is fabricated from engineered timber there is no requirement to paint as there are no knots to obscure. Externally Hybrid offers a choice of finishes in polyester powder paint - virtually all RAL colours in either gloss, satin or matt. Anodised external finish is also available.



Sustainability

All timber used in Hybrid is from sustainable forests. Aluminium components are from hydro electric smelters. Any waste is fully recycled.

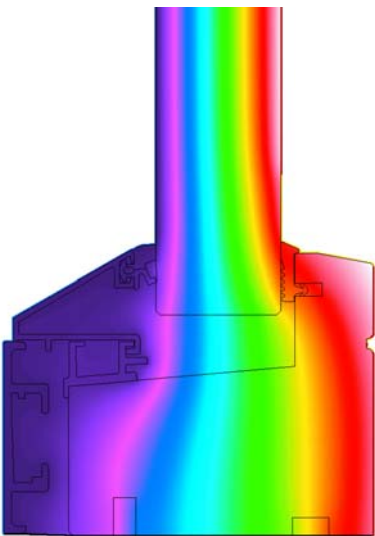
Environmental Responsibility

At the end of their service life Hybrid windows - timber, glass, aluminium and fittings - are all fully recyclable.

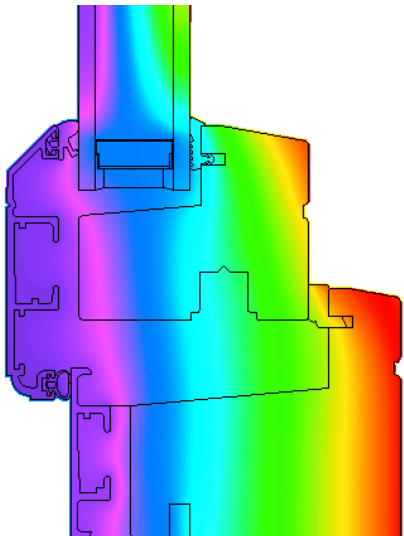




Thermal Properties

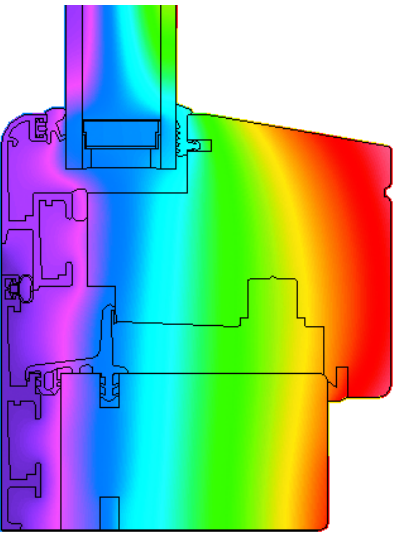


Fixed Lights

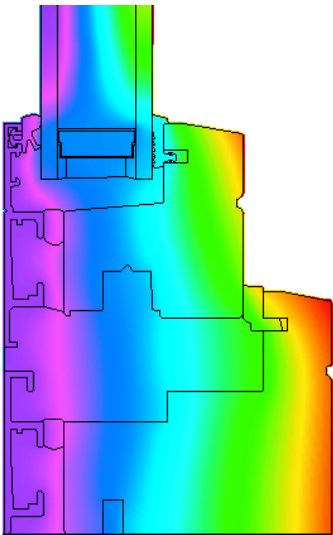


Casement

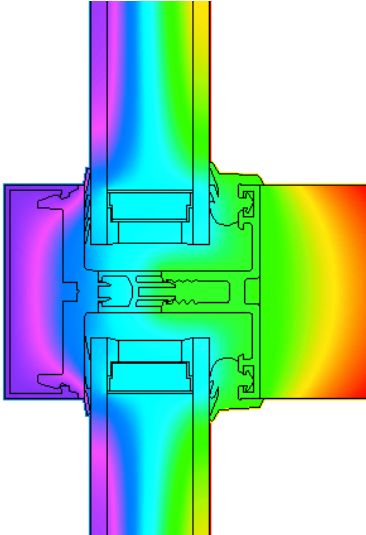
U Values well below current
and anticipated future
Building Regulation
requirements



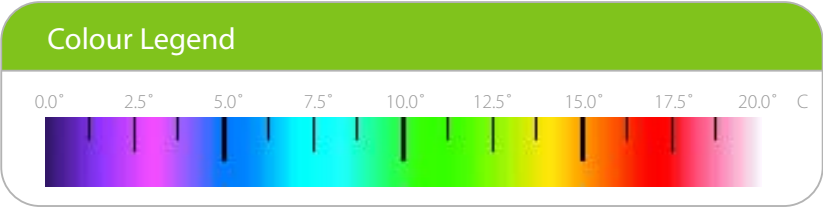
Tilt & Turn



Overswing



Curtain Wall



U Value Glass
(centre pane)

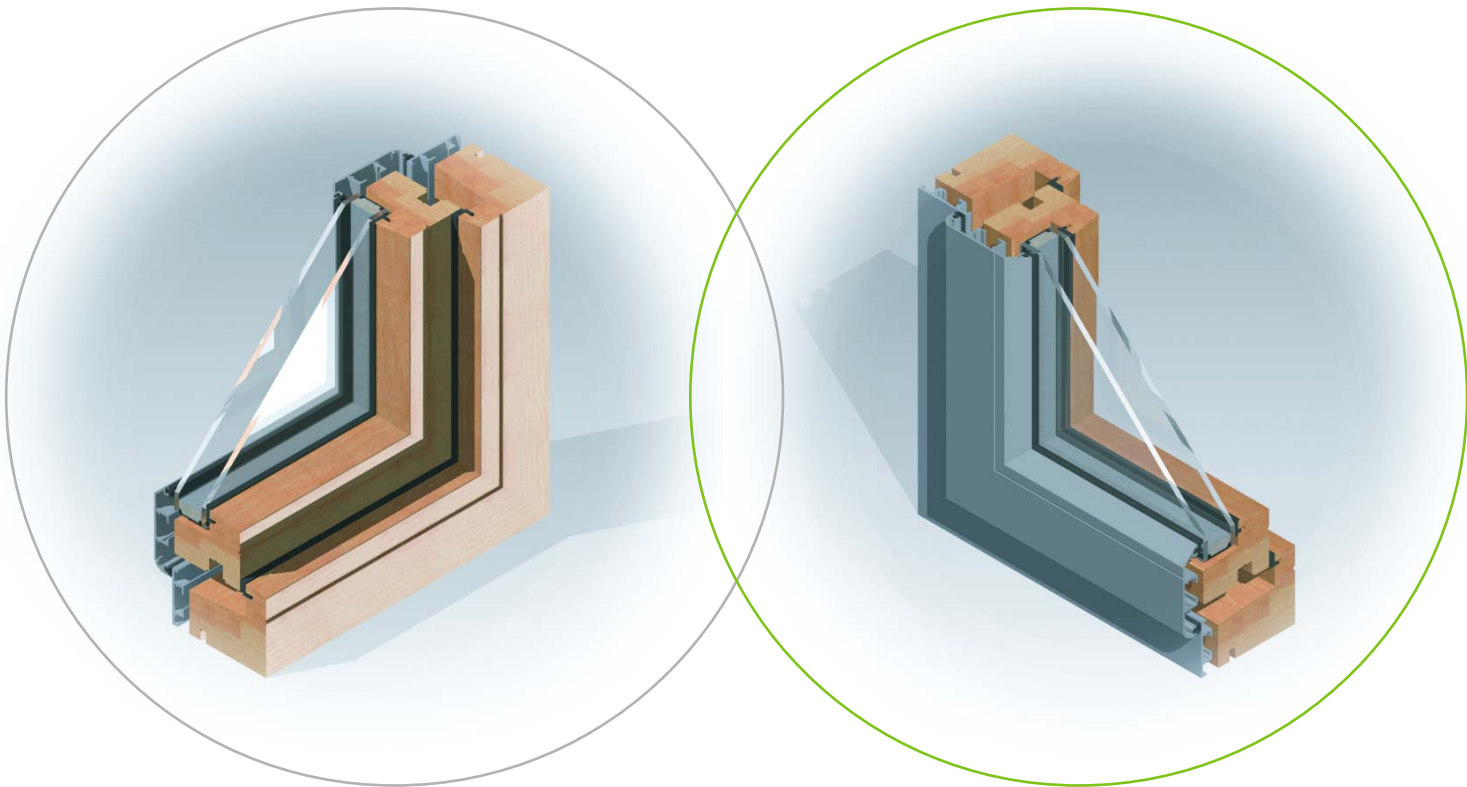
	1.9				1.7				1.5				1.2				1.1			
	S1	S2	S3	S4	S1	S2	S3	S4	S1	S2	S3	S4	S1	S2	S3	S4	S1	S2	S3	S4
Fixed Lights	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	1.9	1.8	1.8	1.8	1.7	1.6	1.6	1.7	1.6	1.6	1.5
Casement	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	1.9	1.9	1.8	1.8	1.7	1.6	1.6	1.8	1.7	1.6	1.5
Tilt & Turn	2.1	2.1	2.1	2.1	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.7	1.7	1.6	1.6	1.7	1.6	1.5	1.5
R.F.C.	2.4	2.3	2.3	2.2	2.3	2.2	2.1	2.1	2.2	2.1	2.0	2.0	2.0	1.9	1.8	1.7	2.0	1.8	1.7	1.7

