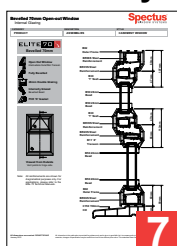




Technical Guide

1. Product

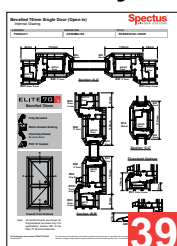
Window Styles



7

- Casement Window - Page 6
- Tilt & Turn Window - Page 21
- Fully Reversible - Page 31
- Vertical Slider - Page 35

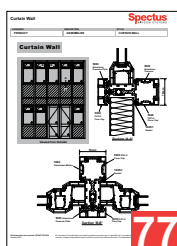
Door Styles



39

- Residential Door - Page 38
- French Door - Page 42
- Doors with Side Screens - Page 46
- Emergency Exit Doors - Page 52
- Bi-Folding Door - Page 56
- Composite Door - Page 67
- Ride Over Patio Door - Page 70

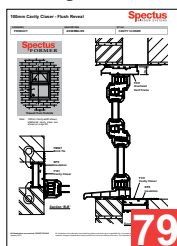
Curtain Wall



77

- Curtain Wall - Page 76

Cavity Closer



79

- Cavity Closer - Page 78

2. Product Characteristics

Performance



86

Building Regulations



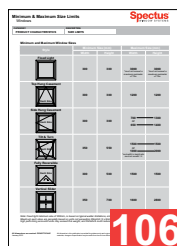
99

Glass



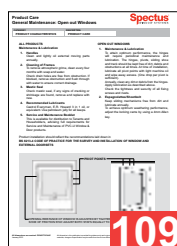
101

Maximum Size Limits



106

Product Care



109

3. Reference

Product Charts



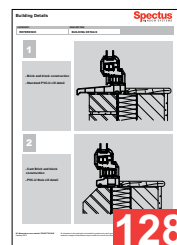
115

General Information



126

Glossary of Standards



128

Building Details

1. Product

Window Styles

Casement Window	6
- Elite 70 (70mm Bevelled)	7-11
- Elite 70 (70mm Ovolo)	12-16
- Elite 63 (63mm Chamfered)	17-20
Tilt & Turn Window	21
- Elite 70 (70mm Bevelled)	22-24
- Elite 70 (70mm Ovolo)	25-27
- Elite 63 (63mm Chamfered)	28-30
Fully Reversible Window	31
- Elite 70 (70mm Bevelled)	32-34
Vertical Sliding Window	35
- Vertical Slider Ovolo	36-37

Door Styles

Residential Door	38
- Elite 70 (70mm Bevelled)	39
- Elite 70 (70mm Ovolo)	40
- Elite 63 (63mm Chamfered)	41
French Door	42
- Elite 70 (70mm Bevelled)	43
- Elite 70 (70mm Ovolo)	44
- Elite 63 (63mm Chamfered)	45
Doors with Side Screens	46
- Elite 70 Side Screens	47-49
- Elite 63 Side Screens	50-51
Emergency Exit Doors	52
- Elite 70 (70mm Bevelled)	53
- Elite 70 (70mm Ovolo)	54
- Elite 63 (63mm Chamfered)	55
Bi-Folding Door	56
- Elite 70 (70mm Bevelled)	57-58
- Elite 70 (70mm Ovolo)	59-60
- Elite 63 (63mm Chamfered)	61-64
- Elite 63 & 70 Door Configurations	65-66

Door Styles Continued

Composite Door	67
- Elite 70	68-69
Ride Over Patio Door	70
- Vertical Sections	71-72
- 2 Pane Horizontal Section	73
- 3 Pane Horizontal Section	74
- 4 Pane Horizontal Section	75

Curtain Wall

Curtain Wall	76
- Curtain Wall with Elite 70	77

Cavity Closer

Cavity Closer	78
- Flush Reveal	79
- Check Reveal	80
- Outside Window Fit	81
- Inside Window Fit	82
- Additional Cavity Widths	83

2. Product Characteristics

Performance

Weather Performance	86
Load comparison Chart	87
PVC-U & Fire	88
Summary of PVC Combustion Properties	89
Condensation Cause & Effect	90
Condensation Combatting	91
Condensation	92
Guide to Sound Reduction	93-94
Thermal Performance	95-97

2. Product Characteristics

Building Regulations

Relevant Building Regulations	99
-------------------------------	----

Glass

Maximum Glass Sizes	101
Safety Glass & Safe Breakage	102
Impact Performance & Breakage Characteristics	103
Manifestation of Glazing	104

Maximum Size Limits

Maximum Window Sizes	106
Maximum Door Sizes	107

Product Care

General Maintenance - Open Out Windows	109
General Maintenance - Tilt & Turn Windows	110
General Maintenance - Reversible Windows	111
General Maintenance - Residential Doors	112

3. Reference

Product Charts

Elite 70 - Main Profiles	115
Elite 70 - Reinforcement & Ancillaries	116
Elite 70 - Fully Reversible	117
Elite 63 - Main Profiles	118
Elite 63 - Reinforcement & Ancillaries	119
Vertical Slider	120
Ride Over Patio	121
Cavity Closer	122
SK200 - Curtain Wall	123
Cills	124

