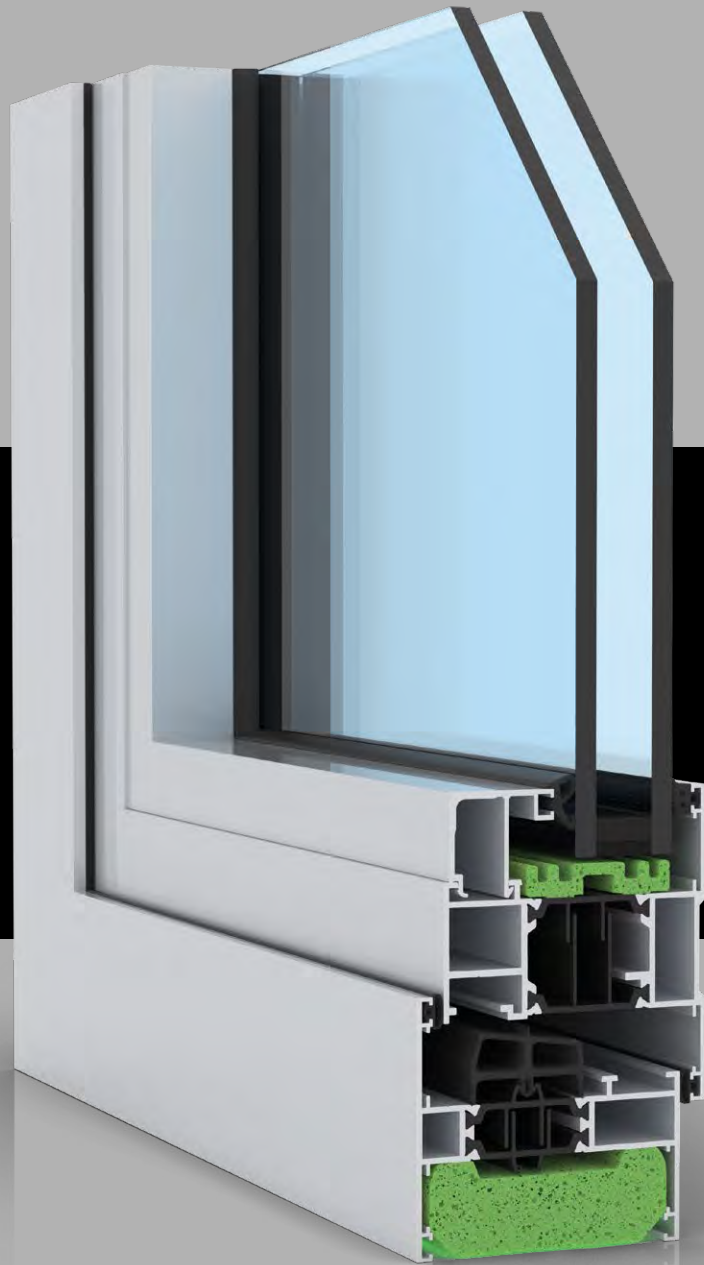


THERMAL™

System 4-35 Hi+

Casement Window &
Parallel Opening Vent (POV)





THERMAL™

System 4-35 Hi+

Metal Technology's System 4-35 Hi+ Casement Window and Parallel Opening Vent (POV) suites offer the designer a wide and diverse range of profiles that will provide structural integrity, weather performance, thermal enhancement and security.

Bespoke thermal isolators and insulation, combined with structural mullions, vents and outer frames offer architects and designers the ability to achieve flexible design solutions. The high performance 4-35 Hi+ glazing system complies with the following standards: BS 6375 pt 1, 2 and 3, PAS 24 and is acoustically tested in accordance with BS EN ISO 140-3 and BS EN ISO 717-1.

Introduction

The 4-35 Hi+ Casement range is an adaptation of the 4-35 Hi range through the inclusion of additional gaskets and foam inserts which further enhance the system's thermal performance.

