# Our BLACK & WHITE guide

ENGLAND

WE CARE
WE ACT

**On the 15 June 2022 some big changes to the thermal efficiency requirements of buildings – in particular new build dwellings came into effect.**

The information provided in this manual should be treated as guidance only. VEKA plc cannot control how the information is interpreted and therefore cannot be held responsible for any failure. Regulations regarding the health and safety of operatives along with relevant building regulations should be strictly adhered to. VEKA plc therefore cannot be held responsible for any failure to comply with them. This statement does not affect the fabricators statutory rights.

Do not scale from drawings in this manual. The drawings shown are visual representations only. VEKA plc has the right to alter the designs, specification and descriptions without prior notice as part or our policy of continuous development and improvement.



All calculations contained within this document are completed in accordance with BS EN ISO 10077-2; Thermal performance of windows, doors and shutters - calculation of thermal transmittance.

All calculations are processed via WinIso ®[Version 2.7.8] , using Method Radiosity as per the standard listed above.

Note:
The use of steel reinforcement within the sash and mullion of the profiles is advised when using dark coloured foils, and so to cover this, calculations are performed on the basis the window will be fully reinforced, including the outer frame, where required.

**Following further changes to the calculation methods within the building regulations, our Black & White Guide has received amendments to provide further options and flexibility to our customers.**

Under the new regulations, there are more methods to calculate the values required to meet the notional U-Values of 1.2 W/m2K for windows going into new homes. For refurbishments in existing buildings, a U-Value of 1.4 W/m2K is required.

What are 'Notional', 'Actual' and 'Limiting' Values?

When designing a new dwelling the specifier has to consider the whole house energy demands of the building and these are set by having specific parameters for the various products in a building envelope, these are called the 'notional' values.

In England, windows on a new dwelling have a 'notional' value of 1.2, doors which are obscure or part glazed have a value of 1.0, walls are 0.18 and roofs are 0.11.

The specifier creates a 'notional' building, almost like a digital shadow of the building they intend to build, this notional building is the exact size, shape and orientation as the actual building.

Notional values are added and a target is set for the energy requirements specified by Government. They will then do the same calculation with the actual values of the products they intend using, and if the resulting calculation is equal to or less than the Government target, the building will pass. Once built they have to do this again to prove that any changes in the materials used on site have not affected the energy performance of the building.

As the values are often area weighted, meaning a higher value on one product can be offset by a lower value on another, this provides more flexibility for the specifier. However, the Government do limit the choice by setting values that are the worse performance, these are called the limiting values.

In a nutshell; for a new dwelling, the window has a Government set value for the notional building but you can use a lower value in the actual building as long as something else makes up the deficit.

# Calculation Methods
# – ENGLAND –

## WINDOWS

### Option 1
Calculated using the actual size and configuration of the window.

### Option 2
Calculated using a standard window size of 1.23m wide (±25%) x 1.48m high (-25%), in the actual configuration of the window

### Option 3
Calculated using a standard window size of 1.23m wide (±25%) x 1.48m high (-25%), in one of the following configurations:

i. For a casement window, a central vertical divider with one opening light and one fixed light.
ii. For a vertical sliding sash window, a central horizontal divider with two opening lights.
iii. For a roof window, no divider.

### Option 4
Measured using the hot-box method as set out in BS EN ISO 12567-1 for windows, and BS EN ISO 12567-2 for roof windows (hot-box test facilities are not currently available in GB).

## DOORS

### Option 1
Calculated using the actual size and configuration of the door.

### Option 2
Calculated using one of the following standard sizes:

i. 1.23m wide (±25%) x 2.18m (± 25%) high, for doors ≤3.6m²
ii. 2.00m wide (±25%) x 2.18m (±25%) high, for doors >3.6m²

### Option 3
Measured using the hot-box method as set out in BS EN ISO 12567-1 (hot-box test facilities are not currently available in GB).