General Information

Glossary of Standards	126-127
Building Details	128-131

Window Styles
Door Styles
Curtain Walling
Cavity Closer

Window Styles Casement Windows



ELITE 70 

ELITE 63 

Bevelled 70mm Open-out Window

Internal Glazing

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CASEMENT WINDOW

ELITE 70

Bevelled 70mm

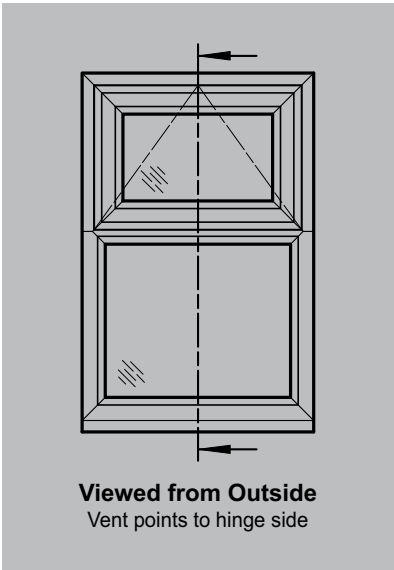

Open Out Window
 Intermediate Outer/Slim Transom


Fully Bevelled

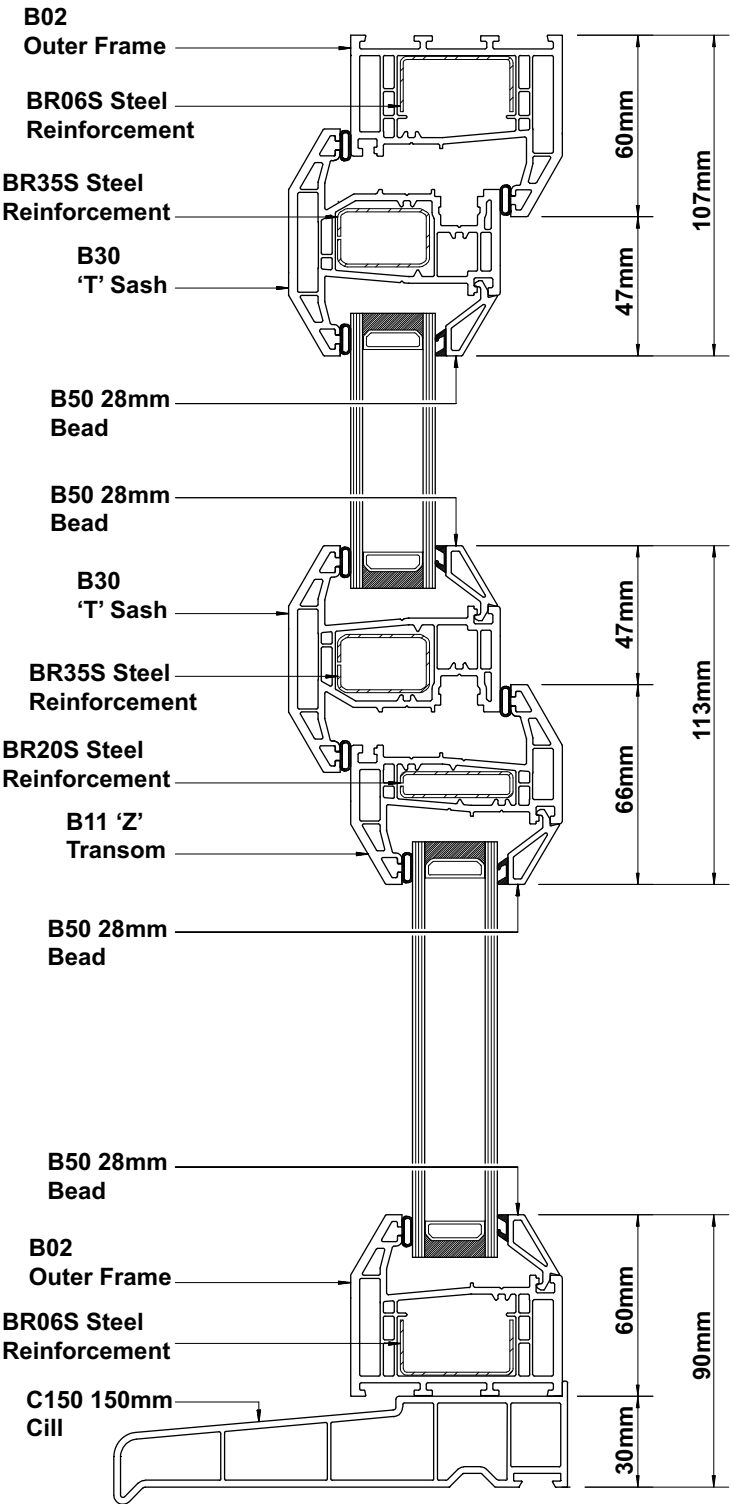

28mm Double Glazing


Internally Glazed
 Bevelled Bead


PCE 'D' Gasket



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



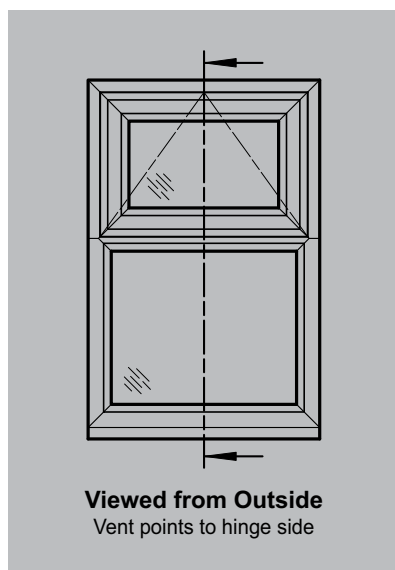
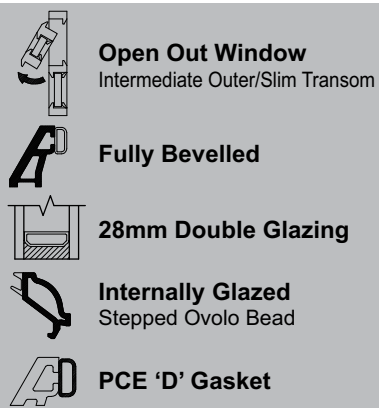
Bevelled 70mm Open-out Window

Internal Glazing

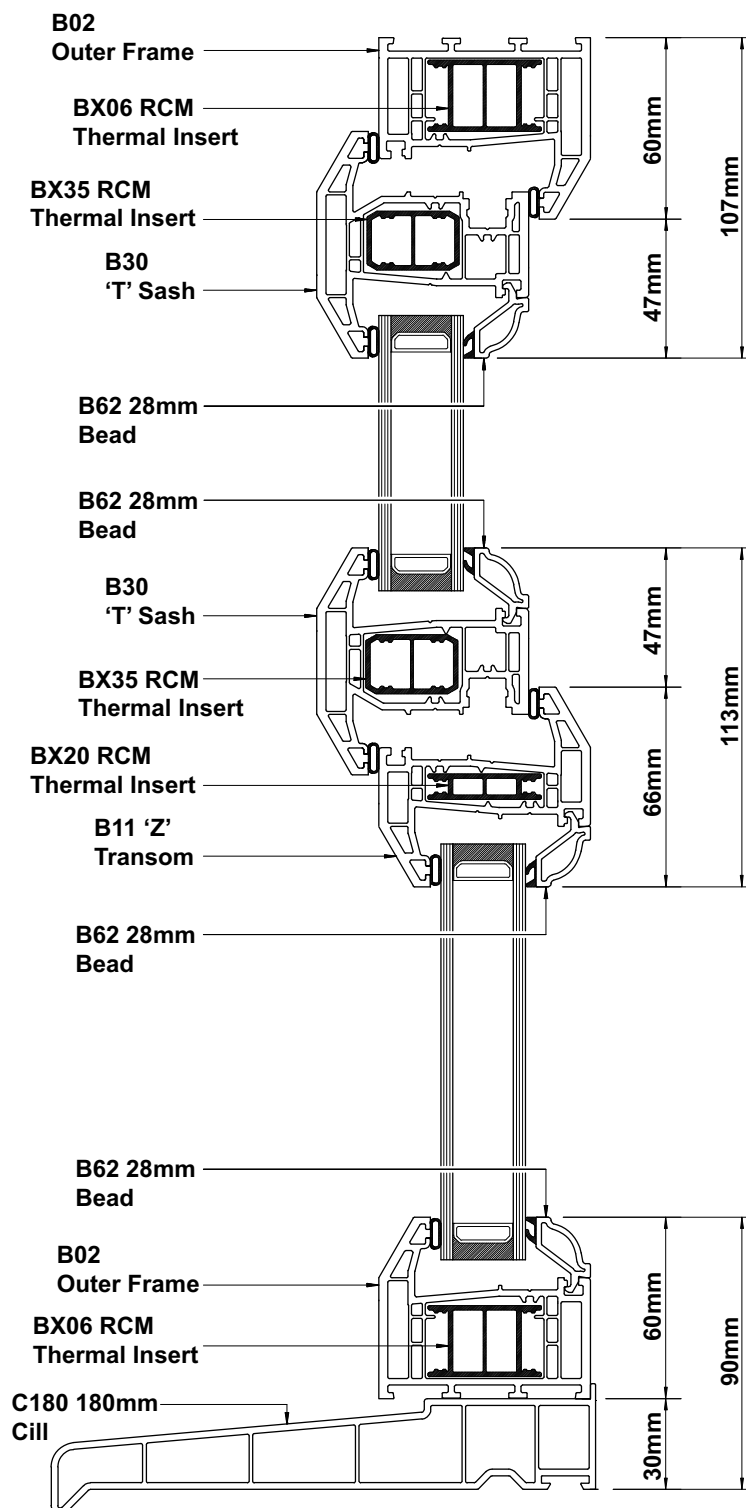
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CASEMENT WINDOW

