warmcore®
FOLDING SLIDING DOOR SYSTEM

TRUE INNOVATION - WARM ALUMINIUM

Synseal is proud to introduce WarmCore, an innovative aluminium folding sliding door system which incorporates a radically different product design approach to deliver a new high performance fenestration framing solution: "warm aluminium".

Designed from scratch starting with a clean sheet of paper, every single component has been concept sketched, detail designed, prototyped, tooled, trial installed and rigorously tested by Synseal's unrivalled R&D team.

WarmCore is a high quality aluminium folding sliding door solution with peerless thermal performance that ensures end-user comfort, all year round.

SUPERIOR THERMAL PERFORMANCE

At the heart of WarmCore products is a thermal core which significantly out-performs the polyamide thermal breaks commonly used to reduce the threat of cold bridging on aluminium windows and doors.

The result is an innovative "warm aluminium" frame construction, carefully dimensioned to provide an optimised 70mm front-to-back overall sash frame depth while ensuring market-leading thermal performance thanks to the multi-chambered insulating core.

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Fully concealed multi-chambered cores substantially improve thermal performance when compared to thermally-broken aluminium doors:

U-VALUE OF 1.4 W/M2K WITH 28MM DOUBLE GLAZING

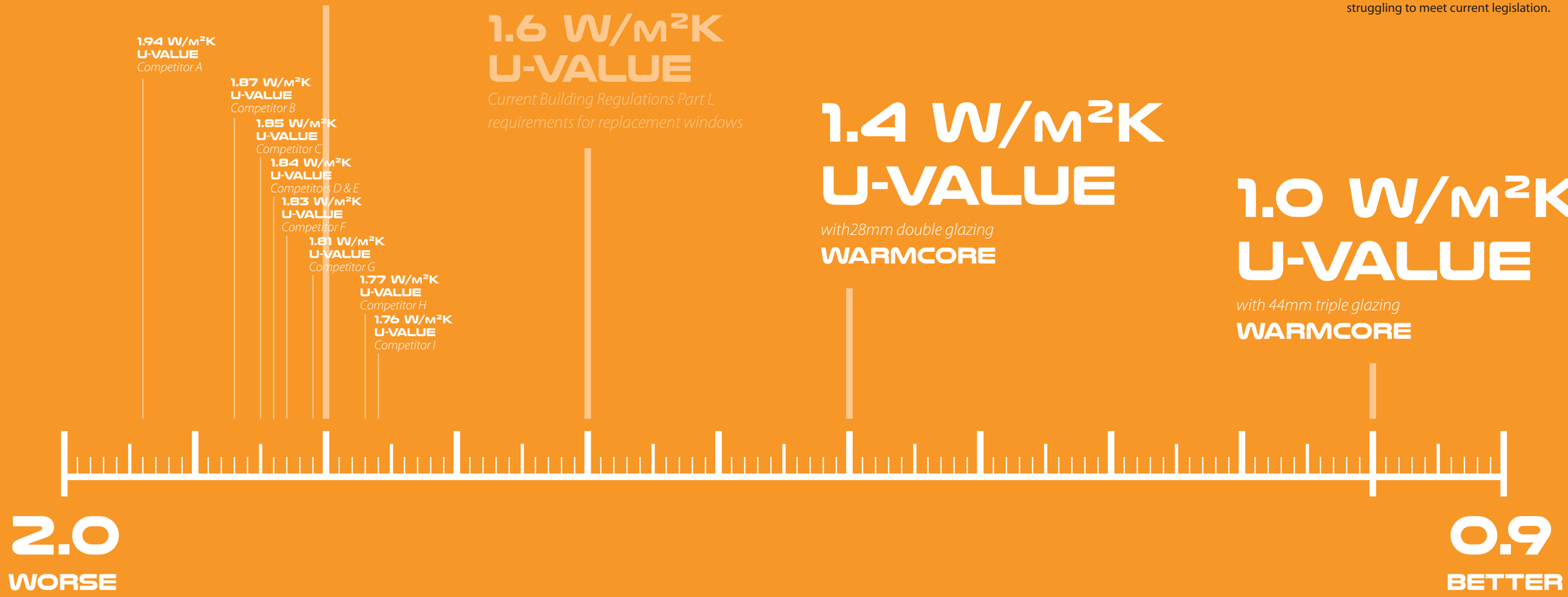
U-VALUE OF 1.0 W/M2K WITH 44MM TRIPLE GLAZING