IMPORTANT NOTE:
When a single U-Value is calculated for a product range of doors, the configuration of the door chosen for the calculation should be the worst performing in the product range.

# HALO System 10 Casement
## Whole Window U-Value: 1.2 W/m2K

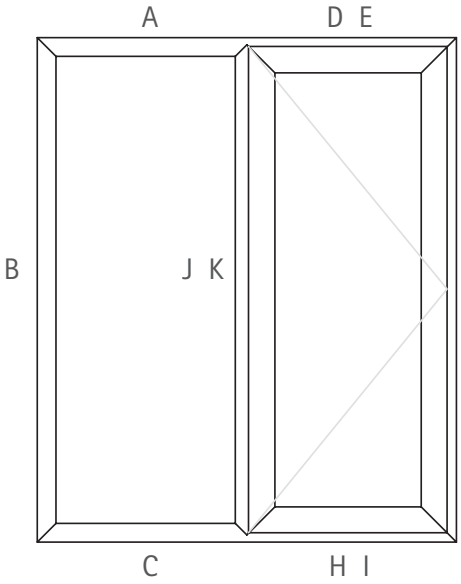
### Configuration:

| | |
|---|---|
| 56mm Outer Frame | 701501 |
| Thermal Insert | 709331 |
| 70mm Z Transom | 702506 |
| Steel Box | 713187 |
| 75mm Internally Beaded Sash | 703508 |
| Steel P Section | 713182 |
| 28mm Glazing Bead | 707429 |

### Glazing:

| | |
|---|---|
| Thickness | 28mm (4/20/4) |
| Gas Cavity | Argon Filled (90%) |
| Centre Pane U-Value | 1.1 W/m2k |
| Pane 1 | Standard Float (e.g. Pilkington Optifloat) |
| Pane 2 | Coated 0.01 (e.g. Pilkington Optitherm S1+) |
| Spacer | Swisspacer Ultimate |
| Sealant | Butyl - 3mm |

Calculation based on Option 3: 1230mm wide (±25%) x 1480mm (-25%) high in fixed next to opener configuration

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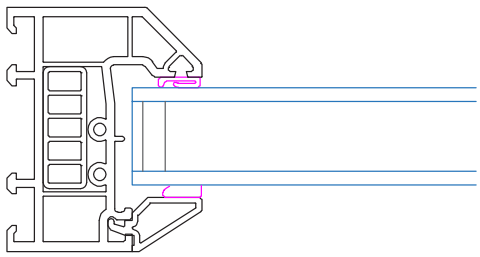

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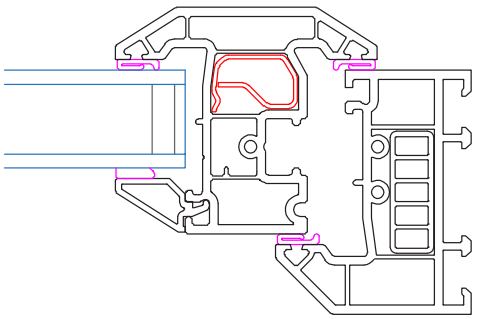

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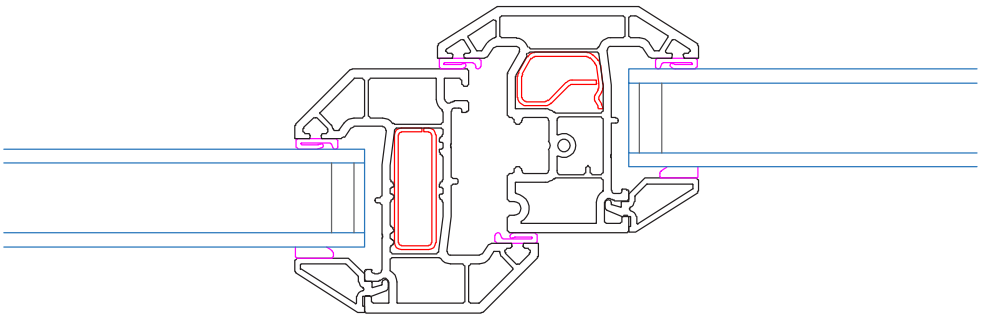