Using the same range of profiles, Metal Technology's Parallel Opening Vent not only offers an aesthetic option to architects as it maintains the vertical sight lines of the building, but also provides a highly efficient method of ventilating an area within the structure. This design of vent offers double the air flow of a traditional top hung window with its utilisation of both high and low ventilation zones.

As with all Metal Technology systems, System 4-35 Hi/Hi+ is manufactured to exacting standards enabling economy to be combined with strength to give many years of aesthetic, trouble-free operation.

Materials

Aluminium profiles are extruded from aluminium alloy 6060T6, T5 or T4 complying with the recommendations of BS EN 12020-2 / BS EN 755 - Parts 1 to 9. Polyamide thermal breaks are produced from glass reinforced nylon sections.

Finishes

The range of sections can be provided in either of the following ranges of finishes:

1. Anodised to BS EN ISO 7599 or BS 3987
2. Powder organic coated to BS EN 12206-1

System 4-35 Hi+ window can accommodate a different colour/finish internally to that used externally.





Casement Window Fittings

The 4-35 Hi/Hi+ sections are designed to suit friction hinges or butt hinges and a variety of espagnolette handle options. Metal Technology recommend the use of limiting stays to prevent the window opening more than 100mm. All open out windows should be closed during inclement conditions.

Parallel Opening Vent (POV) Fittings

The 4-35 Hi+ sections are created to suit bespoke friction hinges with a built-in restrictor designed to provide 100mm clear opening to the full perimeter in an open vent position. These are located at head, cill and jamb locations to facilitate smooth operation of the window. The POV has been designed to facilitate jamb handle heights of mid point and a third point at the bottom of the vent.

Construction

Frame members are mitre cut at 45°, corners are reinforced with extruded aluminium crimping cleats and corner braces, and a secure joint is formed by pneumatically crimping into the extruded crimping cleat. Mullion and transom bars are square cut shaped and fixed securely to the frame by means of stainless steel screws and fixing cleat joints. All frame joints are sealed during construction against entry of water using a suitable sealant. Extruded weatherstrips and glazing gaskets are provided to resist the ingress of water.

Features

The system can accommodate glazing units from 28mm to 55mm

Available in single or dual colour standard RAL finishes

PAS 24 Security tested options to comply with Secured by Design criteria



LogiKal estimating and production software for manufacturing, glass and U-value calculations

Bespoke tooling and jigs to assist with rapid manufacture



Casement Window

Maximum Size Limits - Friction Hinges

	Vent Width	Vent Height	Vent Weight
Top Hung Casement	2500mm	2500mm	180 Kg
Side Hung Casement	1000mm	2000mm	60 Kg

Casement Window

Maximum Size Limits - Butt Hinges

	Vent Width	Vent Height	Vent Weight
Top Hung Casement	1800mm	1450mm	95 Kg
Side Hung Casement	1200mm	2500mm	90 Kg

Parallel Opening Vent

Maximum Size Limits - Parallel Opening Hinges

	Vent Width	Vent Height	Max Weight
Handle at jamb	1200mm	2500mm	100 Kg
	540mm	540mm	

Note - Maximum height and width may not be achieved simultaneously. Please refer to technical literature.



Thermal Performance

Metal Technology's **THERMAL** range, in conjunction with the correct glass specification, is designed to aid compliance with the latest thermal requirements of the current building regulations.

The extended polyamide thermal break profiles, incorporating integral fins have been specifically designed to minimise heat transfer across the window profiles. This innovative and advanced thermal break technology provides the basis of the 4-35 Hi system.

The 4-35 Hi+ System further boosts thermal performance through the introduction of specially designed thermal gaskets and foam profiles. These reduce radiation heat loss across the air cavities within the window profiles to provide additional thermal enhancement.