The key to WarmCore's thermal performance is locked away inside

THE WARMCORE ADVANTAGE
U-VALUE PERFORMANCE

WarmCore has been designed from the ground up to offer market leading thermal performance, protecting against future tightening of Building Regulations. Using standard double glazing the WarmCore folding sliding door achieves a U-value of 1.5, with U-values as low as 1.0 achievable using 44mm triple glazing.

The advantage against traditional aluminium doors is clear, with many struggling to meet current legislation.



Custom designed handle - suited to perfectly match the WarmCore hardware range

HI-TECH ELEGANCE

Precision-manufactured with a high quality surface finish and affording slim sightlines when installed, aluminium has become the material of choice for premium folding sliding door applications. WarmCore doors utilise a composite of materials to ensure an end product that is energy efficienct and recyclable combined with the premium quality, structural integrity and architectural design elegance of aluminium to create a product perfect for both residential and commercial building applications.

From the rollers to the handles to the corner assemblies, WarmCore displays an elegance of design that translates into a high performance installed product that looks outstanding.

WEATHER RESIGTANCE

o Folding sliding door leaves are triple-sealed with contact weatherstrip gaskets to eradicate draughts and ensure excellent weathertightness

o Best-in-class weathertightness for all-year-round user comfort

o Gasket corner mouldings for sash-to-frame and sash-to-sash applications use a push-fit design to neatly and positively couple with straight-cut gasket lengths for easy application, whilst avoiding any need to overrun gaskets to fill gaps between sashes

An attention to detail that goes as far as creating bespoke union mouldings for gaskets ensures WarmCore outperforms the competition

HIGH STRENGTH CONSTRUCTION

o PAS24 and Secure By Design (SBD) compatibility as standard provides peace of mind for end users. WarmCore doors have been independently third party tested by a UKAS laboratory to prove impressive structural strength and security credentials

o Double-strength sash corners are mechanically jointed and use a combination of internal aluminium cleats and a wrap-around corner moulding block to ensure secure rigidity and robustness in use

o Custom-engineered extruded aluminium hinges are designed with security in mind

o Hinges clip-fit for ease of on-site installation

o Integral dog-bolt feature for high security

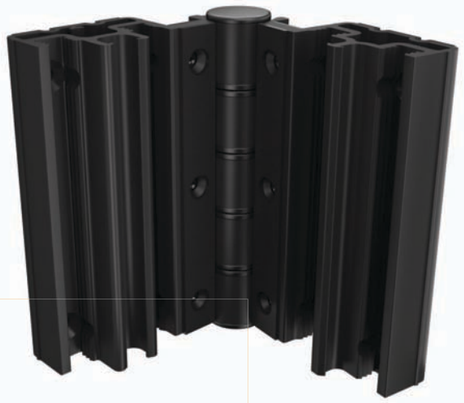
o Multiple screw fixings are sited at the knuckle and in the main body

o Run-through gasket grooves allow for continuous weather-seals

o Robustly designed to take the weight of triple glazed units as standard

o Custom-designed sash corner blocks cater for plain corner, shoot bolt, roller casting and pivot hinge applications and these hardware components ensure high quality installation and operational performance