Please Note:
Please Note: U-values are for guidance using standard double glazed units with aluminium spacer bars. Further improvements are possible using other glazing configurations

Size of Window	S1	0.80m x 0.80m
	S2	1.00m x 1.00m
	S3	1.20m x 1.20m
	S4	1.23m x 1.48m

Thermal Properties
With the thermal efficiency of timber, the thermal images show the heat transfer through the Hybrid Systems. With the internal temperature of the frame maintaining the 20°C room temperature, heat loss and condensation risk is minimised. Further improvements are possible with warm edge spacer technology on the double glazed units, reducing the cold bridging at the edge of the glass. Senior's are committed to improving thermal efficiency and helping to improve the environment.





Overview

The Hybrid Series 1 casement is an 83mm high performance window system that achieves very high thermal insulation values providing low U values well below the current and anticipated future building regulation requirements.

Comprising the insulating benefits of timber on the inside and the durability of aluminium on the outside, the system includes top hung, side hung and fixed light combination windows.

Construction

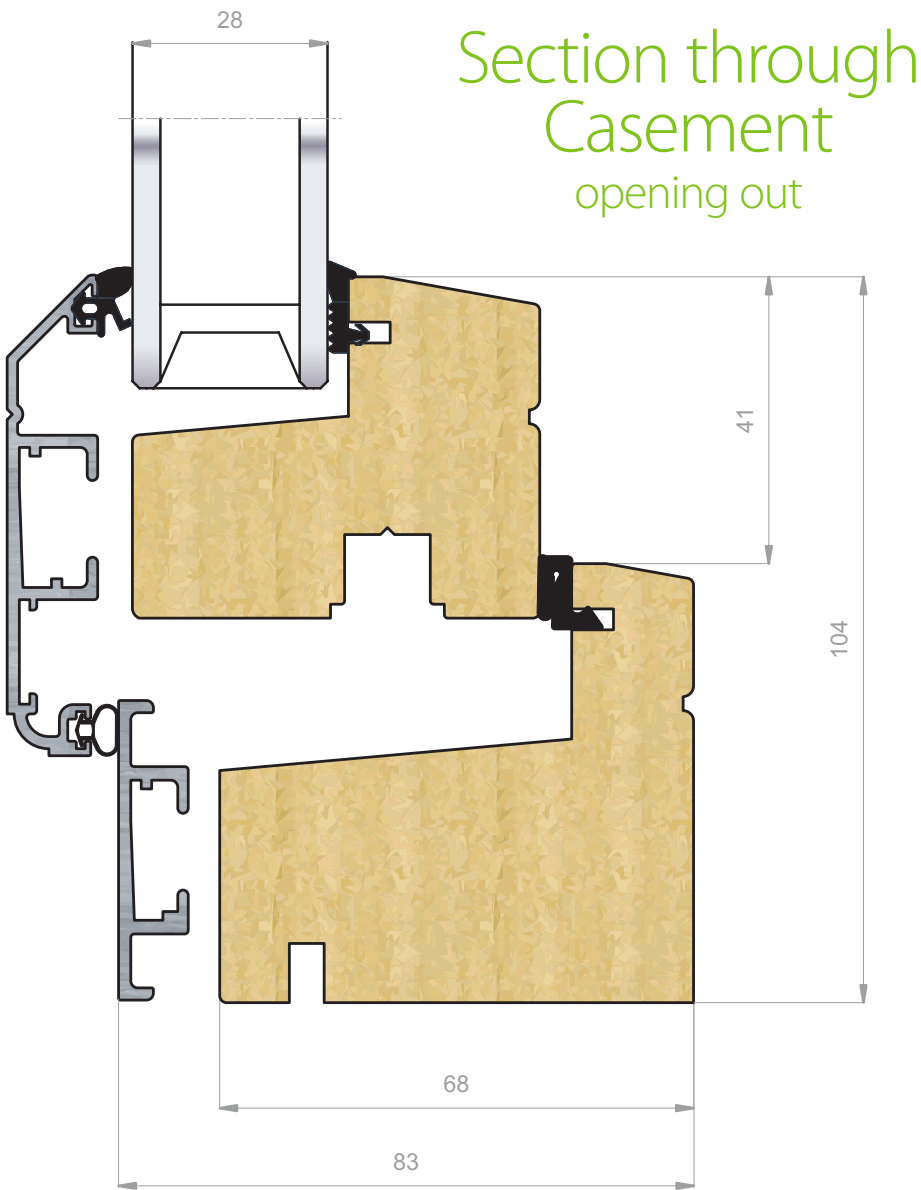
Hybrid Series 1 casement windows are constructed using mitred joints on both the aluminium and the timber frames. Using a mechanical corner joint on the aluminium and patented dovetail keys on

the timber enables the frames to be constructed without the need for complicated production processes. Integral transoms and mullions are inserted by scribing the ends and screw fix to the frame.

Opening lights are designed to be inserted directly into the outerframe using friction stays.

Performance

The Hybrid Series 1 casement window has been tested in accordance with BS6375 part 1 : 2004 (performance of windows and doors – classification of weathertightness and guidance on selection and specification). This window has also been tested to the BS7950 security test. Test reports are available from all service centres.



Glazing

Double glazing is standard and should be carried out to the recommendations of BS6262. A variety of glass options are available to maximise thermal and acoustic performance. The glazing is inserted between the aluminium and timber frames for maximum security.

