

Uniclass	EPIC
L411	D11
+L413:P7114	+D13:X725
CI/SfB	
(31.4)+(31.5)	Xn6
9/11	

# System10

## SmartSash

## Specification Guide

Fenestration Solutions for Public Sector & Commercial Applications



A BRAND OF THE VEKA UK GROUP



# The first 21<sup>st</sup> Century PVC-U window system

## Introduction

SmartSash is a development of Halo's market leading System10 PVC-U windows and doors. System10 has been used to great success for over 25 years and is held in high regard by Local Authorities, construction professionals and homeowners alike.

SmartSash PVC-U windows and doors can be manufactured with a U-value as low as  $0.7\text{W/m}^2\text{K}$ . This remarkable performance is achieved using a standard 70mm outer frame depth and "off the shelf" glazing, hardware and other components.

SmartSash is undoubtedly one of the most significant developments in window design this century.

No other UK based PVC-U systems manufacturer is able to offer such exceptional thermal performance using standard components

No other European PVC-U systems manufacturer is able to offer an equivalent thermal performance using a standard 70mm outer frame.



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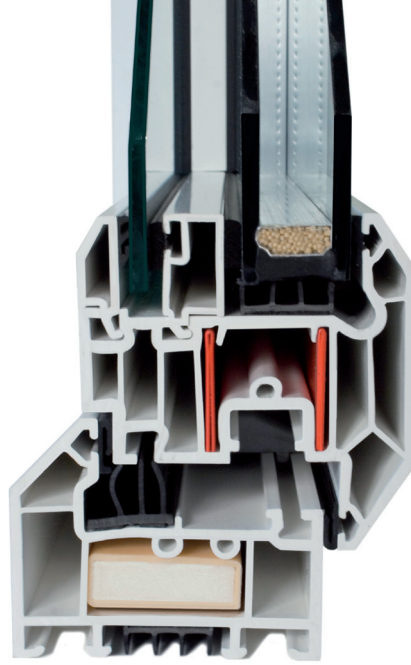
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## Sound reduction too!

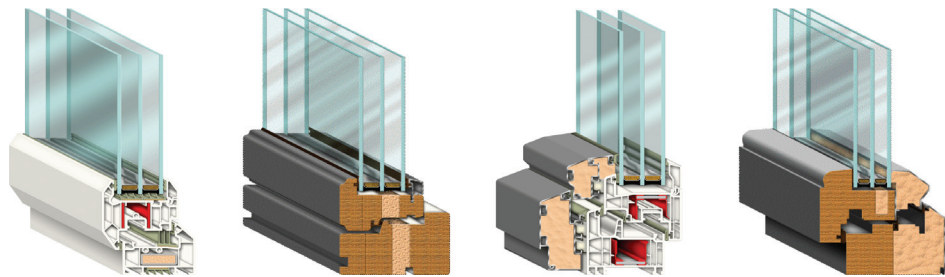
Along with the remarkable thermal insulation performance comes a commensurate reduction in sound transmission. Reductions of up to 49db can be achieved.

## The most cost effective

The table below compares the costs and performance of a number of window systems. It shows that SmartSash costs considerably less than other systems, and yet provides better all-round performance and design opportunities.



### COST EFFICIENCY FRAME COMPARISON



Frame Type	System10 PVC-U	Softwood	Aluminium/PVC-U	Aluminium/softwood
Av. frame depth	70mm	105mm	136mm	95mm
Glazing	44mm Triple Argon	44mm Triple Argon	44mm Triple Argon	36mm Triple Krypton
Av. frame U-value	0.73	0.73	0.74	0.66
Code for Sustainable Homes (level achieved)	6 Zero Carbon	6 Zero Carbon	6 Zero Carbon	6 Zero Carbon
Performance Price index*	100	186	189	189

\*The performance/price index is calculated by multiplying the price of a standard window by the U-value achieved by the system. The best result, i.e. the lowest answer, is then set to 100 and the other indices calculated accordingly.



# Exceptional performance – the result of exceptional design

For SmartSash to deliver such exceptional performance a number of patented design concepts have, for the first time, been incorporated into one window system.

They include:

- A unique system glazing that allows glazed units up to 48mm to be fitted
- Foam filled thermal inserts
- A six chamber sash profile that all but eliminates cold bridging
- Specially designed seals that prevent heat loss around glazed units, between the sash and the frame, and between the frame and the wall.