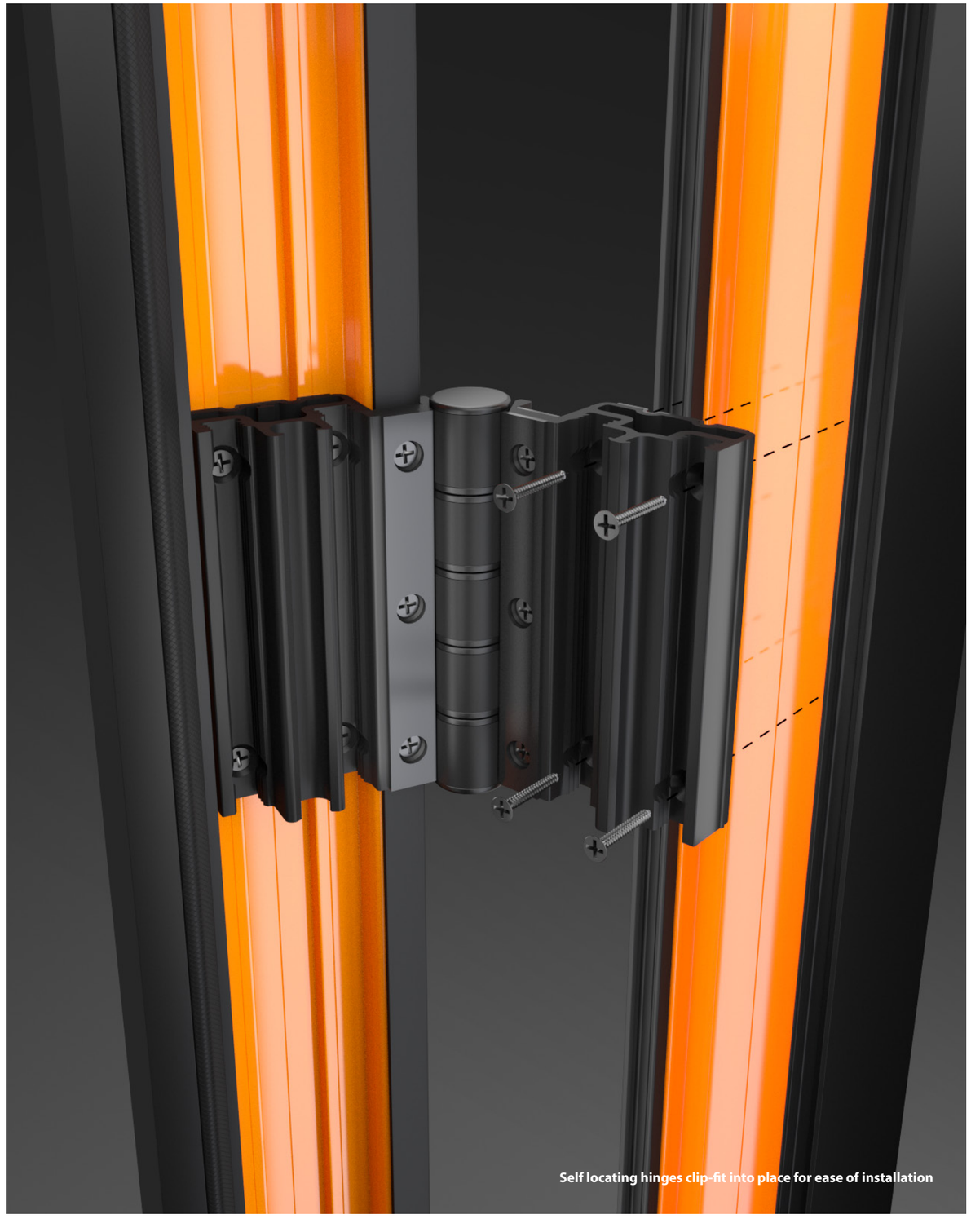
o Added reassurance for both installers and homeowners is delivered by our custom-designed hardware development partners who underwrite and provide an ERA "Five-Star" security guarantee against forced entry for a period of 10 years



High security self-locating hinge shown above

Double pivot roller shown below

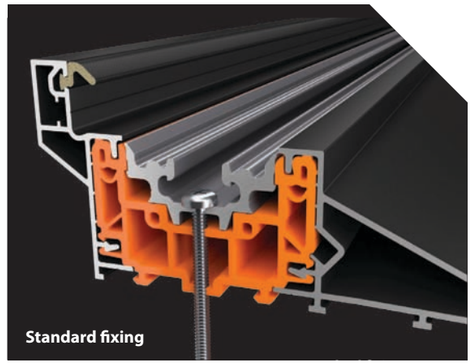
Precision roller assembly ensures years of trouble free operation