Finishes

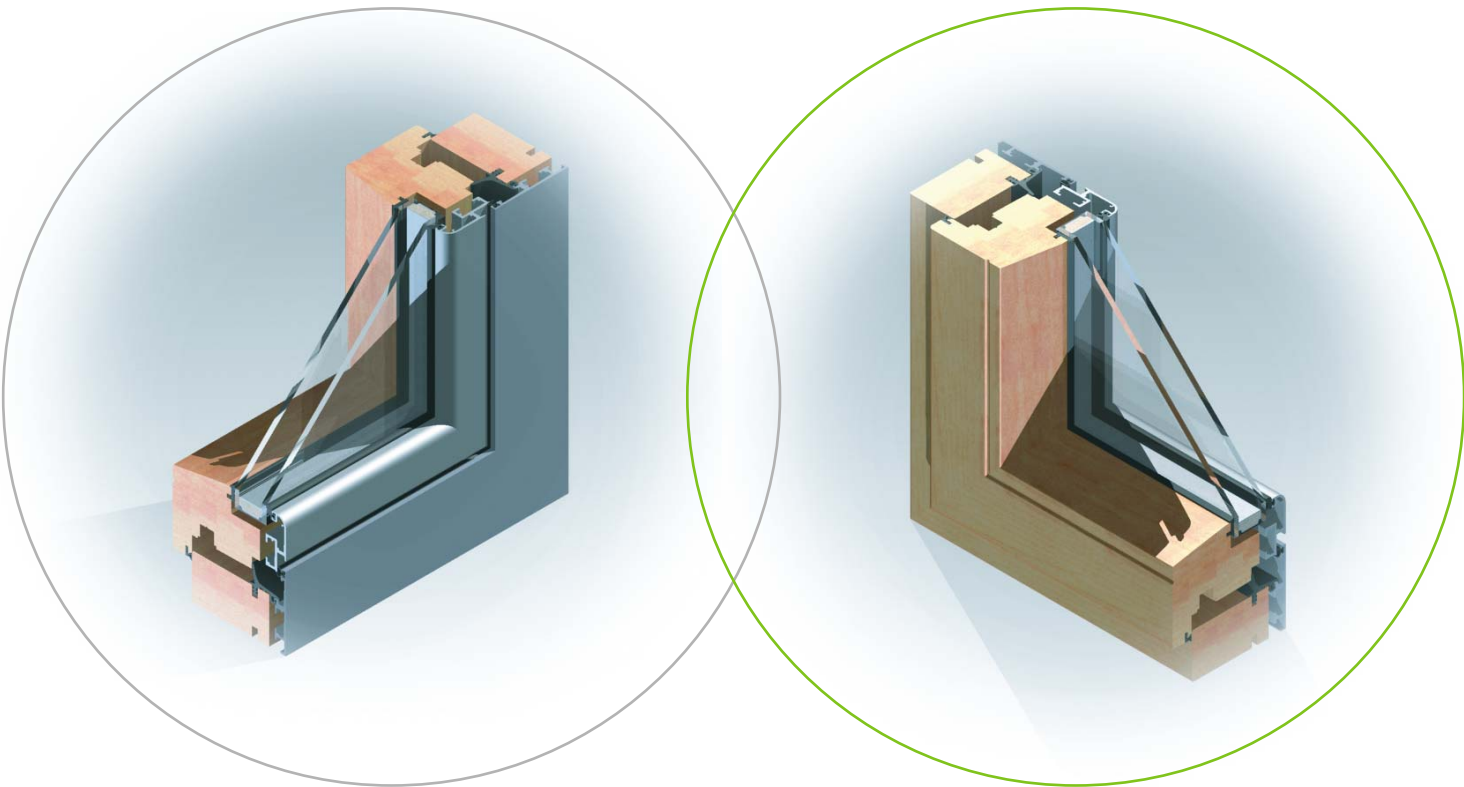
The external aluminium is available in anodised or powder coat. The internal timber is available in clear lacquered or water based paint.

	Tophung	Sidehung	Open in & Tilt-turn	Top Swing
Maximum Width	1500	900	1500	1500
Maximum Height	1500	1500	2100	1500

Size	S1 0.80 x 0.80 meters	S2 1.00 x 1.00 meters	S3 1.20 x 1.20 meters	S4 1.23 x 1.48 meters
Glass CPU				
1.9	2.2	2.2	2.1	2.1
1.7	2.1	2.0	2.0	2.0
1.5	2.0	1.9	1.9	1.8
1.2	1.8	1.7	1.6	1.6
1.1	1.8	1.7	1.6	1.5

Please Note

Sizes are for guidance using typical hardware. Other sizes maybe accommodated. Contact Senior Architectural Systems for advice.



Overview

The Hybrid Series 1 inward opening is an 83mm high performance inward opening window system that achieves very high thermal insulation values providing low U values well below the current and anticipated future building regulation requirements.

Comprising the insulating benefits of timber on the inside and the durability of aluminium on the outside, the system includes bottom hung or turn only, french windows and fixed light combination windows.

Construction

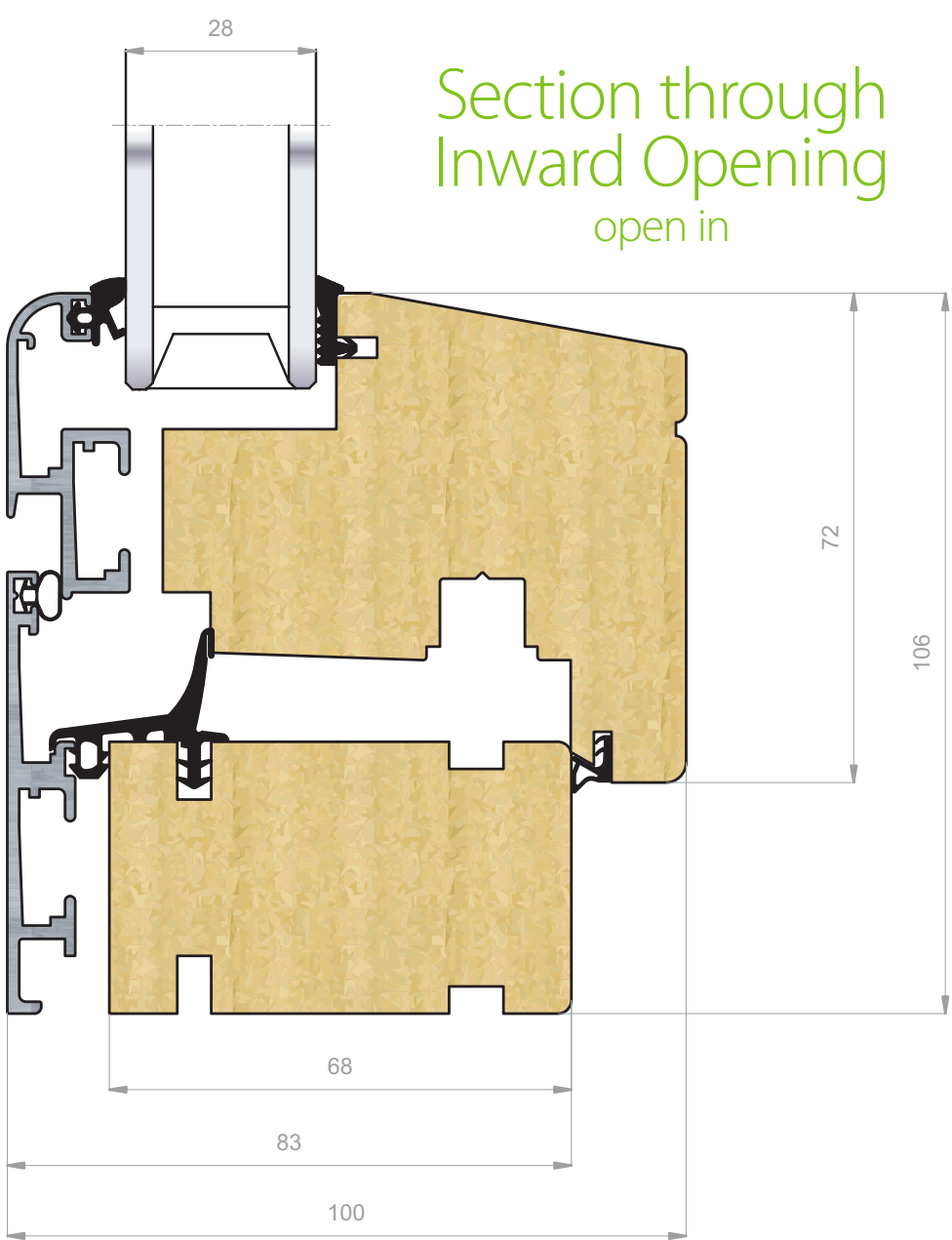
Hybrid Series 1 inward opening windows are constructed using mitred joints on both the aluminium and the timber frames. Using a mechanical corner joint on the aluminium and patented dovetail