## Versatile Glazing options

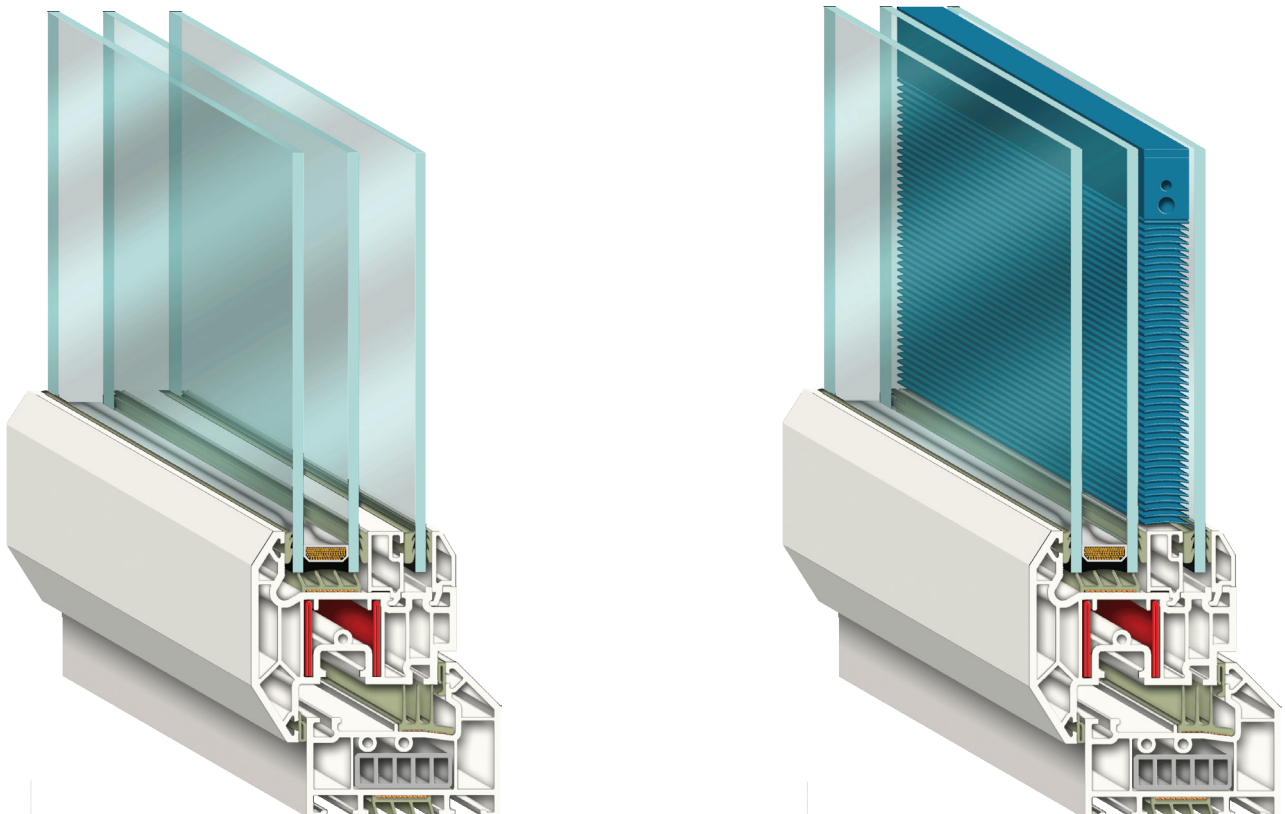
System10 SmartSash windows, fitted with a 44mm argon triple glazed units achieve a U- value of 0.7W/m<sup>2</sup>K. Where a higher U-value is acceptable there is a range of glazing options.

SmartSash's unique parting bead allows a 24mm double glazed sealed unit to be fitted in conjunction with a third, single pane. The benefits of this 2 + 1 configuration are:

- Excellent thermal performance, U values as low as 0.8W/m<sup>2</sup>K
- Extremely cost effective triple glazing at the Point of installation
- Cheaper and easier replacement of damaged glass or failed units - the cost of replacing failed sealed units is reduced by up to 50%.