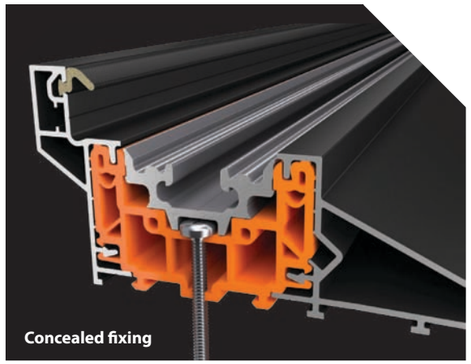
Self locating hinges clip-fit into place for ease of installation

EASE OF INSTALLATION

The WarmCore folding sliding door has been designed to be as fitter-friendly as possible. The innovative clip-in bead design makes it easy to glaze without the need for wedge gaskets and all round concealed fixings provide improved aesthetics. The clever aluminium track design also enables a quick all-in-one fitting procedure without the need for de-sashing, if required.



Standard fixing



Concealed fixing

EASE OF ADJUSTMENT

To aid perfect trouble free installations plain hinges, pivot roller hinges and espag hinges provide +/- 1mm adjustment to cater for fine tolerances on site. Single roller and double “pivot” rollers provide +/- 3mm vertical adjustment for precision installation.

Fast-clip-in hinge and roller adjustment packers allow for quick yet precision adjustment and fine-tuning on site.

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WarmCore 4 / 3 / 1

EXTERNAL STYLING

Four external aluminium fascia designs deliver a range of classic aesthetics:

Pencil round [1]
Chamfered [2]
Square [3]
Decorative [4]

GLAZING OPTIONS

WarmCore doors can be glazed with 28mm double glazed units or 44mm triple glazed units.

Glazing can be carried out with a choice of aluminium beads for a neat internal finish:

[1] **Square all round (horizontals and verticals)**

[2] **Chamfered (option for verticals)**

[3] **Triple glazing uses 44mm TG bead all round (horizontals and verticals)**

COLOUR RANGE

Four aluminium cladding colours are readily available from stock, providing 16 possible colour configurations to sell straight from stock including dual-colour options:

White
colour matched with Synseal conservatory roofs and orangeries

Cream
colour matched with Synseal conservatory roofs and orangeries

Black
RAL 9005

Grey
RAL 7016

BI-FOLD, FRENCH AND RESIDENTIAL DOORS

Traditional French and residential doors can be constructed using the WarmCore system, in addition to a comprehensive range of bi-fold doors including all the popular elevational configurations and stacking options. Folding sliding doors up to six metres wide incorporating seven sashes can be specified. A midrail option is also available.

