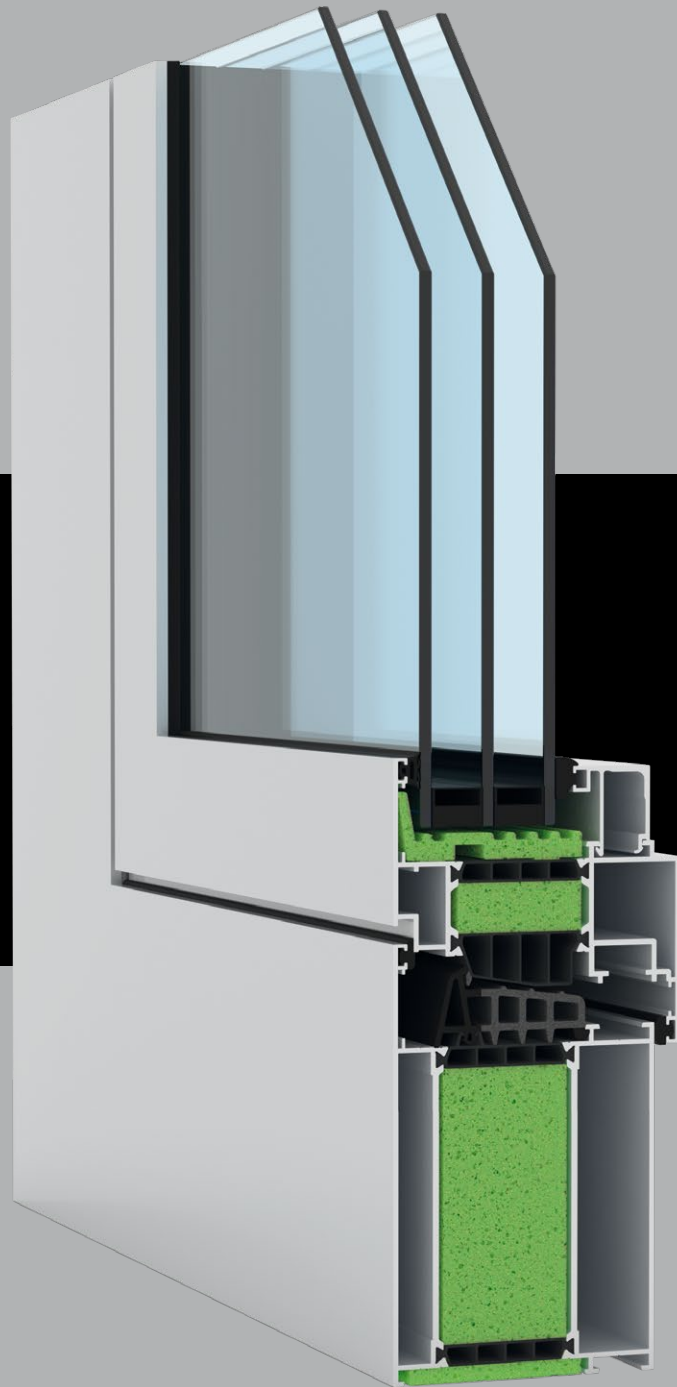


THERMAL™

System 5-45 Hi/Hi+

Tilt and Turn Window





System 5-45 Hi/Hi+

Metal Technology's System 5-45 Hi/Hi+ offers 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 glass selection, offers the ability to achieve Passive House performance levels.

Structural mullions, vents and outer frames offer architects and designers the ability to achieve flexible design solutions. The high performance 5-45 Hi/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.

Scope

This specification defines materials, construction, finishes and size limits for the Tilt and Turn Window.

Thermal Performance

Metal Technology's **THERMAL** range, in conjunction with the correct glass specification, is designed to meet and exceed the latest thermal requirements of the current building regulations. The extended polyamide thermal break profiles, incorporating integral chambers, have been specifically designed to minimise heat transfer across the window profiles. This innovative and advanced thermal break technology provides the basis of the 5-45 Hi/Hi+ system.

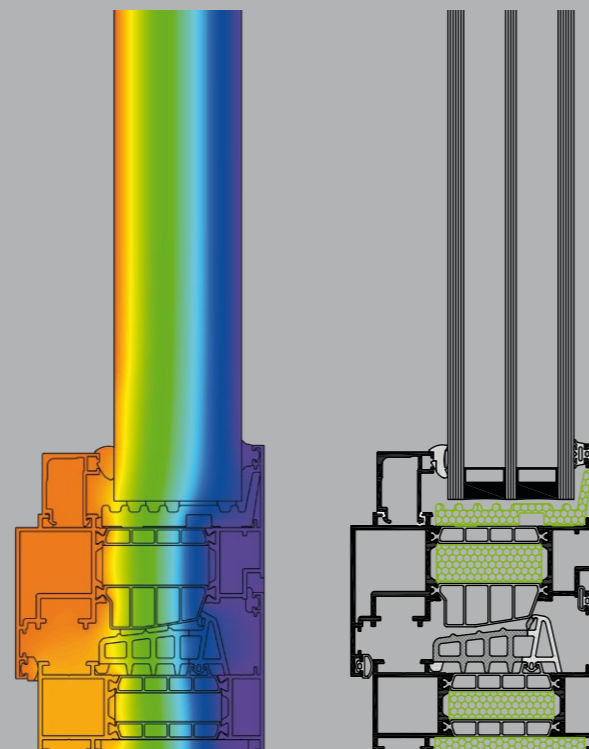
System 5-45 Hi/Hi+ further boosts thermal performance through the introduction of specially designed thermal gaskets and foam profiles. These reduce radiation heat loss across the air cavities within the window profiles to provide additional thermal enhancement.