ELITE 70

Bevelled 70mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



Bevelled 70mm Open-out Window

Internal Glazing

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CASEMENT WINDOW

ELITE 70

Bevelled 70mm

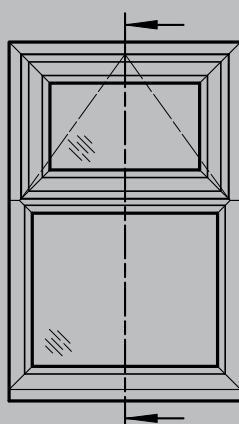
 **Open Out Window**
Slim Outer / Slim Transom

 **Fully Bevelled**

 **40mm Triple Glazing**

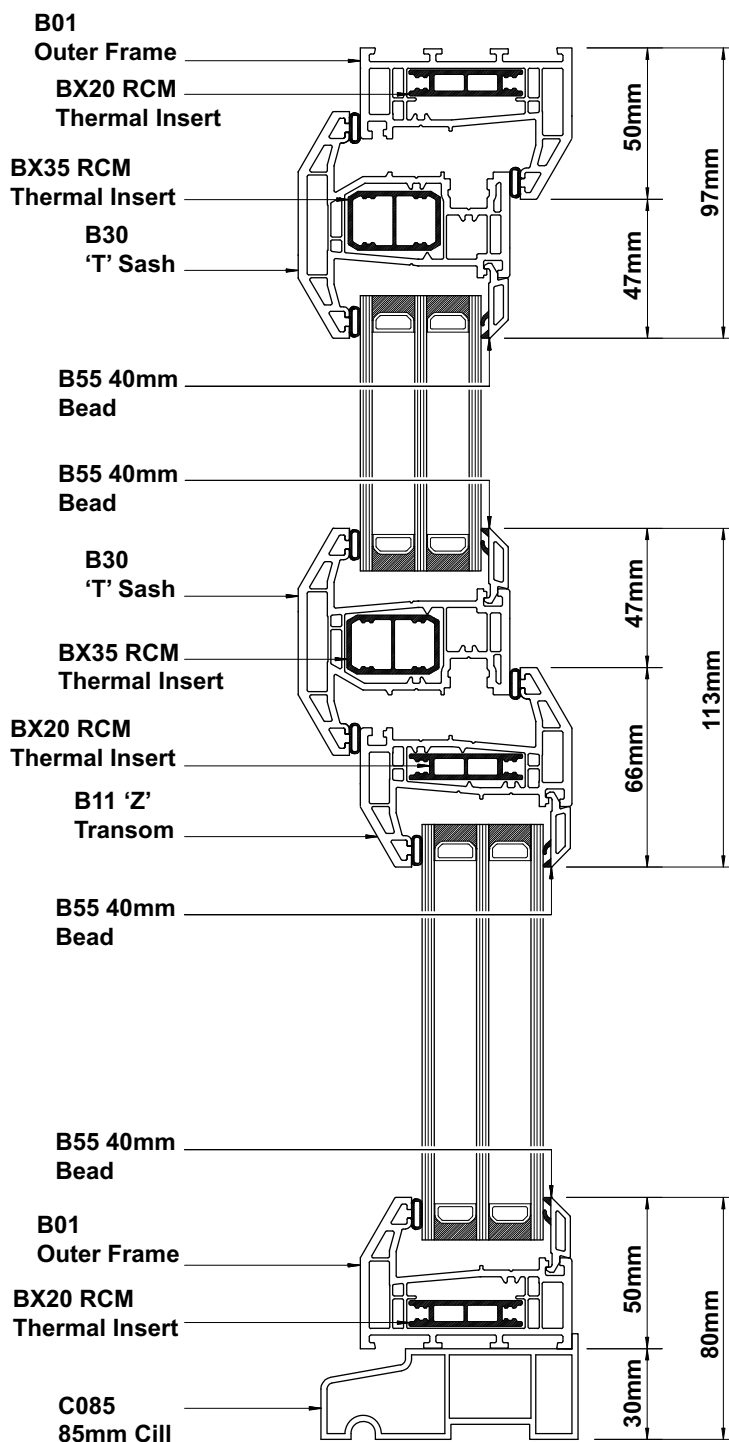