## Blinds and security

The 2+1 feature means that internal blinds and the wiring for alarms and other security measures can be conveniently installed and easily maintained without having to replace entire units.



# Code for sustainable homes – meet Code level 6 now!

The Government stipulates that by 2016 (2013 for the social sector) all new homes will be zero carbon rated (Code level 6). To achieve that standard all windows have to have a U value of 0.7W/m<sup>2</sup>K or less. All doors have to have a U value of 0.8W/m<sup>2</sup>K or less. As can be seen, by using System10 SmartSash it is perfectly possible to achieve these very low U values now!

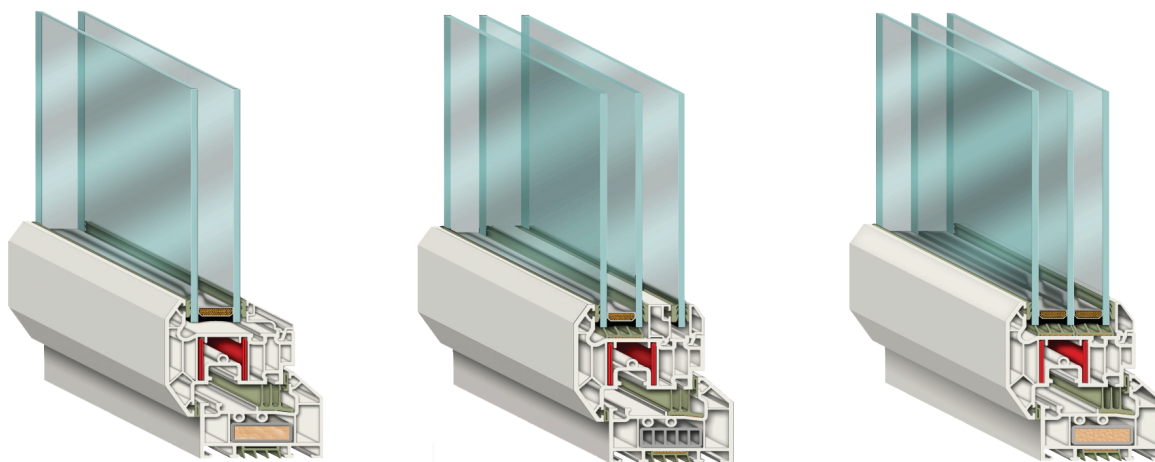
## Fit now for future compliance - cost effective thermal upgrades

SmartSash windows suit just about every budget, but should there be a requirement for the thermal performance to be upgraded at a later date, this can be achieved by simply replacing the sash only - not the whole frame.

Standard U-Value is 1.3 W/m<sup>2</sup>K and almost any value between 1.3 W/m<sup>2</sup>K and 0.7 W/m<sup>2</sup>K can be achieved simply by varying standard components.

## Extensive design options

SmartSash has been specifically designed to take advantage of the opportunities presented by a new generation of high performance hinges. Opening sashes up to 1500mm high and 2100mm wide can be achieved.



### FRAME STYLES AND RELATED SPECIFICATION

UNIT TYPE	28mm DOUBLE (4/20/4)	48mm DUAL (4/16/4-20-4)	48mm DUAL (4/16/4-20-4)	44mm TRIPLE (4/16/4/16/4)
EMISSIONITY	0.04	0.04+0.89	0.04+0.10	0.04+0.04
GAS FILLING	Argon	Argon+Air	Argon+Air	Argon+ Argon
FRAME U-VALUE	1.2	1.0	0.8	0.7
Code for Sustainable Homes (level achieved)	3&4	3&4	5	6 (Zero Carbon)
Performance Price index*	121	130	106	100

\*The performance/price index is calculated by multiplying the price of a standard window by the U-value achieved by the system. The best result, i.e. the lowest answer, is then set to 100 and the other indices calculated accordingly.



# Manufacture and distribution

The PVC-U profiles used to manufacture SmartSash windows are extruded under a quality assurance management system accredited to ISO9001:2000. The profiles meet or exceed the requirements of BS EN 12608:2003.

Halo is one of the largest PVC-U window extruders in the UK. Since 1980 we have been designing and supplying window profile to fabricators and installers in the UK and Ireland.

