

Dual Colour Windows & Doors



Metal Technology



The Metal Technology range of Dual Colour Windows and Doors have been designed to offer the architect and specifier the advantages of state-of-the-art thermal break technology and two colour finish option demanded by modern building design.





## System 1 Dual Colour Top Swing Window

▲ Travel Lodge, Canary Wharf, London

◀ Gatwick House, Hull

### Top Swing Operation

The top swing window offers many advantages over other types of window, the principal ones being that it can be easily and safely cleaned from within the building by reversing the window through 180°. Safety restrictions built into the window fittings ensure that the window can be restrained securely in the ventilation or reverse position. In analysing the risk associated with cleaning windows from within the building, BS8213: Pt.1:1991 (Table 1) rates this type of window as one of the safest. Other advantages include the ability to reverse the window through 180° without the window projecting inwards into the room - avoiding any interference with blinds and curtains. Metal Technology believe that this window offers a clear alternative to pivot windows, not only because of the advantages mentioned above, but also because it is much simpler to construct and avoids the excessively wide sight lines associated with many 180° reversible pivot windows.

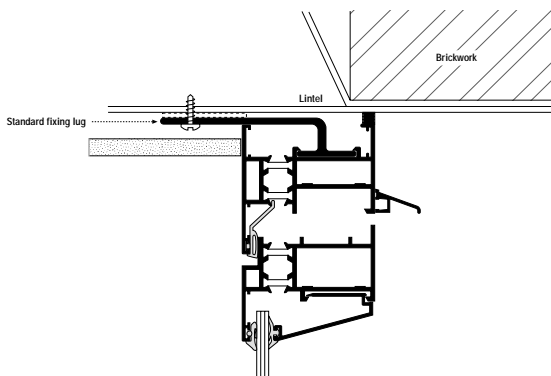
### Maximum Size Limits

Height	Width	Vent Weight
1600mm	1600mm	80 Kg

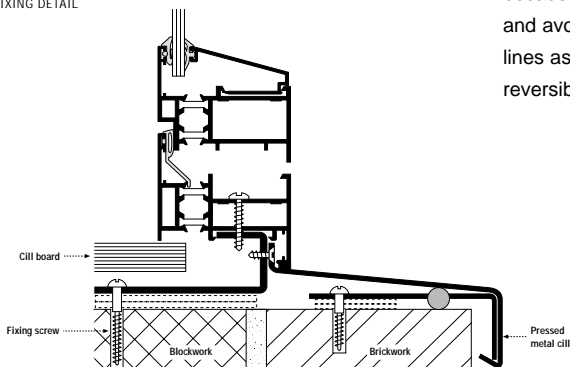
### Glazing

Glazing is from outside, or inside with the windows in the reverse position. Glass is set against co-extruded (PVC Nitrile) gaskets externally which are fitted to the externally fitted beads and an extruded colour coded wedge is fitted internally. The corners of the gaskets are accurately mitred together and sealant is applied to ensure an effective joint. Glazing options accommodate from 4mm single glaze to 30mm DG units.

TYPICAL HEAD FIXING DETAIL



TYPICAL CILL FIXING DETAIL





## System 2 Dual Colour Casement Window

▲ Lisson Green Development, London



▲ Reading University

**Standard Casement Operation**  
The standard dual colour open-out casement offers a traditional aluminium window design with the added advantages of Metal Technology's advanced thermal break technology. The standard dual colour open-out casements are designed to incorporate heavy duty casement friction hinges, allowing larger windows to be fabricated than are available in the Metal Technology casement window range. The use of friction hinges allows windows to be cleaned from within the building. However, the requirements of BS8213 Pt. 1:1991 (Table 1) should be considered with regard to cleaning the windows from the outside.

### Maximum Size Limits Standard Open-out Casements

	Vent Height	Vent Width	Weight	Width/Height ratio
Side Hung	1500	800	52 Kg	1.5
Top Hung	1321	1600	74 Kg	-

These sizes are based on the use of "SecuriStyle Senator" hinges.