keys on the timber enables the frames to be constructed without the need for complicated production processes. Integral transoms and mullions are inserted by scribing the ends and screw fix to the frame.

Opening lights are designed to be inserted directly into the outer-frame using proprietary hardware.

Performance

The Hybrid Series 1 inward opening window has been tested in accordance with BS6375 part 1: 2004 (performance of windows and doors – classification of weathertightness and guidance on selection and specification). This window has also been tested to the BS7950 security test. Test reports are available from all service centres.



Section through
Inward Opening
open in

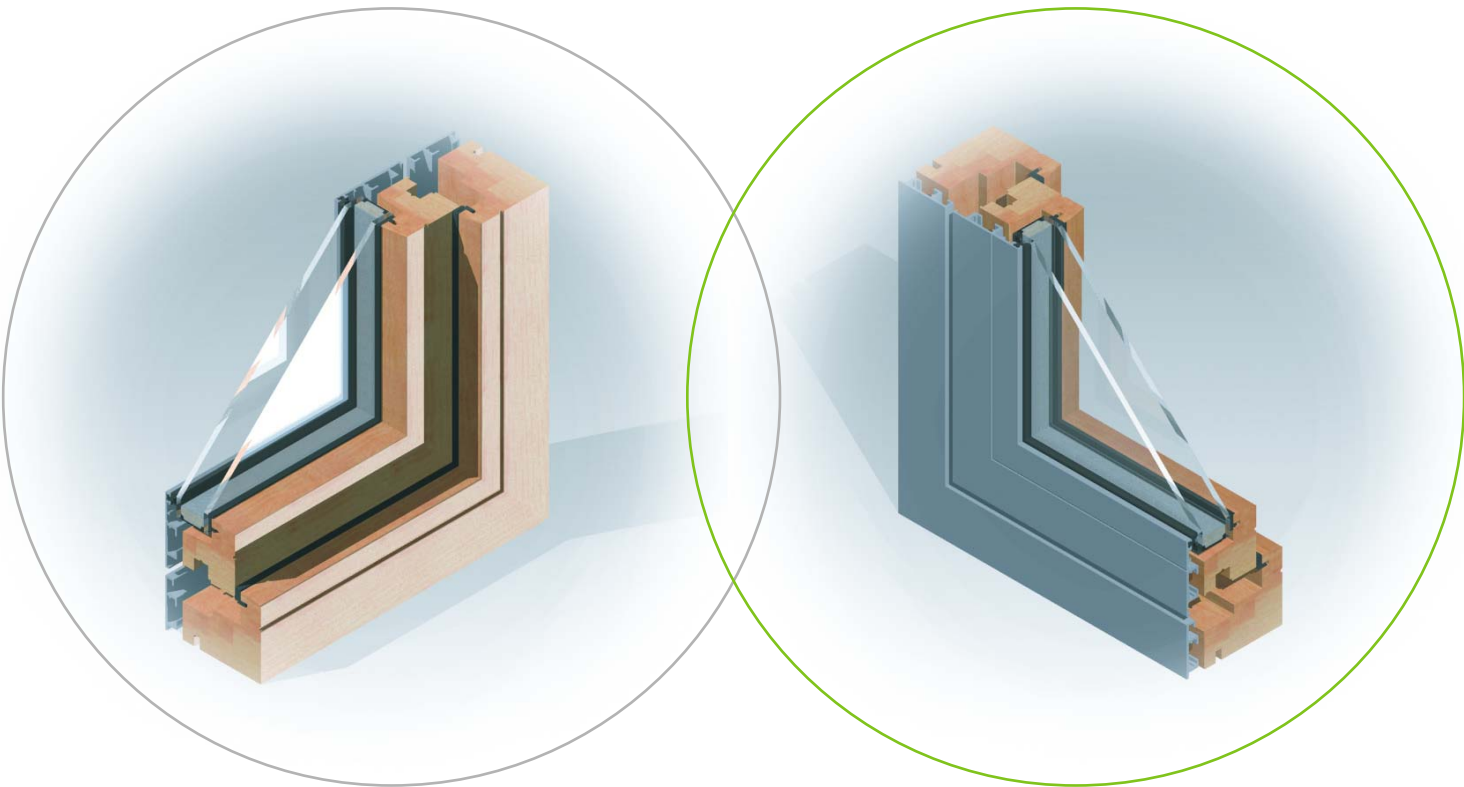
Glazing
Double glazing is standard and should be carried out to the recommendations of BS6262. A variety of glass options are available to maximise thermal and acoustic performance. The glazing is inserted between the aluminium and timber frames for maximum security.

Finishes
The external aluminium is available in anodised or powder coat. The internal timber is available in clear lacquered or water based paint.

	Tophung	Sidehung	Open in & Tilt-turn	Top Swing
Maximum Width	1500	900	1500	1500
Maximum Height	1500	1500	2100	1500

Size	S1 0.80 x 0.80 meters	S2 1.00 x 1.00 meters	S3 1.20 x 1.20 meters	S4 1.23 x 1.48 meters
Glass CPU				
1.9	2.1	2.1	2.1	2.1
1.7	2.0	2.0	1.9	1.9
1.5	1.9	1.8	1.8	1.8
1.2	1.7	1.7	1.6	1.6
1.1	1.7	1.6	1.5	1.5

Please Note
Sizes are for guidance using typical hardware. Other sizes maybe accommodated. Contact Senior Architectural Systems for advice.



Overview

The Hybrid Series 1 reversible casement is an 83mm high performance window system that achieves very high thermal insulation values providing low U values well below the current and anticipated future building regulation requirements.

Comprising the insulating benefits of timber on the inside and the durability of aluminium on the outside, the system includes top hung, top swing, side hung, side swing and fixed light combination windows.