 **Internally Glazed**
Chamfered Bead

 **PCE 'D' Gasket**



Viewed from Outside
Vent points to hinge side

Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



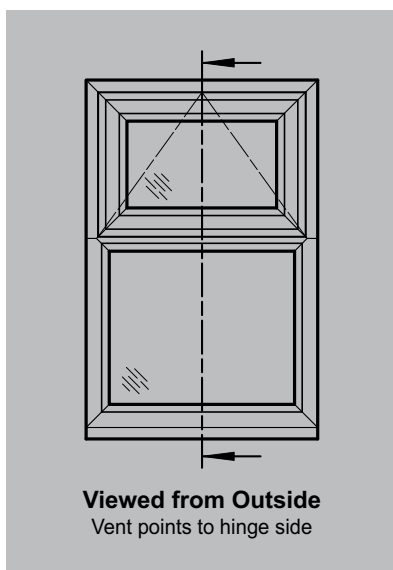
Bevelled 70mm Open-out Window

Internal Glazing

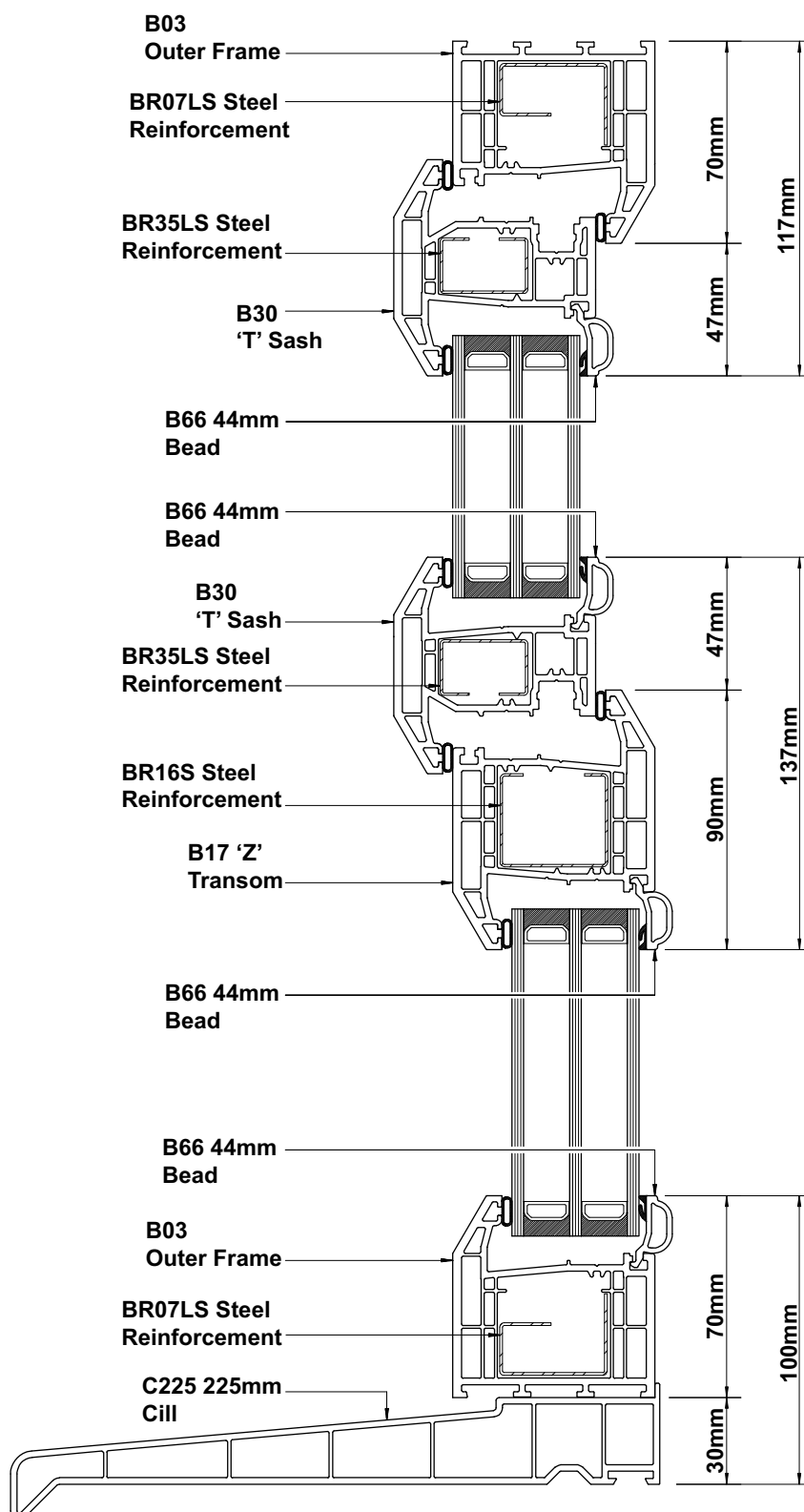
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CASEMENT WINDOW