## The BRE's Green Guide gives PVC-U top marks.

PVC-U is now recognised as a material whose environmental credentials are as good as, if not better, than, most alternative window frame materials, including timber. The most recent edition of the BRE's Green Guide gives commercial PVC-U frames an A+ rating, the highest possible.

## Other products

VEKA and all its related companies manufacture and supply a wide range of energy efficient fenestration solutions. They are suitable for use in all sectors, for new build and refurbishment.









## Technical Information





# SmartSash Casement Windows

The System10 SmartSash open out casement is a high performance window which, because of its ingenious design, offers unbeatable thermal performance at a very competitive cost. It features bevelled sightlines and a 70mm front to back dimension. Opening sashes may be top hung or side hung.

## Maximum Sizes

### Double glazed

Side hung: 1000mm (w), 2100mm (h)

Top hung: 1500mm (w), 1800mm (h)

### Triple glazed

Side hung: 900mm (w), 1800mm (h)

Top hung: 1300mm (w), 1500mm (h)

## Glazing

System10 SmartSash is internally glazed and can accommodate glazing units from 28mm to 48mm

## U-values

System10 SmartSash casement window meets the current requirements of Building Regulations when fitted with an appropriately specified 28mm double glazed unit. U-Values as low as 0.7W/m<sup>2</sup>K can be achieved if the window is fitted with an appropriately specified 44mm triple glazed unit. This level of thermal insulation complies with Code level 6 of the Code for Sustainable Homes. For further information contact the Technical Department at Halo or visit our website.

The SmartSash casement window also achieves A ratings when assessed against the criteria of the Windows Energy Rating Scheme (WER).

## Sound Reduction

Reductions of up to 50db can be achieved.

## Standards

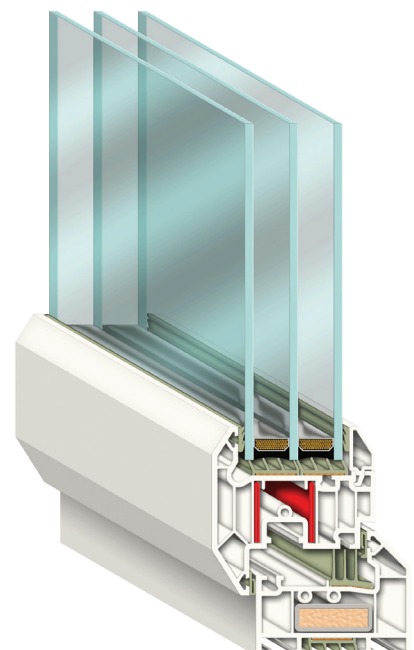
System10 SmartSash can be used to manufacture windows that conform to BS7412:2007 the standard that covers the fabrication of PVC-U windows and doors, and BS7950, the standard for enhanced security.

## Options

The System10 range includes decorative options including Georgian bar, decorative beads, arch head inserts and a full range of cills, trims and other ancillaries.

## Colours

Available as standard in white. Halo also offers a bespoke foiling service for a range of colours in textured and smooth finishes as well as several woodgrain options. Contact Halo for further information on availability of bespoke colours.



SmartSash Casement Window



Full specifications for System10 SmartSash Casement Windows can be downloaded from the NBS Plus web site at [www.thenbs.com](http://www.thenbs.com)



# SmartSash Tilt and Turn Windows

The System10 SmartSash Tilt and Turn window is a high performance window which, because of its ingenious design, offers unbeatable thermal performance at a very competitive cost. The hinge and locking system allows the window to be used as a side hung open in sash, or as a tilt in sash hinged at the bottom. It features bevelled sightlines and a 70mm front to back dimension.

## Maximum Sizes

### Double glazed

1500mm (w), 1500mm (h)

### Triple glazed

1500mm (w), 1500mm (h)

## Glazing

System10 SmartSash is internally glazed and can accommodate glazing units from 28mm to 48mm

## U-values

System10 SmartSash Tilt and Turn window meets the current requirements of Building Regulations when fitted with an appropriately specified 28mm double glazed unit. U-Values as low as 0.7W/m<sup>2</sup>K can be achieved if the window is fitted with an appropriately specified 44mm triple glazed unit. This level of thermal insulation complies with Code level 6 of the Code for Sustainable Homes. For further information contact the Technical Department at WHS Halo or visit our website.