### Heavy Duty Open-out Casement

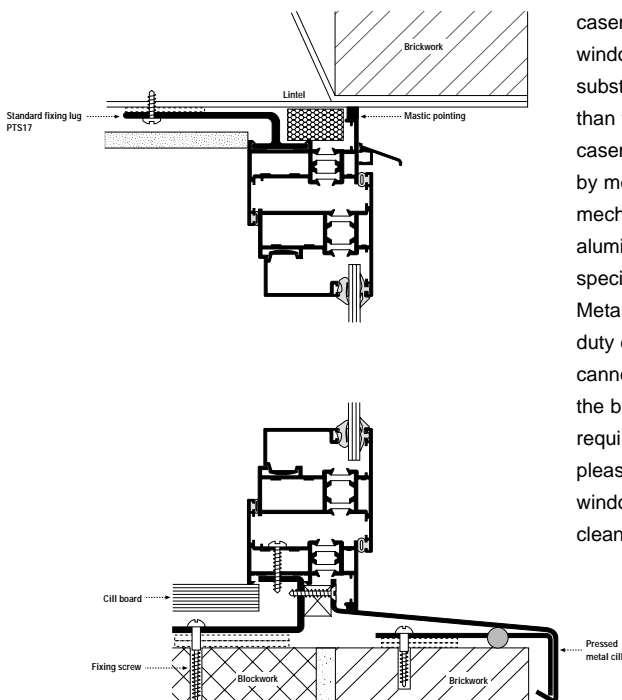
	Vent Height	Vent Width	Weight	Width/Height ratio
Side Hung	2100	1600	100 Kg	1.5
Top Hung	1500	1800	100 Kg	-

### Glazing

Glazing is from inside. Glass is set against co-extruded (PVC Nitrile) gaskets externally which are fitted to the frames and an extruded colour coded wedge is fitted internally against the beads. The corners of the gasket are accurately mitred together and sealant is applied to ensure an effective joint. Glazing options accommodate from 4mm single glaze to 30mm DG units.

### Heavy Duty Dual Colour Side Hung & Top Hung Open-out Casements

The heavy duty dual colour open-out casement offers a heavy duty window, capable of achieving substantially larger opening vents than the standard dual colour casement window. It can be operated by means of a concealed locking mechanism. The window is hung on aluminium butt hinges which are specially manufactured to suit the Metal Technology profiles. The heavy duty dual colour casement window cannot be safely cleaned from inside the building. Where this is a requirement Metal Technology will be pleased to suggest alternative window types which may be safely cleaned from inside the building.





## System 3 Dual Colour Tilt Turn Window

▲ Aeroplane Engineering Complex, Cranfield University, Bedfordshire



▲ Hillside Towers, Sheffield

### Tilt Turn Operation

The tilt turn window offers many advantages over other types of window, the principal one being that it offers the specifier the advantage of both being able to open the window for ventilation in a bottom hinged mode, and also being able to open the window for cleaning in the open-in mode. Safety restrictions built into the window fittings ensure that the window can not be changed from ventilation to cleaning mode without fully closing the window. In analysing the risk associated with cleaning windows from within the building, BS8213: Pt. 1:1991 (Table 1) rates this type of window as one of the safer types of window.

The fittings used on this window are based on those used for the tilt turn allowing the same operating handles to be used on either type of window. Metal Technology recommend that either the lockable handle or the fireman's axe operation is used where windows are not going to be opened for ventilation.

### Maximum Size Limits

#### Tilt Turn & Side Hung Open-in Window

Section	Vent Height	Vent Width	Vent Weight	Width/Height ratio
Medium	1800	1100	120 Kg	1.5
Heavy	2100	1600	120 Kg	1.5

#### Bottom Hung Open-in Window

Section	Vent Height	Vent Width
Medium	1200	1600

### Bottom Hung, Open-in Window

This window is a useful addition to the Metal Technology range of open-in windows, offering the specifier the opportunity to incorporate these economic windows wherever access for cleaning is not a specific requirement. All cutting sizes for this window are as the tilt turn.

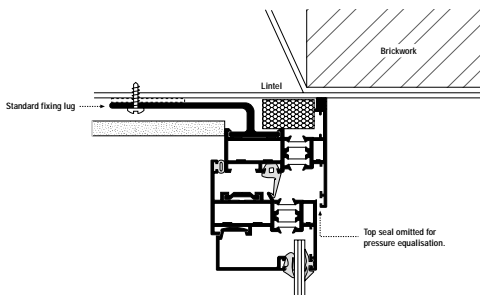
### Side Hung, Open-in Window

The side hung open-in window is a useful window, which can be used on air conditioned buildings, where the windows are only required to open for emergency ventilation or cleaning.