ELITE 70

Bevelled 70mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



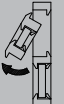
Bevelled 70mm Open-out Window

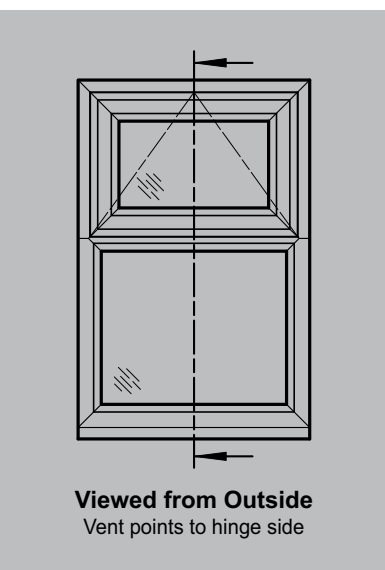
External Glazing

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CASEMENT WINDOW

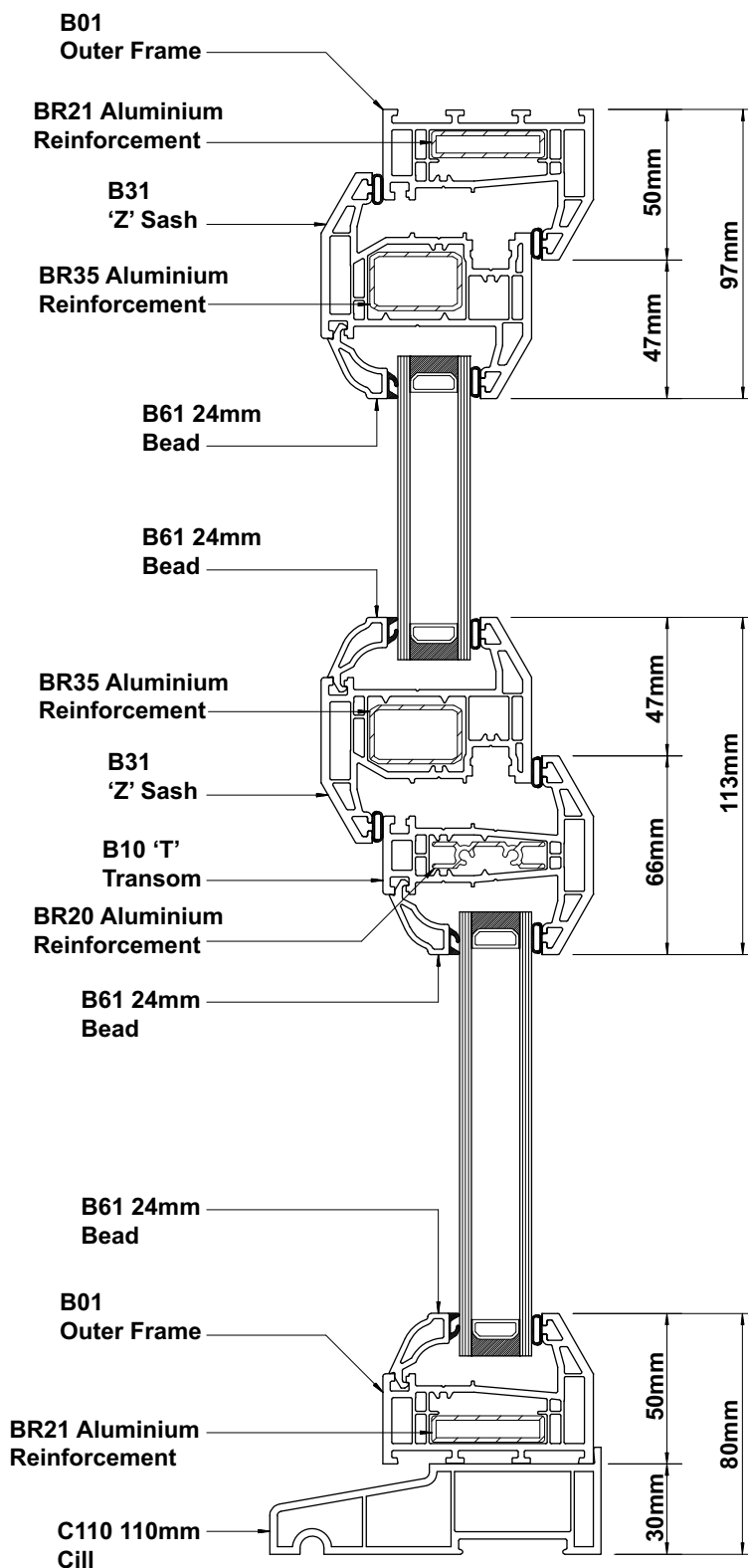
ELITE 70

Bevelled 70mm

-  **Open Out Window**
Slim Outer / Slim Transom
-  **Fully Bevelled**
-  **24mm Double Glazing**
-  **Externally Glazed**
Ovolo Bead
-  **PCE 'D' Gasket**