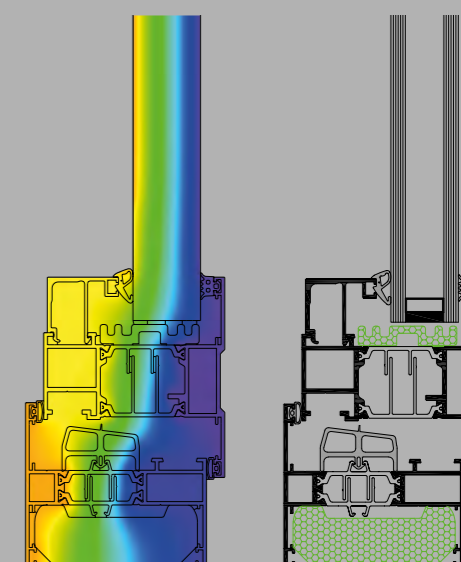
The 4-35 Hi and 4-35 Hi+ systems offer significantly improved U-frame values over more traditional thermally broken aluminium window systems.

	U-frame values	
	4-35 Hi	4-35 Hi+
Fixed light outer frame casement or POV	1.92 W/m²K	1.34 W/m²K
Outer frame and glazed out vent casement only	2.56 W/m²K	1.69 W/m²K
Outer frame and glazed in vent casement or POV	2.57 W/m²K	1.69 W/m²K

The following table, based on a standard commercial GGF window configuration and warm edge spacers, demonstrates how such improved U-frame values then contribute to improving the overall thermal performance of a complete window.

Achievable whole window U-values	Centre pane U-value	
	1.0 W/m ² K	0.5 W/m ² K
4-35 Hi glazed out casement only	1.48 W/m²K	1.08 W/m²K
4-35 Hi glazed in casement or POV	1.54 W/m²K	1.16 W/m²K
4-35 Hi+ glazed out casement only	1.30 W/m²K	0.91 W/m²K
4-35 Hi+ glazed in casement or POV	1.34 W/m²K	0.97 W/m²K

Metal Technology can provide tailored U-value calculations using their dedicated estimating software to calculate overall project average window U-values for their full range of systems.







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Building a Sustainable Future



Target Net Zero

Addressing climate change is a priority for Metal Technology. Our commitment to achieving Net Zero emissions is at the forefront of our sustainability goals, and we are actively implementing strategies to reduce our carbon footprint across our entire value chain, from supply and production through to distribution.

Low Carbon Aluminium

We are dedicated to reducing carbon emissions through the use of Low Carbon Aluminium Windows, Doors and Curtain Walling.

RecycAL 4.0 - aluminium billet with a carbon footprint below 4.0kg CO₂/kg, supplied as standard across our full façade range.

RecycAL 1.9 - an ultra-low carbon option at 1.86kg CO₂/kg, made with 75% post-consumer scrap, available for project-specific applications.

Aluminium

Aluminium's inherent properties make it one of the most sustainable construction materials. It is infinitely recyclable, lightweight yet strong, highly durable and simple to maintain. As the earth's third most abundant element, aluminium is non-toxic, non-flammable and emits no harmful vapours or particles. With finishes such as anodising or powder coating, aluminium components require only routine cleaning with mild detergents to maintain long-term performance.

Closed Loop Recycling Scheme

Metal Technology is a member of the Council for Aluminium in Building's (CAB) Closed Loop Recycling Scheme. Through monthly reporting and approved recycling routes, all aluminium scrap is returned to a dedicated smelting facility and reprocessed into new billets and extrusions. This closed-loop system ensures high-quality material recovery and allows profiles to be recycled back into profiles, maximising resource efficiency.

Corporate Social Responsibility

Metal Technology integrates responsible, ethical practice into every aspect of its business, emphasising continuous improvement and long-term sustainability. We work transparently with customers, employees and suppliers, uphold recognised human-rights principles, and foster fair, respectful relationships throughout our operations. Ongoing engagement with stakeholders helps ensure our activities contribute positively to both local communities and the wider industry.

A cornerstone of our CSR commitment is reducing environmental impact and advancing a more sustainable built environment. We prioritise energy efficiency, minimise waste and emissions, recycle all scrap aluminium and maximise the use of recycled content. With clear supply-chain visibility and strong collaboration with vendors, we promote high environmental and social standards, reduce packaging and transport impacts, and support reuse and recycling initiatives. Our BES 6001 responsible sourcing certification further demonstrates our long-standing dedication to ethical operation and environmental stewardship.