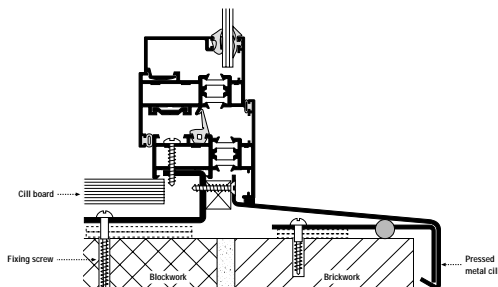
### Glazing

Glazing is from inside. Glass is set against co-extruded (PVC Nitrile) gaskets externally which are fitted to the frames and an extruded colour coded wedge is fitted internally against the beads. The corners of the gaskets are accurately mitred together and sealant is applied to ensure an effective joint. Glazing options accommodate from 4mm single glaze to 30mm DG units.

TYPICAL HEAD FIXING DETAIL



TYPICAL CILL FIXING DETAIL

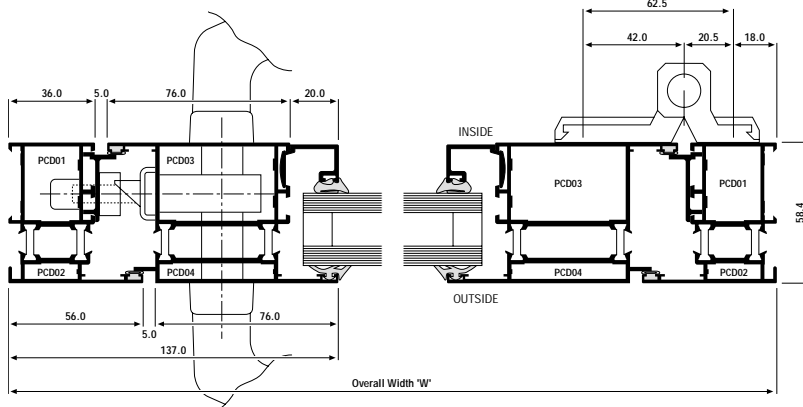
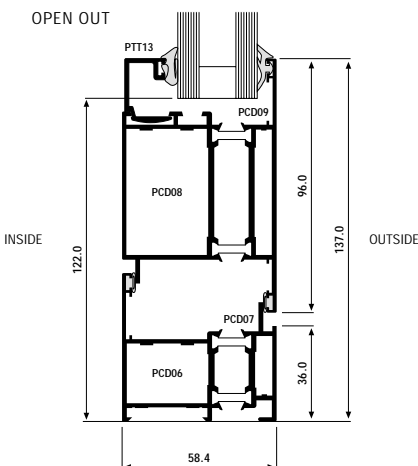
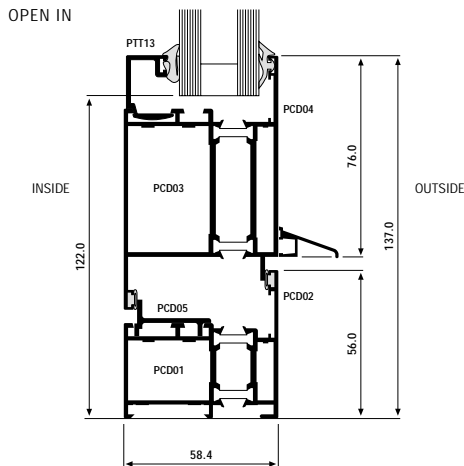




## System 18 Dual Colour Commercial Door

▲ Stakis Hotel, Sheffield

DOUBLE REBATED CILL TO DOORS FOR EXPOSED SITUATIONS (OR WHERE A HIGH LEVEL OF PERFORMANCE IS REQUIRED).



### Introduction

The basic suite of profiles comprises main and meeting stiles, top rail, mid rails, bottom rails and thresholds. To these can be added additional profiles to meet every possible application, all with the benefits of minimal fabrication. Glazing options accommodate single glazed through to 36mm glazing units and infill panels. The door and framing sections are all rebated and glazed from inside, thus enhancing the doors security. As with all Metal Technology systems the commercial door system has been manufactured to exacting standards giving the required strength necessary for its heavy usage but with economy, allowing many years of aesthetic trouble-free operation.

### Glazing

Glazing is from the inside. Glass is set against co-extruded (PVC Nitrile) gaskets externally which are fitted to the frames, and an extruded colour coded wedge is fitted internally against the beads. The corners of the gaskets are accurately mitred together and sealant is applied to ensure an effective joint.