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



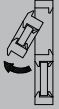
Ovolo 70mm Open-out Window

Internal Glazing

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CASEMENT WINDOW

ELITE 70

Ovolo 70mm



Open Out Window
Intermediate Outer/Slim Transom



Fully Ovolo



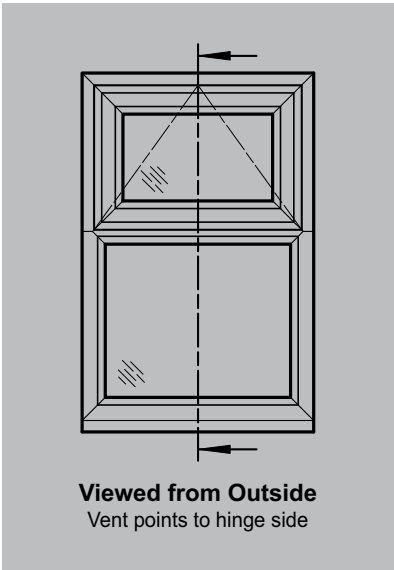
28mm Double Glazing



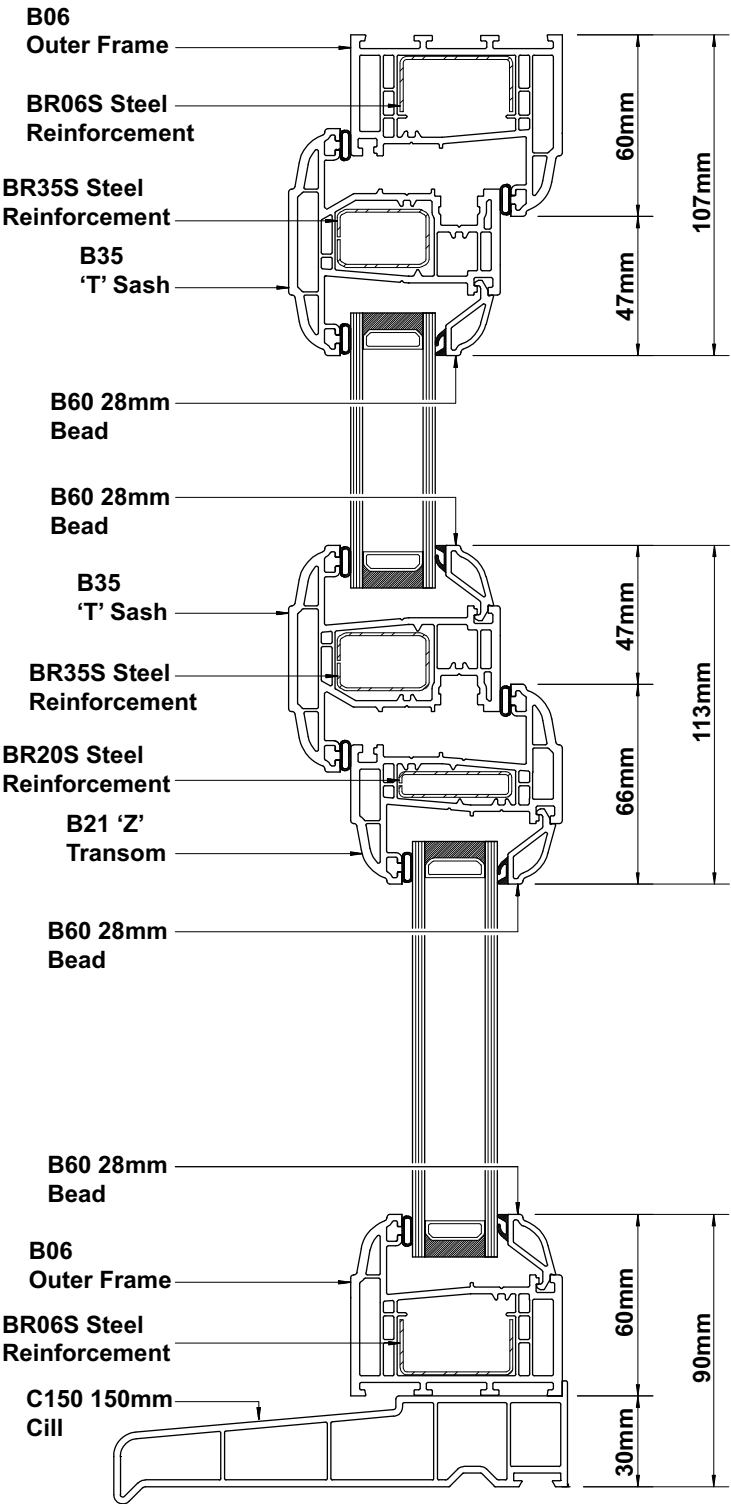
Internally Glazed
Ovolo Bead



PCE 'D' Gasket



Note: All reinforcements are shown for diagramatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



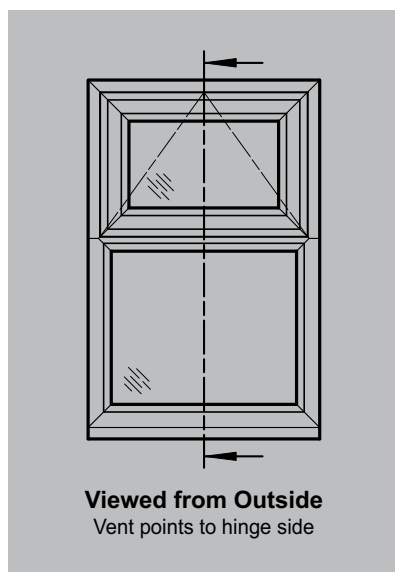
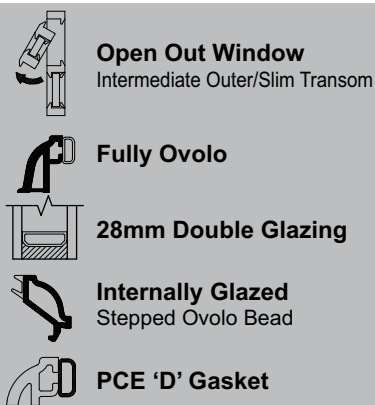
Ovolo 70mm Open-out Window