MAX WIDTH: 6000MM
MAX OUTER FRAME HEIGHT: 2400MM
MAX SASH WIDTH: 1000MM
MAX LOAD PER SASH: 100KG

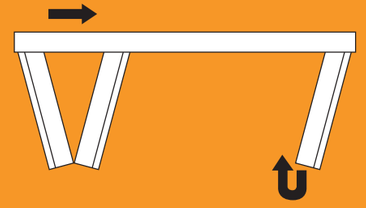
Residential door 1 / 0 / 1

French door 2 / 1 / 1

3 / 2 / 1

How sliding folding door configurations work

Viewed from the outside



3 / 2 / 1

Total number of door leaves

Number of door leaves opening left

Number of door leaves opening right

4 / 2 / 2

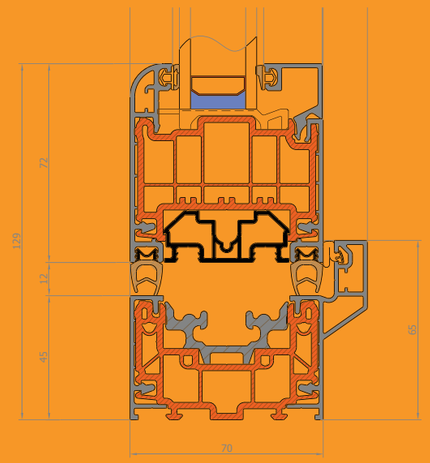
7 / 4 / 3

Low threshold detail

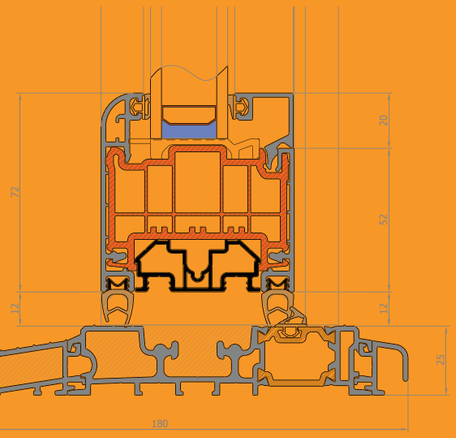
FLEXIBLE THRESHOLD OPTIONS

Sill options include a WarmCore standard threshold with integral sill, or standard threshold with an additional 150mm thermally-broken aluminium sill. The Part M compliant low threshold design is thermally-broken aluminium and optional ramps and cover trims can be used internally, externally or both, depending on requirements. Part M compliant low threshold can also be installed without any ramps, so that flooring can be laid up to the edges of the threshold or the threshold can be neatly set into the floor to create a flush floor level through the doorway.

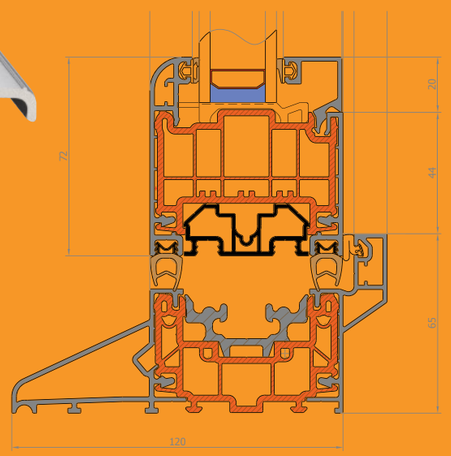
No sill



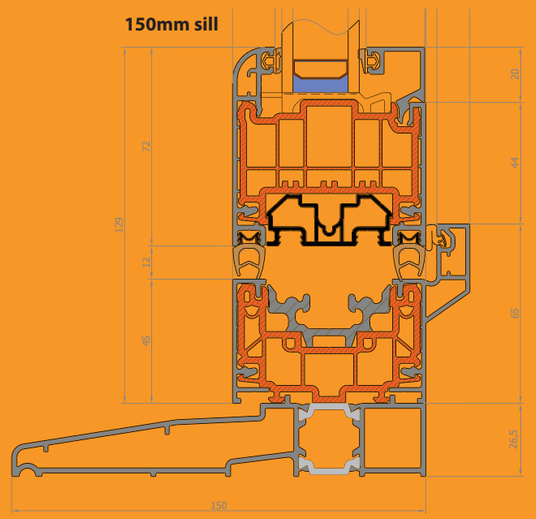
Part M compliant Low threshold (Ramp/trim variant shown)