Setting blocks and location pieces are fitted in accordance with BS6262 in order to ensure the doors are maintained square and rigid.

### Maximum Size Limits (Each Door Leaf)

Maximum Height	Maximum Width	Maximum Weight
3.0m	1.05m	90Kg

### Performance

Commercial doors have been designed for a wide range of applications. Where performance is critical (or above ground floor) consideration should be given to using fully framed doors with a double rebated cill section.

### Maintenance

As with all mechanical products, regular 'preventative maintenance' is necessary if trouble free operation is required and it is strongly recommended that such a programme is arranged either with a competent door maintenance company or with the maintenance staff of the building where the doors are installed. Items such as overhead closers, hinges, locks and weather-stripping need regular care to keep them functioning correctly and adjustment is especially necessary in the first few months when the doors are 'bedding in'.

### Prototyping

For customers who have not previously fabricated this system, Metal Technology recommend a prototype door be constructed before commencing production run, so that they may familiarise themselves with all aspects of fabrication.

**Design** the Central Focus



## Quality through commitment

### The Two Colour Finish Option

Within the Dual Colour Range the thermal break sections are constructed from two separate extrusions, which are joined together with a pair of polyamide thermal barriers. Since it is possible to join the extrusions together after painting, Metal Technology can offer the specifier the advantage of a section constructed from two pre-finished extrusions with the option of a different colour (or finish) inside and outside.

### Materials

Aluminium profiles are extruded from 6063T6, T5 or T4 aluminium alloy complying with the requirements of BS1474. Polyamide thermal barriers are produced from glass reinforced nylon sections designed to withstand temperatures in excess of 200°C. Glazing gaskets and weatherstrips are manufactured from co-extruded PVC Nitrile (colour coded to ensure the correct application) or from extruded neoprene.

### Finishes

The aluminium alloy sections can be provided in any of the following range of finishes:

1. Natural or colour anodised to BS1615 or BS3987
2. Liquid organic coated to BS4842
3. Powder organic coated to BS6496

### 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 mechanical crimping into the extruded crimping cleat. Metal Technology recommend the use of pneumatic crimpers for fabrication of the door system. Intermedial mullion and transom bars are square cut shaped and fixed securely to the frame by means of stainless steel screws driven into grooves in the sections. All frame joints are sealed during construction against entry of water. Extruded plastic weather strips and glazing gaskets are provided to resist the ingress of water. These are fitted into the sections prior to fabrication of the frames.

### Installation

Detailed installation instructions are provided which should be strictly followed. Where possible Metal Technology recommend the use of lug fixing. Fixings should be positioned 150mm from each corner and each mullion/transom and then at centres not exceeding 600mm. Where windows are used as replacement windows in dwellings, the requirements of BS8213:Pt.4:1990 must be considered.

### Mullions and Transoms

A variety of integral and loose mullions and transoms are available for sub-dividing the windows or coupling separate units into ribbons of glazing. Loading tables are included in the technical literature, which give details of the maximum spans that can be achieved with these members.

### Performance

**Air permeability** - BS6375:Pt.1:1983 test pressure 600 Pa class iv.  
**Water tightness** - BS6375: Pt.1:1983 test pressure 600 Pa  
**Wind resistance** - BS6375: Pt.1:1983 test pressure 2400 Pa  
These levels of performance should be sufficient for any location within the UK. However, should higher levels of performance be required for any reason Metal Technology's advice should be sought.

### Protection and Cleaning

The windows should be properly protected during transport to site. When fixing and glazing it is important to ensure that they are not damaged by scratching or the effects of alkali chemicals such as mortars or concrete residue. Care should also be taken to ensure windows are not misused on site once they have been fixed.

### 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.

### Product Range

#### Curtain Walling Systems

Roof Glazing  
Dual Colour Top Swing Window  
Dual Colour Tilt Turn Window  
Dual Colour Casement Window  
Dual Colour Commercial Doors

#### Thermal Architectural Subframe

Thermal Casement Window  
Thermal Pivot Window  
Thermal Tilt Turn Window  
Thermal Top Swing Window  
Thermal Vertical Sliding Window

#### Ground Floor Treatments

Commercial Entrance Doors  
Box and Bead System  
Patent Glazing System  
Secondary Glazing  
Residential and Patio Doors



### Metal Technology

Architectural Aluminium

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