# HALO System 10 Tilt & Turn
## Whole Window U-Value: 1.2 W/m2K

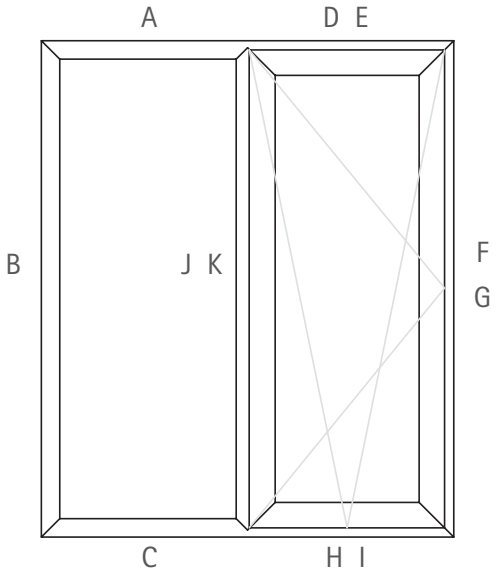
### Configuration:

| | |
|---|---|
| 56mm Outer Frame | 701501 |
| Thermal Insert | 709331 |
| 70mm T Transom | 702503 |
| Steel Box | 713187 |
| Tilt & Turn Sash | 703509 |
| Steel L Section | 713161 |
| 28mm Glazing Bead | 707429 |

### Glazing:

| | |
|---|---|
| Thickness | 28mm (4/20/4) |
| Gas Cavity | Argon Filled (90%) |
| Centre Pane U-Value | 1.1 W/m2k |
| Pane 1 | Standard Float (e.g. Pilkington Optifloat) |
| Pane 2 | Coated 0.01 (e.g. Pilkington Optitherm S1+) |
| Spacer | Swisspacer Ultimate |
| Sealant | Butyl - 3mm |

Calculation based on Option 3: 1230mm wide (±25%) x 1480mm (-25%) high in fixed next to opener configuration

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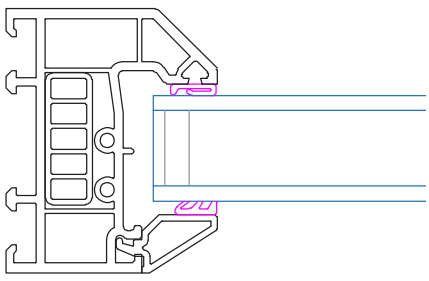

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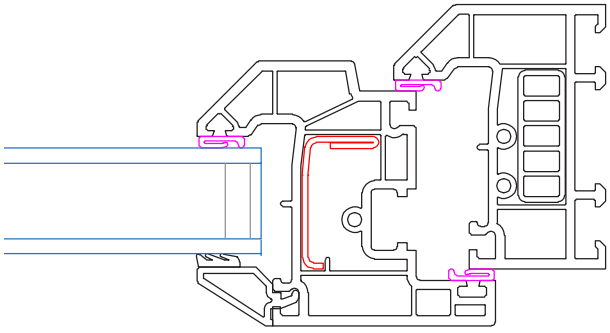

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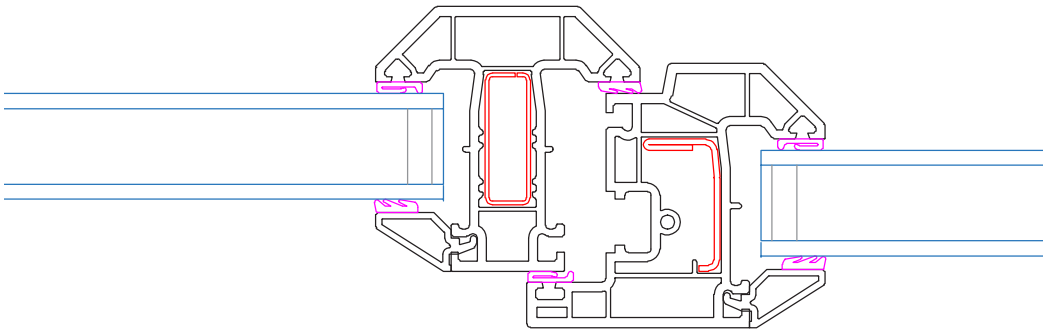