The 5-45 Hi and 5-45 Hi+ systems offer significantly improved U-frame values over more traditional, thermally broken, aluminium window systems.

	U-frame values	
	5-45 Hi	5-45 Hi+
Fixed lighter outer frame	1.70 W/m²K	0.67 W/m²K
Outer frame and tilt turn vent	1.55 W/m²K	0.77 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
Outer frame and tilt turn vent Hi	1.26 W/m²K	0.91 W/m²K
Outer frame and tilt turn vent Hi+	1.00 W/m²K	0.71 W/m²K



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 12373-1 or BS 3987
2. Powder organic coated to BS EN 12206-1

System 5-45 Hi/Hi+ window can accommodate a different colour/finish internally to that used externally.

Open In Window Fittings

The 5-45 Hi/Hi+ sections are designed to suit tilt before turn fittings, turn only fittings (side hung) and tilt only fittings (bottom hung). All come with a variety of handle options.

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 Metal Technology's two-part adhesive.

Features

This system offers internally glazed sashes and can accommodate glazing units from 26mm to 65mm units.

Fixed panes may be externally glazed with the addition of a liner bar profile

Available in single or dual colour standard RAL finishes

Passive House Certified



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



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

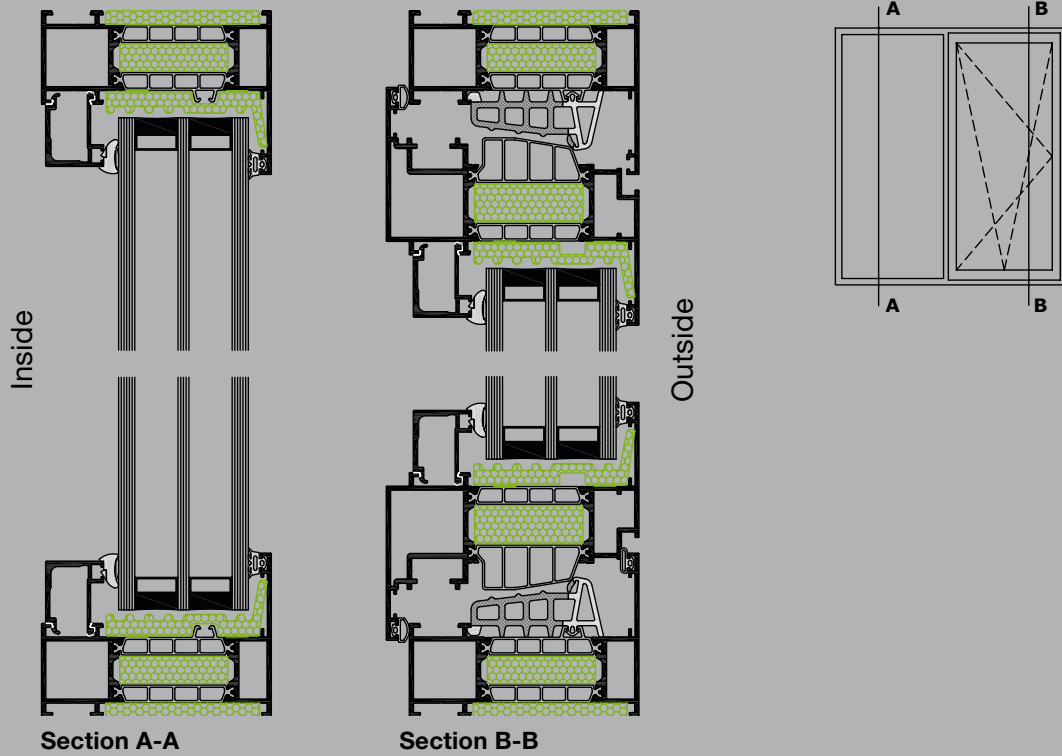
Bespoke tooling and jigs to assist with rapid manufacture

Size Limitations

	Vent Width	Vent Height
Tilt Before Turn	1687mm	3000mm
Tilt Only Sashes	1687mm	3000mm
Turn Only Sashes	1687mm	3000mm

Maximum height and maximum width cannot be achieved simultaneously. This table provides basic guidance. Please refer to size limitation charts in Metal Technology's technical literature for further details.

System 5-45 Hi+ Profiles



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