This window also achieves A ratings when assessed against the criteria of the Windows Energy Rating Scheme (WER).

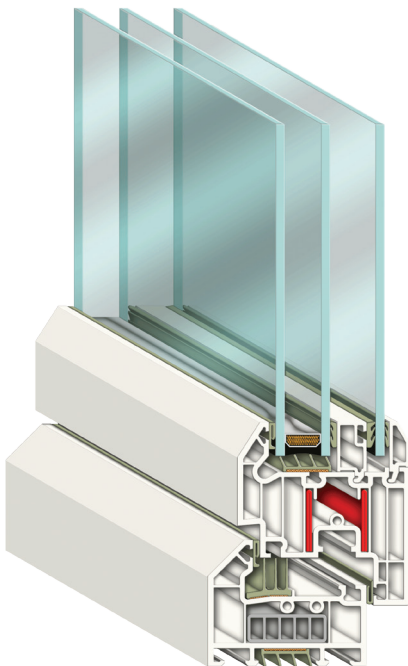
## Sound Reduction

Reductions of up to 50db can be achieved.

## Standards

System10 SmartSash can be used to manufacture windows that conform to BS7412:2007 the standard that covers the fabrication of PVC-U windows and doors, and BS7950, the standard for enhanced security.

The open in facility allows the outside pane to be cleaned in accordance with BS8213.



SmartSash Tilt & Turn Window

## Options

The System10 range includes decorative options including Georgian bar, decorative beads, arch head inserts and a full range of cills, trims and other ancillaries.

## Colours

Available as standard in white. Halo also offers a bespoke foiling service for a range of colours in textured and smooth finishes as well as several woodgrain options. Contact Halo for further information on availability of bespoke colours.

Full specifications for System10 SmartSash Tilt & Turn Windows can be downloaded from the NBS Plus web site at [www.thenbs.com](http://www.thenbs.com)



# SmartSash Residential Doors

The System10 SmartSash Residential Door is a high performance door which, because of its ingenious design, offers unbeatable thermal performance at a very competitive cost. It features bevelled sightlines and a 70mm front to back dimension.

## Maximum Sizes

### Double glazed

Double glazed 1150mm (w) x 2200mm (h)

### Triple glazed

Triple glazed 1150mm (w) x 2200mm (h)

## Glazing

System10 SmartSash is internally glazed and can accommodate glazing units and door panels from 28mm to 48mm

## U-values

System10 SmartSash residential door meets the current requirements of Building Regulations when fitted with appropriately specified 28mm double glazed units and/or door panels. U-Values as low as 0.8W/m<sup>2</sup>K can be achieved if the door is fitted with an appropriately specified 44mm triple glazed unit and/or door panels. This level of thermal insulation complies with Code level 6 of the Code for Sustainable Homes. For further information contact the Technical Department at WHS Halo or visit our website.

## Sound Reduction

Reductions of up to 50db can be achieved.

## Standards

System10 SmartSash can be used to manufacture windows that conform to BS7412:2007 and PAS23 and PAS24, the standards that cover weather tightness and enhanced security.

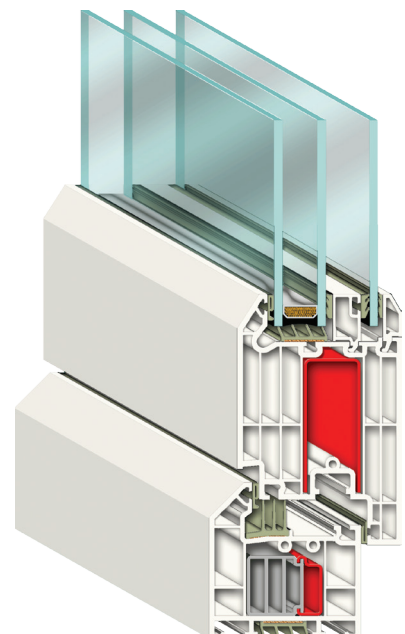
The open in facility allows the outside pane to be cleaned in accordance with BS8213.

## Options

The System10 range includes decorative options including Georgian bar, decorative beads, arch head inserts and a full range of cills, trims and other ancillaries.

## Colours

Available as standard in white. Halo also offers a bespoke foiling service for a range of colours in textured and smooth finishes as well as several woodgrain options. Contact Halo for further information on availability of bespoke colours.