# HALO System 10 FlushSash

## Whole Window U-Value: 1.2 W/m2K

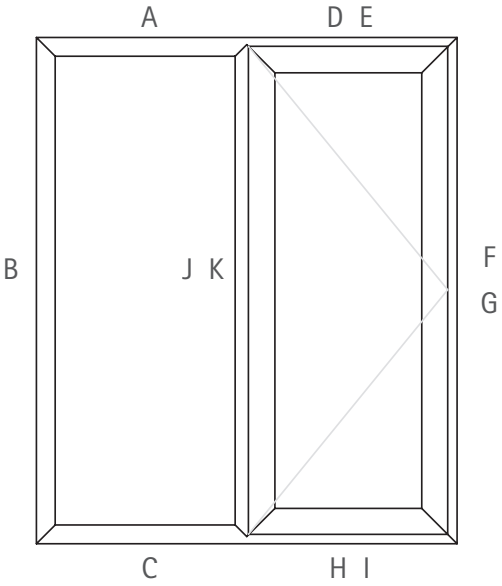
### Configuration:

| | |
|---|---|
| 56mm Outer Frame | 701501 |
| 28mm Glazing Bead | 707429 |
| Thermal Insert | 709331 |
| 70mm Z Transom | 702506 |
| Steel Box | 713187 |
| Flush Sash | 703810 |
| Steel L Section | 713226 |
| 28mm Glazing Bead | 707427 |

### Glazing:

| | |
|---|---|
| Thickness | 28mm (4/20/4) |
| Gas Cavity | Argon Filled (90%) |
| Centre Pane U-Value | 1.1 W/m2k |
| Pane 1 | Standard Float (e.g. Pilkington Optifloat) |
| Pane 2 | Coated 0.01 (e.g. Pilkington Optitherm S1+) |
| Spacer | Swisspacer Ultimate |
| Sealant | Butyl - 3mm |

Calculation based on Option 3: 1230mm wide (±25%) x 1480mm (-25%) high in fixed next to opener configuration

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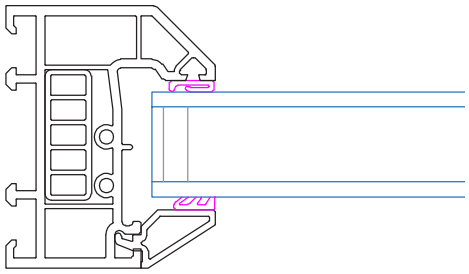

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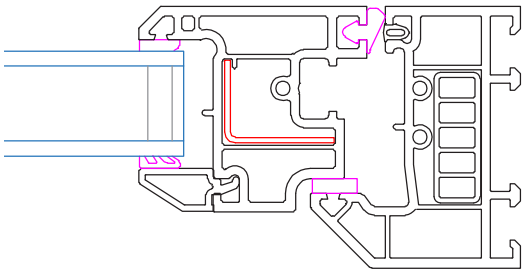

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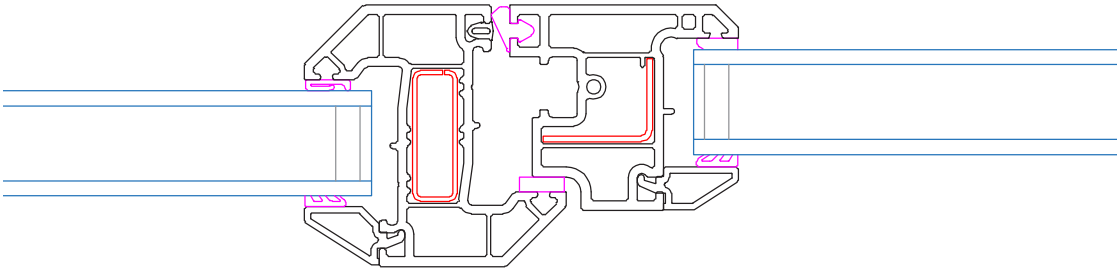