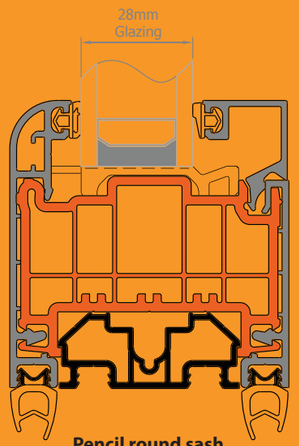
Integrated sill



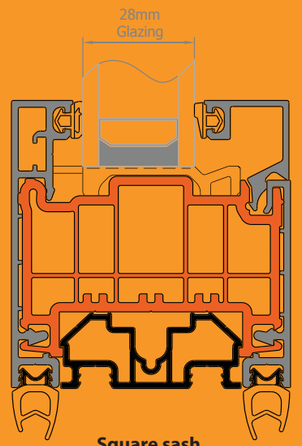
150mm sill



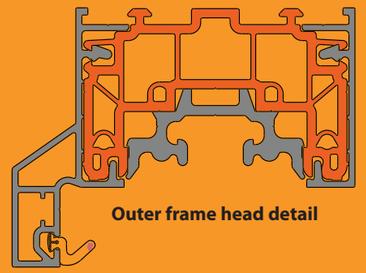
WARMCORE KEY COMPONENTS



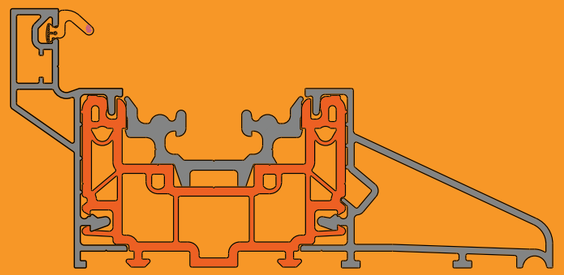
Pencil round sash



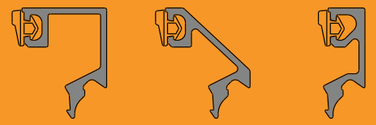
Square sash



Outer frame head detail



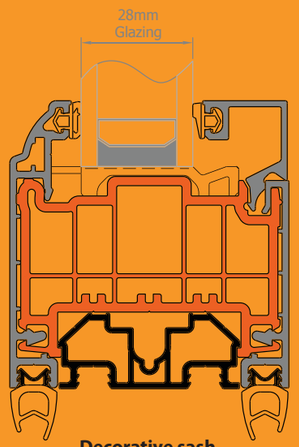
Outer frame threshold detail



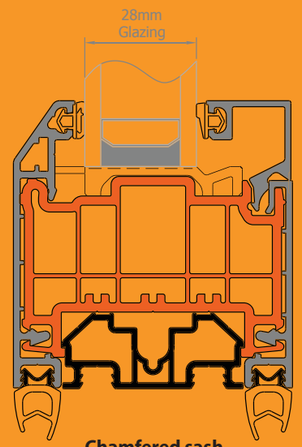
Square bead

Chamfered bead

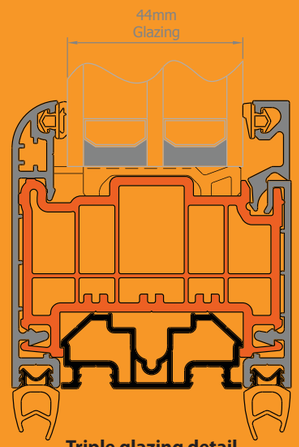
Triple glazing bead



Decorative sash



Chamfered sash



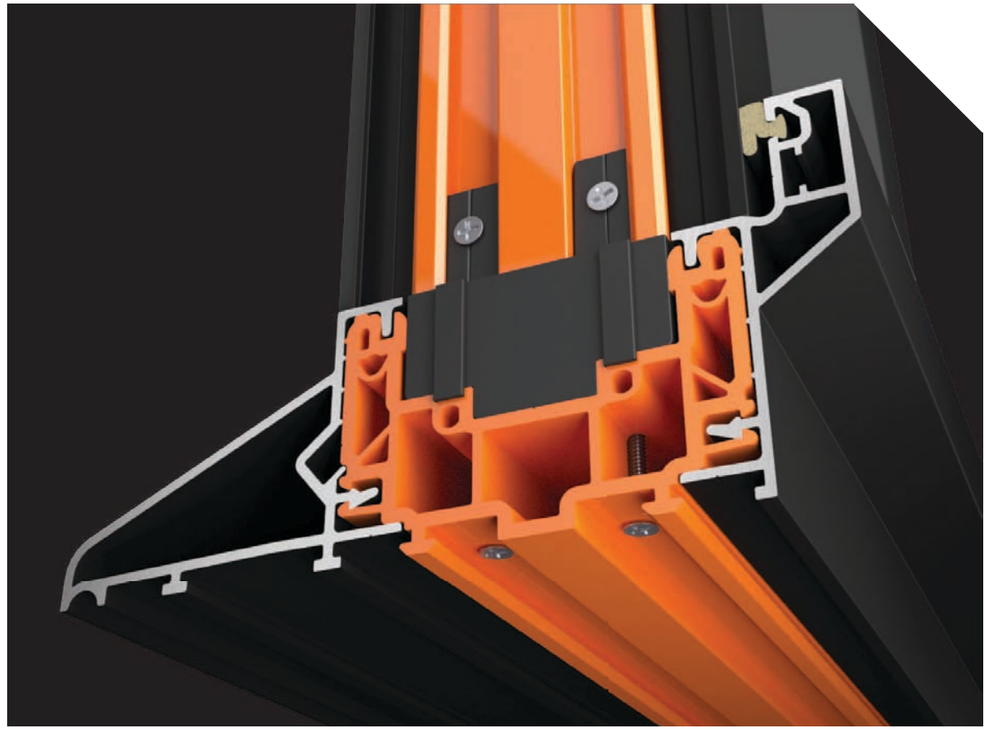
Triple glazing detail

EFFICIENT TO FABRICATE

Internal and external aluminium fascias are integrated under high pressure onto the distinctive orange thermal core by the fabricator immediately prior to cutting to bar length. The aluminium profiles can be stocked in multiple colour options, giving the fabricator flexibility on colour combinations while reducing stock holding requirements with minimal lead times for last-minute colour selections. With White, Cream, Black and Grey cladding colours, WarmCore gives 16 possible colour configurations including dual-colour options.

WARMCORE IS DESIGNED TO MINIMISE STOCKHOLDING BUT MAXIMISE OPTIONS

Gasketed frames are easily manufactured using push-fit sash-to-frame and sash-to-sash corner mouldings which positively engage with straight-cut gasket lengths.



THE WARMCORE DESIGN TEAM

"At Synseal our intent is to design new improved products to arm our existing and prospect customers with value-adding sales opportunities. WarmCore is a real winner – a bold concept with many technical advantages, delivering true innovation and signalling exciting times ahead."
Steve Brown, Head of Customer Care & Product Strategy

"WarmCore is an innovative development concept which mirrors our market-leading conservatory roofs by using a proven combination of aluminium and PVC-U materials to deliver reliable and highly efficient performance-in-use results."
Kevin Wain, R&D Manager

