THERMAL™

System 4-35Hi+
Parallel Opening Window

Metal Technology's Parallel Opening Window 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.

Introduction
Metal Technology's System 4-35Hi/Hi+ Parallel Opening Window offers the designer a wide and diverse range of profiles that will provide structural integrity, weather performance, thermal enhancement and security.

The Parallel Opening Window is an adaptation of the 4-35Hi/Hi+ range that utilises the inclusion of additional gaskets and foam inserts which further enhance the system's thermal performance.

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

Scope
This specification defines materials, construction, finishes, glazing and security for the 4-35 Parallel Opening Window.

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

	U-frame values	
	4-35Hi	4-35Hi+
Fixed light outer frame	1.92W/m²K	1.34W/m²K
Outer frame and glazed in vent	2.57W/m²K	1.69W/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-values	
	1.1W/m²K	0.6W/m²K
4-35Hi glazed in casement	1.62W/m²K	1.30W/m²K
4-35Hi+ glazed in casement	1.39W/m²K	1.04W/m²K

Window Energy Rating
Metal Technology's 4-35Hi+ System has been assessed by an approved simulator in accordance with the BFRC's guidelines, using their official Window Energy Rating software, and has been proven to be capable of achieving an **'A+' rating**.

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 designed to withstand temperatures in excess of 200°C, allowing the sections to be powder coated after thermally breaking.

Finishes
The range of sections can be provided in either of the following range of finishes:
1. Anodised to BS EN 12373-1 or BS 3987
2. Powder organic coated to BS 6496 or BS EN 12206-1

Where a different colour is required internally and externally, Metal Technology can accommodate this.

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.

Metal Technology recommend that A2 or A4 Austenitic (300 series/class 70) stainless steel fixing screws are used in the assembly of their products.

Installation
Detailed installation instructions are provided which should be strictly followed.

Glazing
The system can be glazed internally or externally and can accommodate glazing units from 28mm to 47mm. Glass is set against extruded gaskets which are fitted into gasket grooves in the window profile. Clip in beads are then fitted to the frame and the glass secured by means of colour coded wedge gaskets. Standard moulded setting/location blocks are provided to clip into the sections.

Security
The System 4-35Hi/Hi+ Parallel Opening Window has passed PAS 24 "Specification for Enhanced Security Performance of windows" as generally accepted on Secure by Design projects. To conform, the window hardware must be in accordance with the tested samples as detailed in Metal Technology's technical literature.

Security products should be labelled by the fabricator in accordance with BS 4873.

Parallel Window Fittings
The sections are designed to suit Parallel opening hinges and espag locking. Metal Technology are able to supply a full range of fittings and accessories. Metal Technology should be contacted for any special operating requirements. All open out windows should be closed during windy conditions.

Maximum Sash Size Limits

Vent Width	Vent Height	Vent Weight
2000mm	2500mm	200 Kg

Minimum Sash Size Limits

Vent Width	Vent Height
540mm	540mm

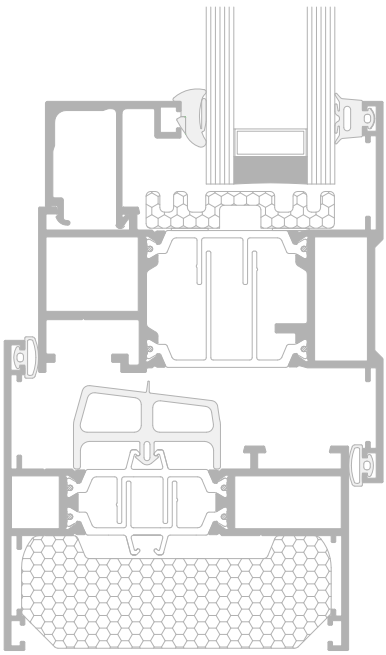
Note that maximum height and maximum width cannot be achieved simultaneously.

For complete details of maximum/minimum sizes and weight restrictions, see the size limitation charts in the System 4-35Hi/Hi+ Parallel Opening Window manual.

Performance
Air permeability - BS 6375: Pt 1
test pressure 600 Pa.
Water tightness - BS 6375: Pt 1
test pressure 600 Pa.
Wind resistance - BS 6375: Pt 1
test pressure 2400 Pa.
These levels of performance should be sufficient for any location within the UK and Ireland.

BREEAM Sustainability Rating
When assessed in accordance with the profile mass formula, as set out in the BRE's Green Guide for sustainable design and environmental performance, Metal Technology's 4-35Hi and 4-35Hi+ Systems achieved an **'A' rating**.

Development
Our policy is to continually research the market for new and improved products. We must therefore retain the right to amend specifications without prior notice. It is recognised at Metal Technology that in some instances special sections may be required for particular projects. When this occurs it may be possible to produce special sections subject to there being sufficient quantity and adequate time.



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