SmartSash Residential Door



Full specifications for System10 SmartSash Residential Doors can be downloaded from the NBS Plus web site at [www.thenbs.com](http://www.thenbs.com)



# Coloured Foils

An increasing number of specifiers and developers are seeking an alternative approach to fenestration aesthetics by choosing coloured frames. This has long been an option with steel/aluminium frames, but now a similar choice of colour finish is available through System10 PVC-U windows.

The high quality foils carry extensive guarantees and are well proven for high performance in all types of weather conditions including bright sunlight and high rainfall without any colour deterioration or fade.

For contemporary buildings many architects are now adopting a black/grey palette as well as using the more established blue/red/green colourways.

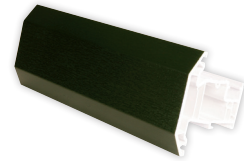
For both refurbishment and new build projects, the choice of a distinctive colour for the window frame exteriors can have an immediate impact on the building's presence.

Coloured foils can be added to the full range of System10 SmartSash products.

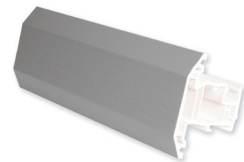
## Colour Options



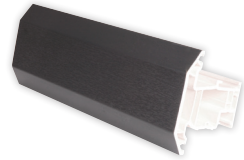
*Ice Cream RAL9001*



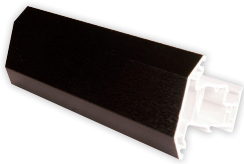
*Fir Green RAL6001*



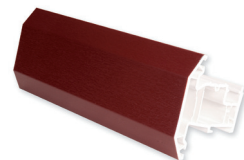
*Hazy Grey RAL7001*



*Gale Grey RAL7016*



*Beck Brown RAL8022*



*Rioja Red RAL3005*

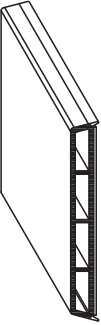


*Midnight Blue RAL5011*




# Ancillary Items


Georgian bar  
Volker Brinkmeier Part No. 111-0076-010-001



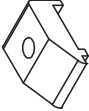
1g Silica gel sachet  
H01829



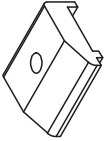
Reinforcement clamping moulding  
M00275



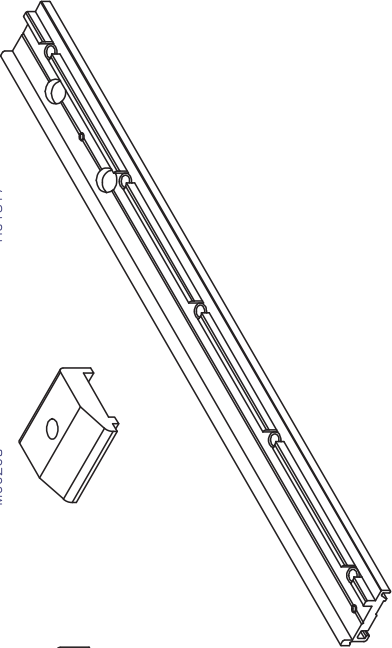
Caseament rider block  
M00276



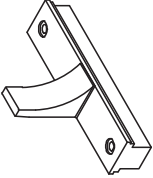
Tilt and Turn rider block  
M00208



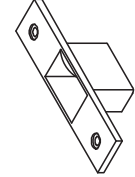
12" DGS Mega hinge packer  
H01817



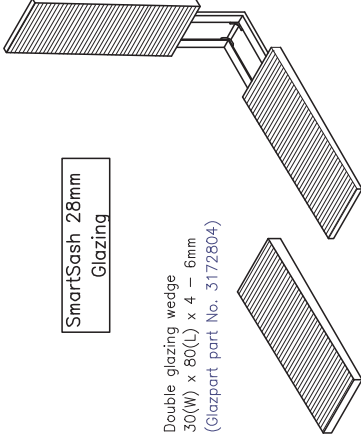
Roto security claw  
(Roto part numbers – 255 445 claw, 255 447 reciever)