Construction

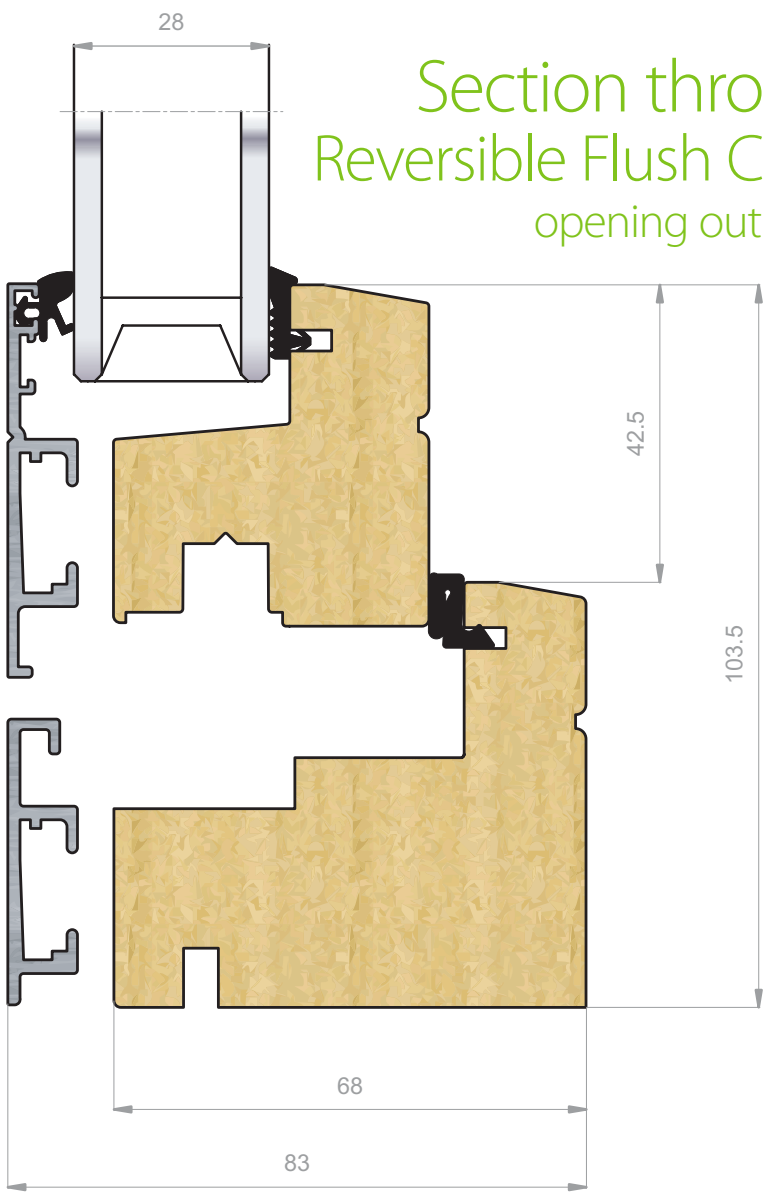
The Hybrid Series 1 reversible casement windows are constructed using mitred joints on both the aluminium and the timber frames. Using a mechanical corner joint on the aluminium

and patented dovetail keys on the timber enables the frames to be constructed without the need for complicated production processes. Integral transoms and mullions are inserted by scribing the ends and screw fix to the frame.

Opening lights are designed to be inserted directly into the outer-frame using proprietary hardware.

Performance

The Hybrid Series 1 reversible casement window has been tested in accordance with BS6375 part 1 : 2004 (performance of windows and doors – classification of weathertightness and guidance on selection and specification). The flush casement window has also been tested to the BS7950 security test. Test reports are available from all service centres.



Section through
Reversible Flush Casement
opening out

Glazing

Double glazing is standard and should be carried out to the recommendations of BS6262. A variety of glass options are available to maximise thermal and acoustic performance. The glazing is inserted between the aluminium and timber frames for maximum security.

Finishes

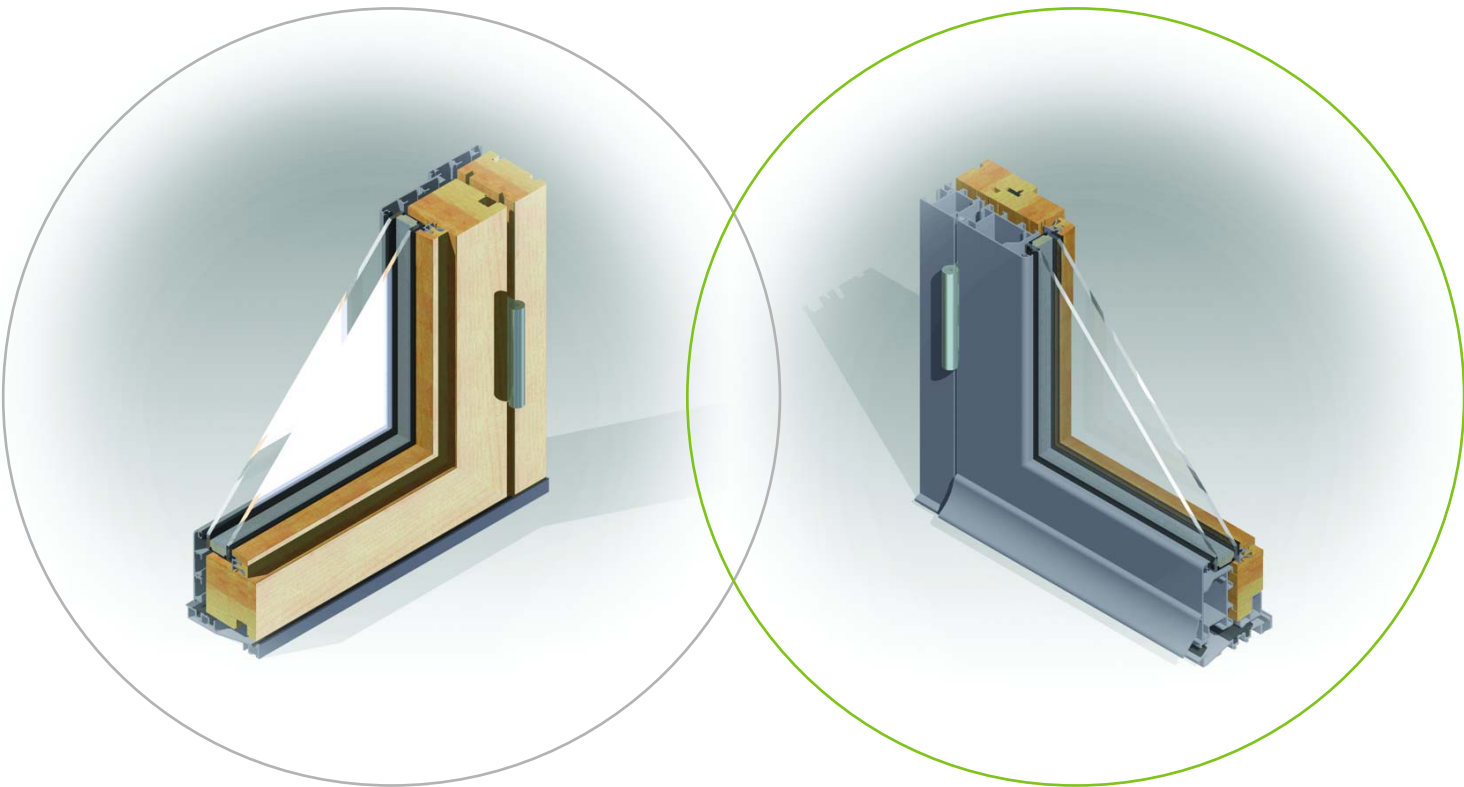
The external aluminium is available in anodised or powder coat. The internal timber is available in clear lacquered or water based paint.

	Tophung	Sidehung	Open in & Tilt-turn	Top Swing
Maximum Width	1500	900	1500	1500
Maximum Height	1500	1500	2100	1500

Size	S1 0.80 x 0.80 meters	S2 1.00 x 1.00 meters	S3 1.20 x 1.20 meters	S4 1.23 x 1.48 meters
Glass CPU				
1.9	2.4	2.3	2.3	2.2
1.7	2.3	2.2	2.1	2.1
1.5	2.2	2.1	2.0	2.0
1.2	2.0	1.9	1.8	1.7
1.1	2.0	1.8	1.7	1.7

Please Note

Sizes are for guidance using typical hardware. Other sizes maybe accommodated. Contact Senior Architectural Systems for advice.