"With WarmCore our aim was to raise the bar for aluminium in terms of thermal insulation, structural strength and design elegance – there's undoubted potential to extend the system's scope way beyond the initial range of bi-fold, French and residential doors."
Phil Parry, Head of R&D

"As Project Manager, it has been satisfying to guide this new product through all the R&D process stages from initial design to production – there's no doubt that the thermal efficiency of WarmCore provides future-proofing against potential Building Regulations upgrades."
Greg Tabberer, R&D Engineer & WER Simulator

SYNSEAL

Following a successful management buy-out in 2010 led by Chief Executive David Leng, Synseal has grown dynamically and is today a highly focussed, profitable business with sales in excess of £100 million and over 900 employees. Proud of its UK ownership and manufacturing traditions with a trading heritage stretching back over 30 years, Synseal now supplies market-leading conservatory roofs, window and door systems, insulated glass units, hardware, portal frames and ancillary products to a network of fabricator partners.

Thousands of professional installers choose to purchase Synseal products on a regular basis and Synseal recognises and values the loyalty of trade customers, always seeking to find new ways of offering practical support to help Synseal business partners win in the competitive marketplace.

The Synseal product range includes Legend, SynerJy and Shield 70mm PVC-U window and door systems, a choice of Global or K2 conservatory roof systems incorporating a range of designer orangery solutions, Global Glass sealed units which feature the company's exclusive Celsius performance glass for premium applications, in addition to an Evolve range of fully manufactured and CE Marked specialist PVC-U products which includes bi-fold doors, patio doors and vertical sliding sash windows.

WarmCore featuring "warm aluminium" construction is the latest product design innovation by Synseal and signals a new chapter in this award-winning company's history, with a continued pledge of delivering high quality products and service excellence to the fenestration industry.

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