Roto security claw packer  
M00280

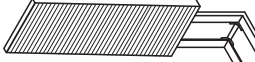


SmartSash 28mm Glazing

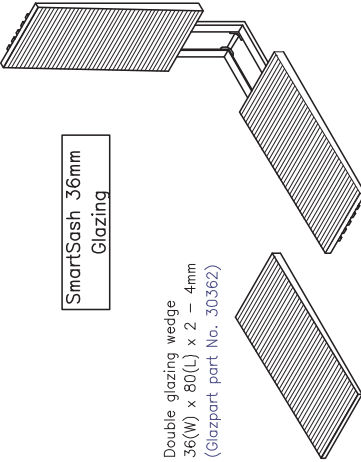


Double glazing wedge  
30(W) x 80(L) x 4 – 6mm  
(Glazpart part No. 3172804)

Corner wedge  
(Glazpart part No. 3172804)

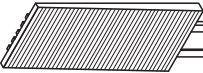


SmartSash 36mm Glazing

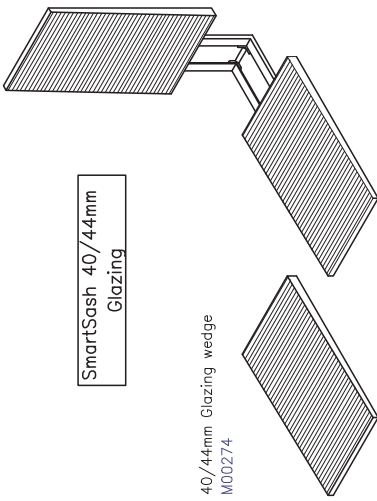


Double glazing wedge  
36(W) x 80(L) x 2 – 4mm  
(Glazpart part No. 30362)

Corner wedge  
(Glazpart part No. 3173415)

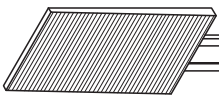


SmartSash 40/44mm Glazing

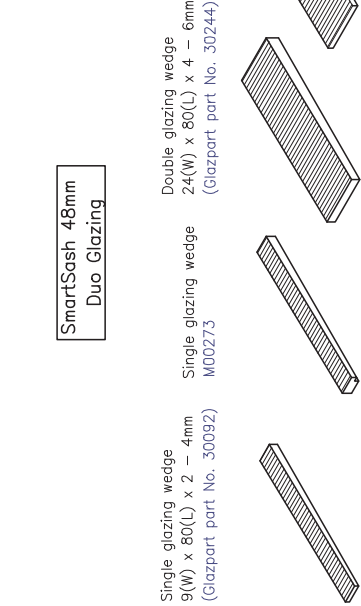


40/44mm Glazing wedge  
M00274

40/44mm Corner Flexi  
M00281



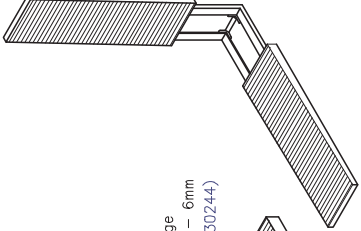
SmartSash 48mm Duo Glazing



Single glazing wedge  
9(W) x 80(L) x 2 – 4mm  
(Glazpart part No. 30092)

Double glazing wedge  
24(W) x 80(L) x 4 – 6mm  
(Glazpart part No. 30244)

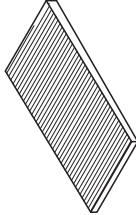
Fixed light 28/36/40mm Glazing



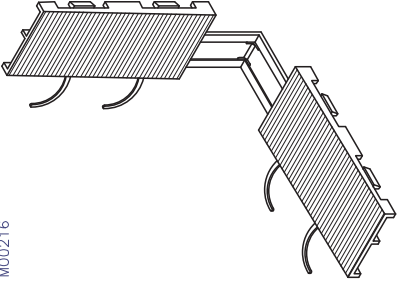
Double glazing wedge  
28(W) x 80(L) x 3 – 5mm  
(Glazpart part No. 30282)

Double glazing wedge  
35(W) x 80(L) x 3 – 5mm  
(Glazpart part No. 30352)

Double glazing wedge 40mm  
M00287



28/36/40mm Corner flexi (fixed lights)  
M00216



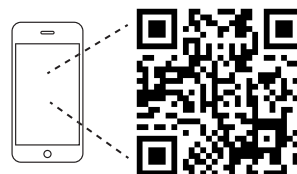


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