Overview

The Hybrid Series 1 door is an 83mm high performance door system that achieves very high thermal insulation values providing low U values well below the current and anticipated future building regulation requirements.

Comprising the insulating benefits of timber on the inside and the durability of aluminium on the outside, the system includes inward and outward opening doors.

Construction

Hybrid Series 1 doors are constructed using mitred joints on both the aluminium and the timber frames. Using a mechanical corner joint on the aluminium and patented dovetail keys on the timber enables the frames to

be constructed without the need for complicated production processes.

Performance

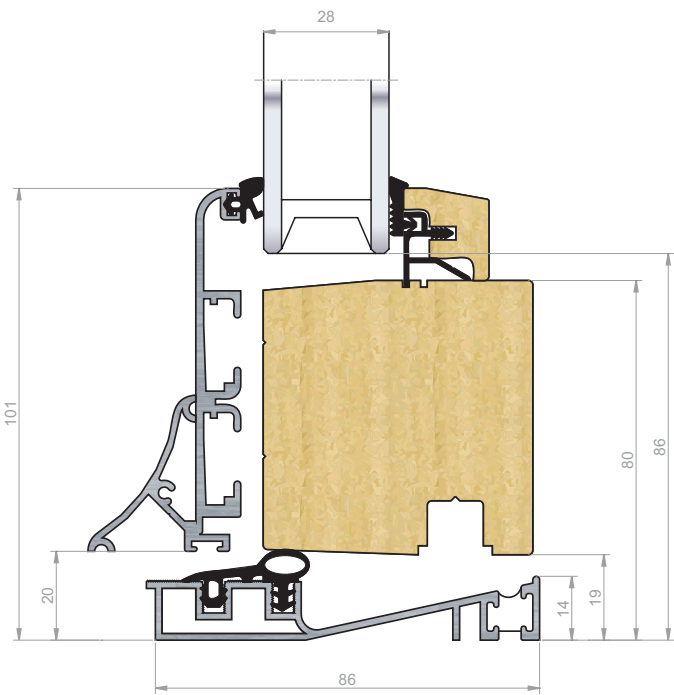
The Hybrid Series 1 inward opening door has been tested in accordance with BS6375 Part 1 : 2004 (performance of windows and doors - classification of weathertightness and guidance on selection and specification).

The Hybrid outward opening door has been independently tested to PAS23/24.

Test reports are available from all service centres.



Section through Door inward opening



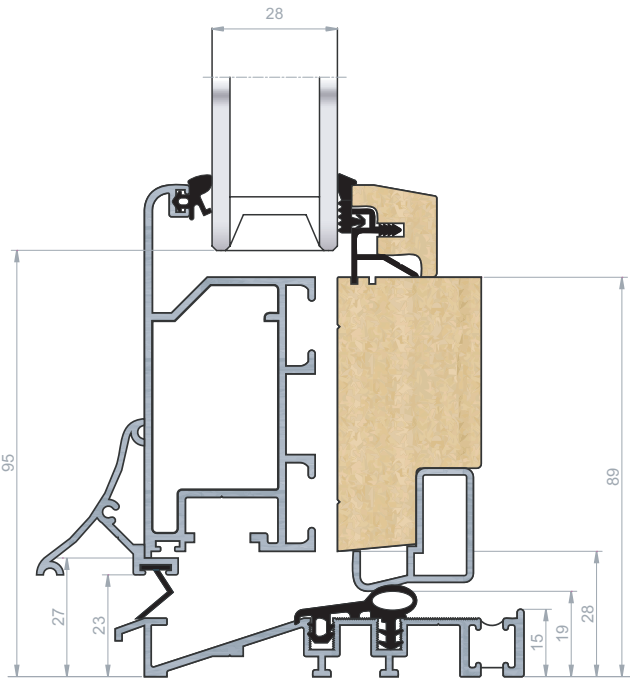
Glazing

Double glazing is standard and should be carried out to the recommendations of BS6262. A variety of glass options are available to maximise thermal and acoustic performance. The glazing is inserted between the aluminium and timber frames for maximum security.

Finishes

The external aluminium is available in anodised or powder coat. The internal timber is available in clear lacquered or water based paint.

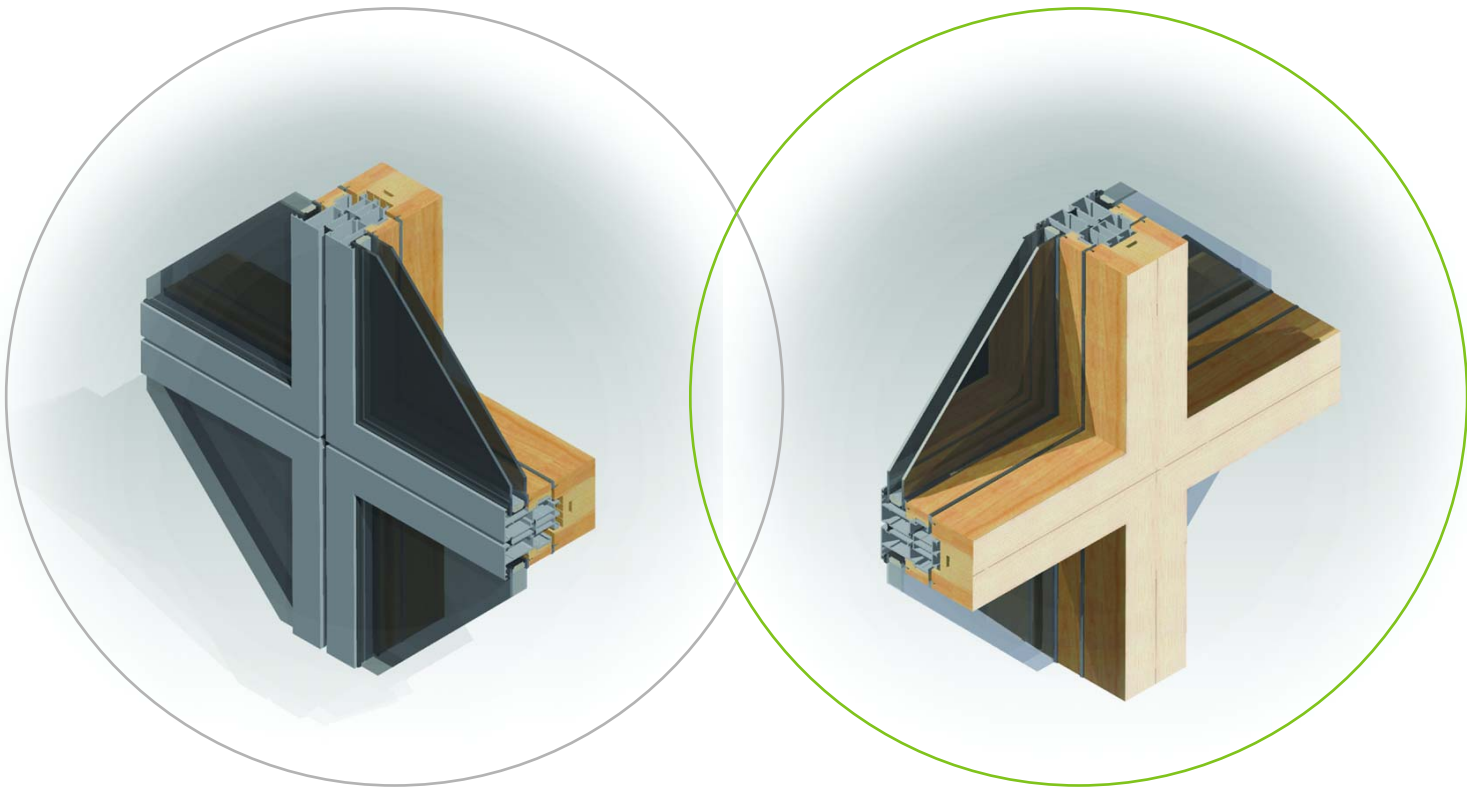
Section through Door outward opening



	Single	Double
Maximum Width	1000	2000
Maximum Height	2100	2100

Please Note

Sizes are for guidance using typical hardware. Other sizes maybe accommodated. Contact Senior Architectural Systems for advice.