Passive House Range

Metal Technology's dedication to fostering a sustainable built environment and its proactive, diligent support of stakeholders has resulted in the creation of our Passive House range. Our Passive House products combine high performance, low air permeability, functionality, security, and stunning aesthetics to help meet the overall requirements of Passive House criteria.

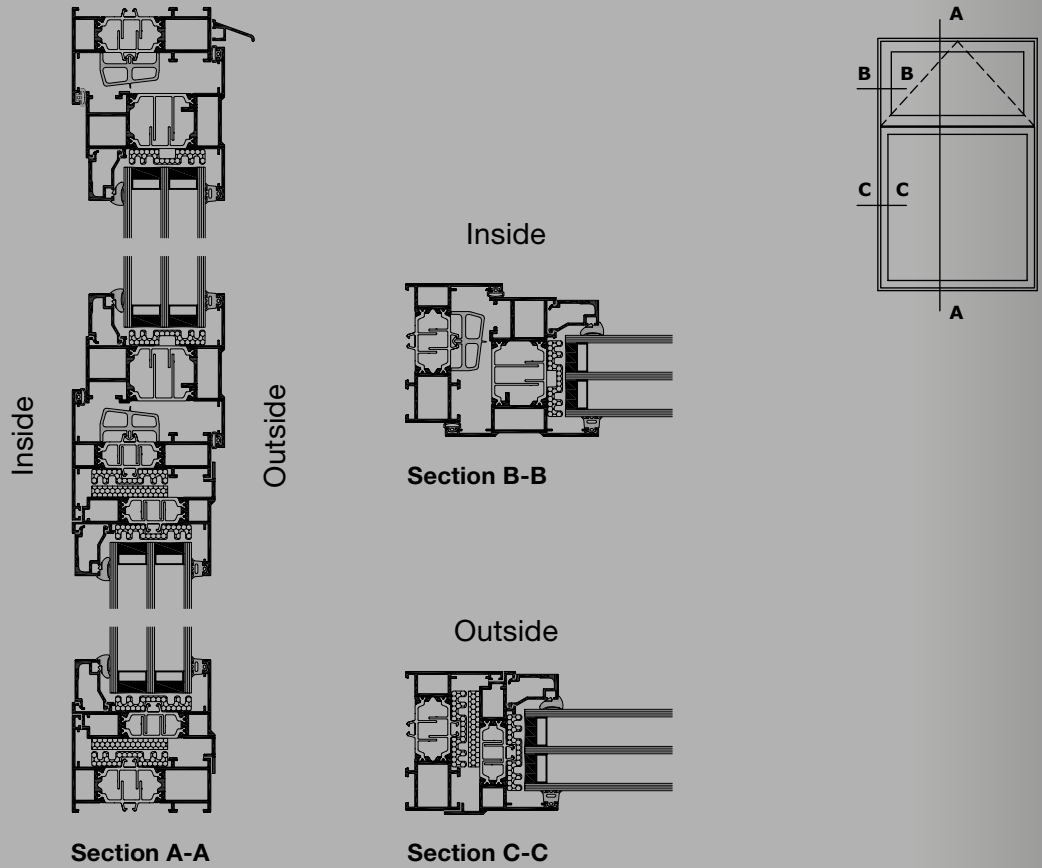
We collaborate closely with our valued supply chain partners, providing expert technical guidance and support from the design phase through to detail development and on-site installation. Additional Passive House products continue to be developed as we work towards reducing our carbon footprint on the path to Net Zero.

To view our Passive House products visit metaltechnology.com/passive-house



Learn more about how Metal Technology is lowering its carbon footprint and the steps we're taking to shape a low-carbon future: metaltechnology.com/sustainability

**System 4-35 Hi+
Triple Glazing**



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To place an order please call **T+44 (0)28 9448 7777**
or email **orders@metaltechnology.com**