# HALO Rustique Casement
## Whole Window U-Value: 1.2 W/m2K

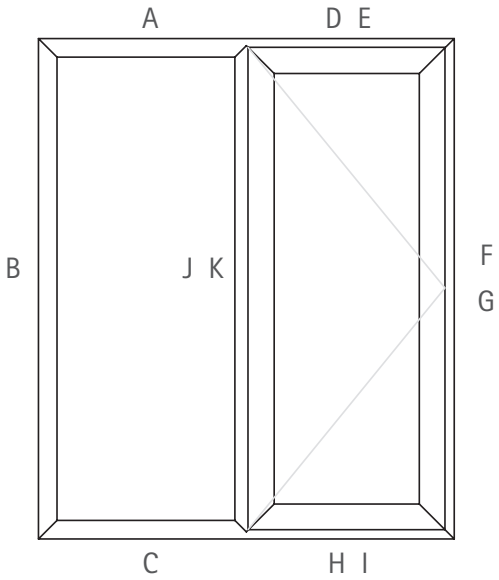
### Configuration:

| | |
|---|---|
| 56mm Outer Frame | 701531 |
| Thermal Insert | 709331 |
| 70mm Z Transom | 702536 |
| Steel Box | 713187 |
| 76mm Casement Sash | 703538 |
| Steel P Section | 713152 |
| 28mm Glazing Bead | 707431 |

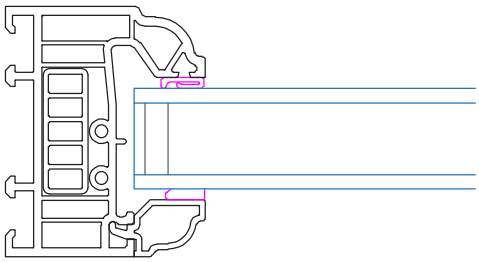
### Glazing:

| | |
|---|---|
| Thickness | 28mm (4/20/4) |
| Gas Cavity | Argon Filled (90%) |
| Centre Pane U-Value | 1.1 W/m2k |
| Pane 1 | Standard Float (e.g. Pilkington Optifloat) |
| Pane 2 | Coated 0.01 (e.g. Pilkington Optitherm S1+) |
| Spacer | Swisspacer Ultimate |
| Sealant | Butyl - 3mm |

Calculation based on Option 3: 1230mm wide (±25%) x 1480mm (-25%) high in fixed next to opener configuration




### Sections A B C



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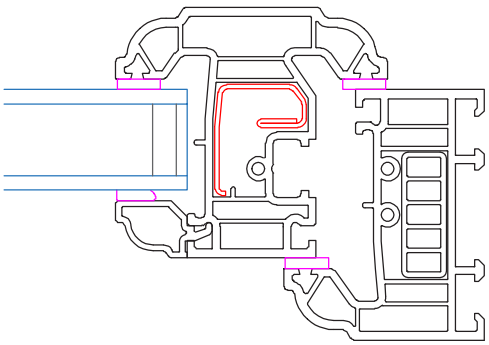