Overview

The Hybrid Series 2 casement is available as either an 125mm or 150mm high performance window system that achieves very high thermal insulation values providing low U values well below the current and anticipated future building regulation requirements.

Comprising the insulating benefits of timber on the inside and the durability of aluminium on the outside, the system includes top hung, side hung and fixed light combination windows.

The Hybrid Series 2 provides a clean symmetrical look, with aesthetically pleasing appearance, identical regardless of whether the window opens or is a fixed pane.

Construction

Hybrid Series 2 casement windows are constructed using mitred joints on both the aluminium and the timber frames. Using a mechanical corner joint on the aluminium and patented dovetail keys on the timber enables the frames to be constructed without the need for complicated production processes. Integral transoms and mullions are inserted by scribing the ends and screw fix to the frame.

Opening lights are designed to be inserted directly into the outer frame using friction stays.

Performance

The Hybrid Series 2 casement window has been tested in accordance with BS6375 part 1 : 2004 (performance of windows

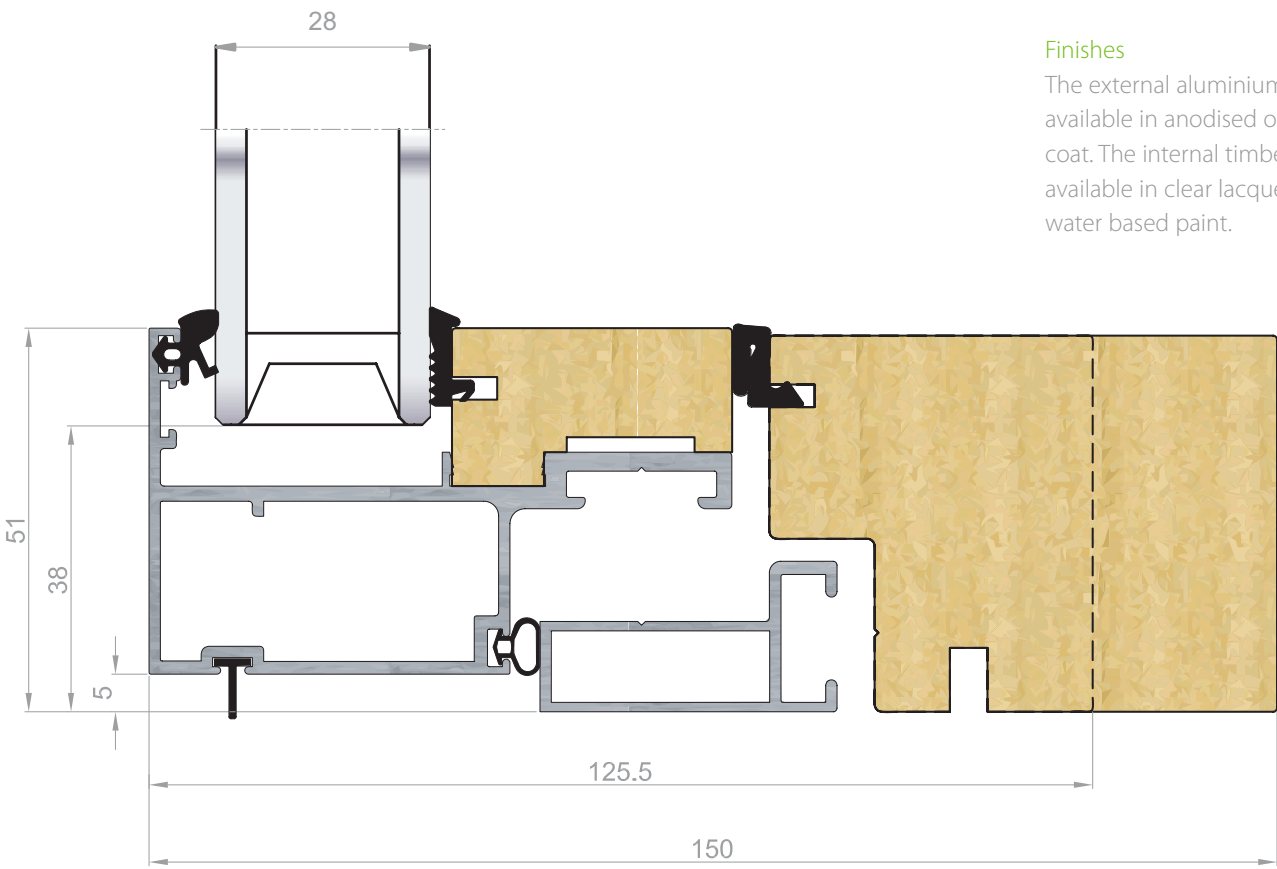
and doors - classification of weathertightness and guidance on selection and specification).

This window has also been tested to BS7950 for security.

Test reports are available from all service centres.



Section through
Casement
opening out



Glazing

Double glazing is standard and should be carried out to the recommendations of BS6262. A variety of glass options are available to maximise thermal and acoustic performance. The glazing is inserted between the aluminium and timber frames for maximum security.

Finishes

The external aluminium is available in anodised or powder coat. The internal timber is available in clear lacquered or water based paint.

	Tophung	Sidehung	Open in & Tilt-turn	Top Swing
Maximum Width	1500	900	1500	1500
Maximum Height	1500	1500	2100	1500