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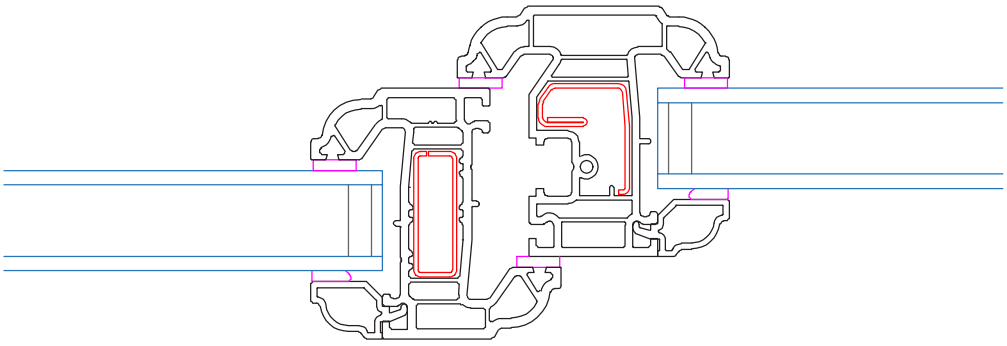


# HALO Rustique Tilt & Turn
## Whole Window U-Value: 1.2 W/m2K

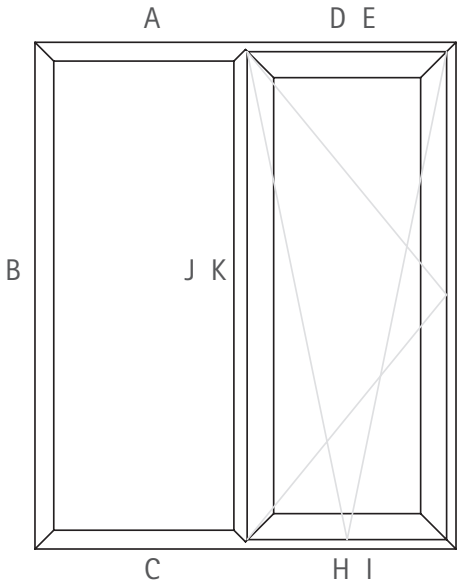
### Configuration:

| | |
|---|---|
| 56mm Outer Frame | 701531 |
| Thermal Insert | 709331 |
| 70mm T Transom | 702533 |
| Steel Box | 713187 |
| Tilt & Turn Sash | 703539 |
| Steel L Section | 713161 |
| 24mm Glazing Bead | 707431 |

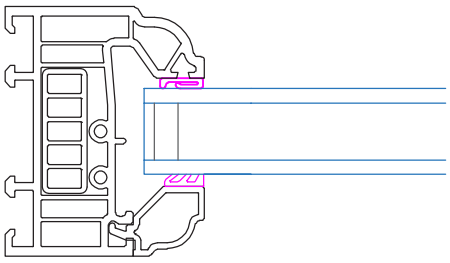
### Glazing:

| | |
|---|---|
| Thickness | 28mm (4/20/4) |
| Gas Cavity | Argon Filled (90%) |
| Centre Pane U-Value | 1.1 W/m2k |
| Pane 1 | Standard Float (e.g. Pilkington Optifloat) |
| Pane 2 | Coated 0.01 (e.g. Pilkington Optitherm S1+) |
| Spacer | Swisspacer Ultimate |
| Sealant | Butyl - 3mm |

Calculation based on Option 3: 1230mm wide (±25%) x 1480mm (-25%) high in fixed next to opener configuration




### Sections A B C



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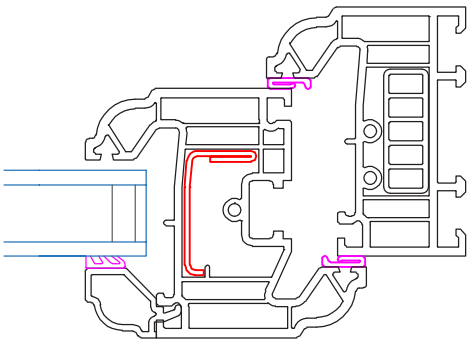