Please Note

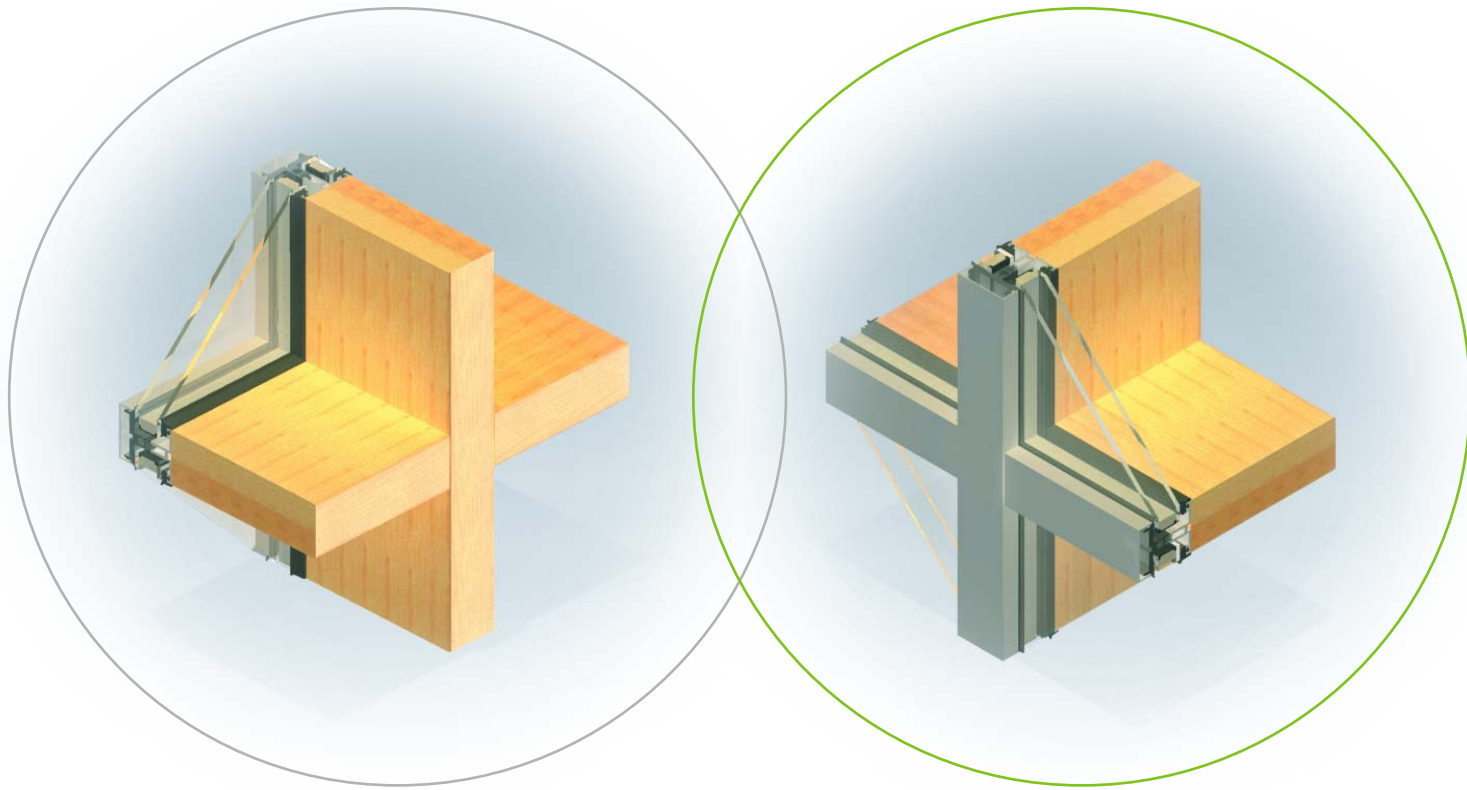
Sizes are for guidance using typical hardware. Other sizes maybe accommodated. Contact Senior Architectural Systems for advice.

SENIOR HYBRID SYSTEMS

Facade & Window Systems

Series 3 : Curtain Walling

SAS



Overview

The Hybrid Series 3 curtain wall is an 50mm high performance, zone drained stick system that achieves very high thermal insulation values providing low U values well below the current and anticipated future building regulation requirements.

Comprising the insulating benefits of timber on the inside and the durability of aluminium on the outside, the curtain wall can incorporate all of the Senior Hybrid and Aluminium windows and doors.

Construction

Hybrid Series 3 curtain walls are constructed using vertical mullions with face fixed horizontal transoms on both the aluminium and the timber profiles. A range of transom and mullion sections

are available to maximise performance.

Performance

The Hybrid Series 3 curtain wall has been tested in accordance with the CWCT curtain wall standard and the European EN 13830: 2003.



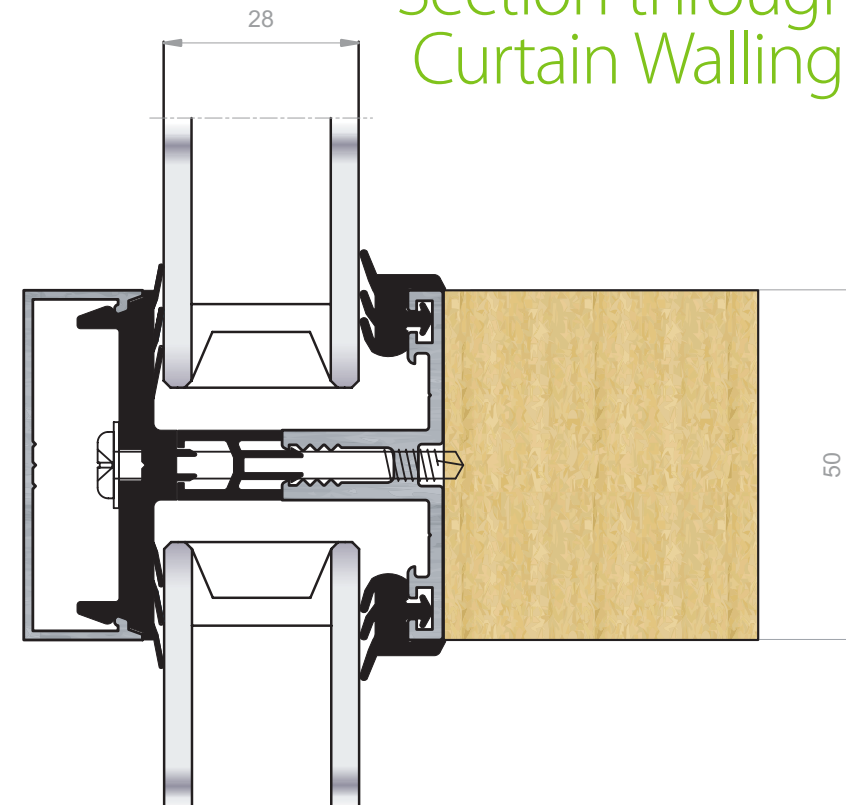
SENIOR HYBRID SYSTEMS

Facade & Window Systems

Series 3 : Curtain Walling

SAS

Section through Curtain Walling



Glazing

Double glazing is standard and should be carried out to the recommendations of BS6262. A variety of glass options are available to maximise thermal and acoustic performance. The glazing is inserted between the aluminium and timber frames for maximum security.

Finishes

The external aluminium is available in anodised or powder coat. The internal timber is available in clear lacquered or water based paint.

Further information

For further information on any of the products, specifications and finishes within this brochure please contact: Senior Architectural Systems or visit the website

www.seniorhybrid.co.uk



Project: Westbourne School
Location: Cardiff

Products: Hybrid Curtain Wall, Hybrid Tilt and Turn,
Hybrid Casement and SD Aluminium Commercial Door

Westbourne

Project: Archbishop Holgate School
Location: York

Products: Hybrid Fixed Lights and Hybrid Casements.





SENIOR HYBRID SYSTEMS™

A division of Senior Architectural Systems Ltd

HEAD OFFICE

Senior Architectural Systems Ltd, Eland Road, Denaby Main, Doncaster, South Yorkshire, DN12 4HA.
Tel: 01709 772 600. Fax: 01709 772 601. E-mail: info@seniorhybrid.co.uk

BRANCHES

Scotland; Unit 4 Dunlop Court, Deans Industrial Estate SW, Livingston, West Lothian, EH54 8SL.
Tel: 01506 407 640. Fax: 01506 407 641.

South; Unit 4 Leeway Industrial Estate, Newport, South Wales, NP19 4SL.
Tel: 01633 277 880. Fax: 01633 277 121.

www.seniorhybrid.co.uk



Senior Hybrid Systems is a division of Senior Architectural Systems, a major UK supplier of glazing systems, specialising in providing aluminium and timber systems to the highest standards.

Operating from three strategically situated service centres at Doncaster, Newport and Livingston the company maintains its original emphasis on customer service, local availability and forming long term, mutually beneficial relationships with specifiers and fabricators.



SENIOR ARCHITECTURAL SYSTEMS