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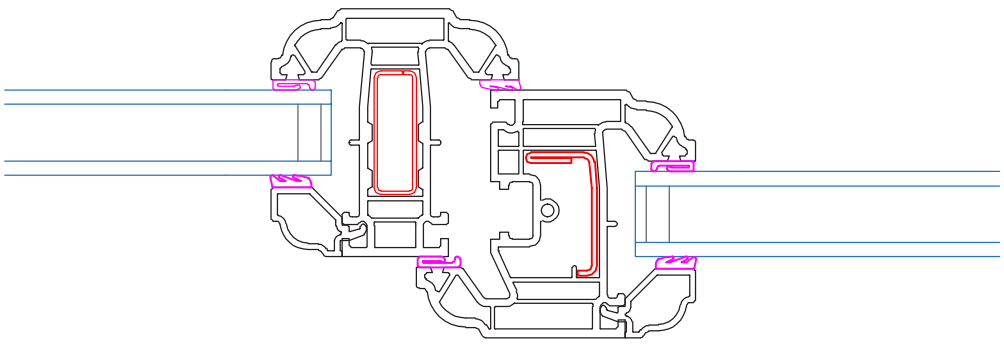


# HALO Rustique FlushSash
## Whole Window U-Value: 1.2 W/m2K

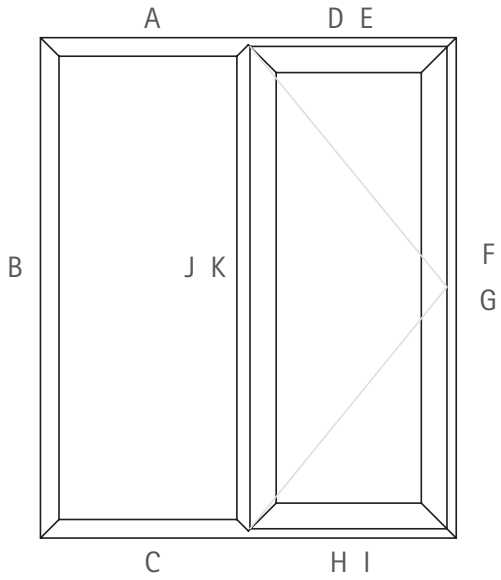
### Configuration:

| | |
|---|---|
| 56mm Outer Frame | 701531 |
| Thermal Insert | 709331 |
| 28mm Glazing Bead | 707431 |
| 70mm Z Transom | 702536 |
| Steel Box | 713187 |
| Flush Sash | 703810 |
| Steel L Section | 713226 |
| 28mm Glazing Bead | 707432 |

### Glazing:

| | |
|---|---|
| Thickness | 28mm (4/20/4) |
| Gas Cavity | Argon Filled (90%) |
| Centre Pane U-Value | 1.1 W/m2k |
| Pane 1 | Standard Float (e.g. Pilkington Optifloat) |
| Pane 2 | Coated 0.01 (e.g. Pilkington Optitherm S1+) |
| Spacer | Swisspacer Ultimate |
| Sealant | Butyl - 3mm |

Calculation based on Option 3: 1230mm wide (±25%) x 1480mm (-25%) high in fixed next to opener configuration

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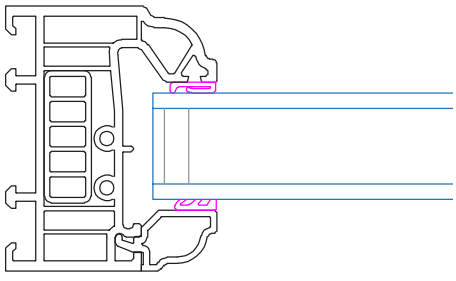

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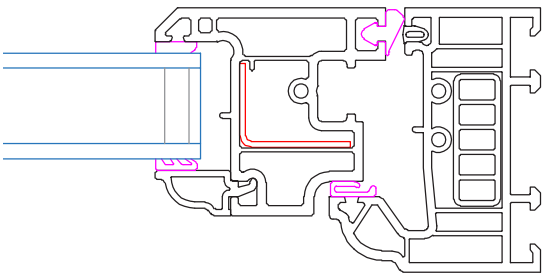

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