Internal Glazing

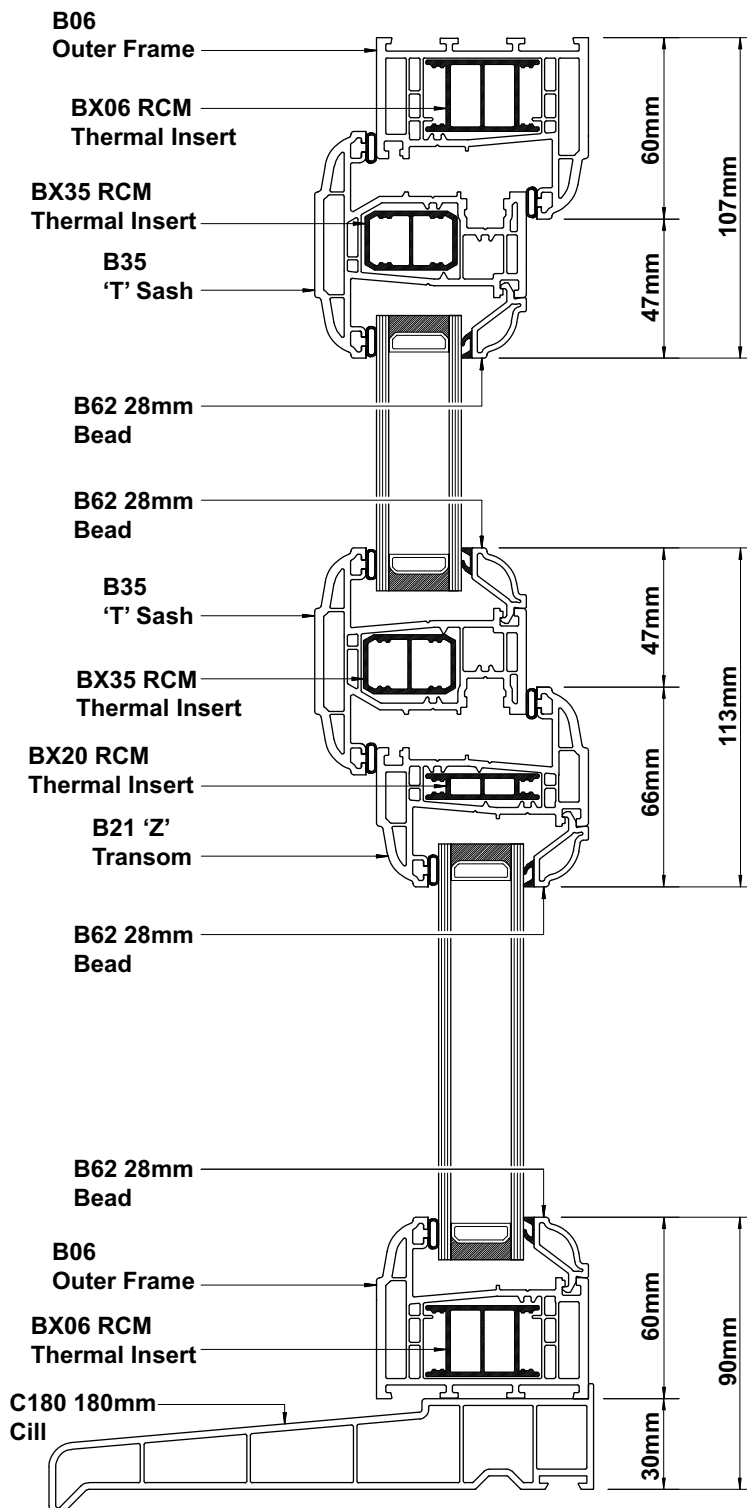
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CASEMENT WINDOW

ELITE 70

Ovolo 70mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



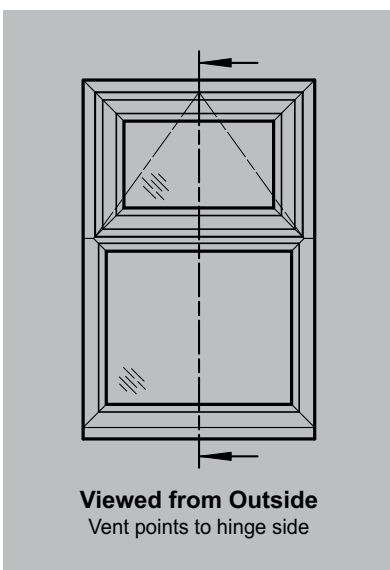
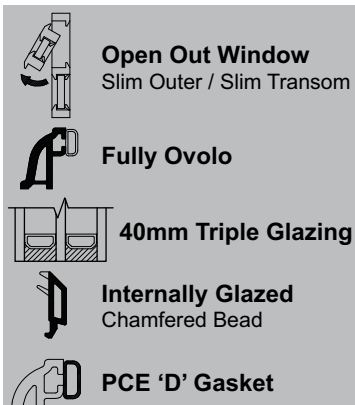
Ovolo 70mm Open-out Window

Internal Glazing

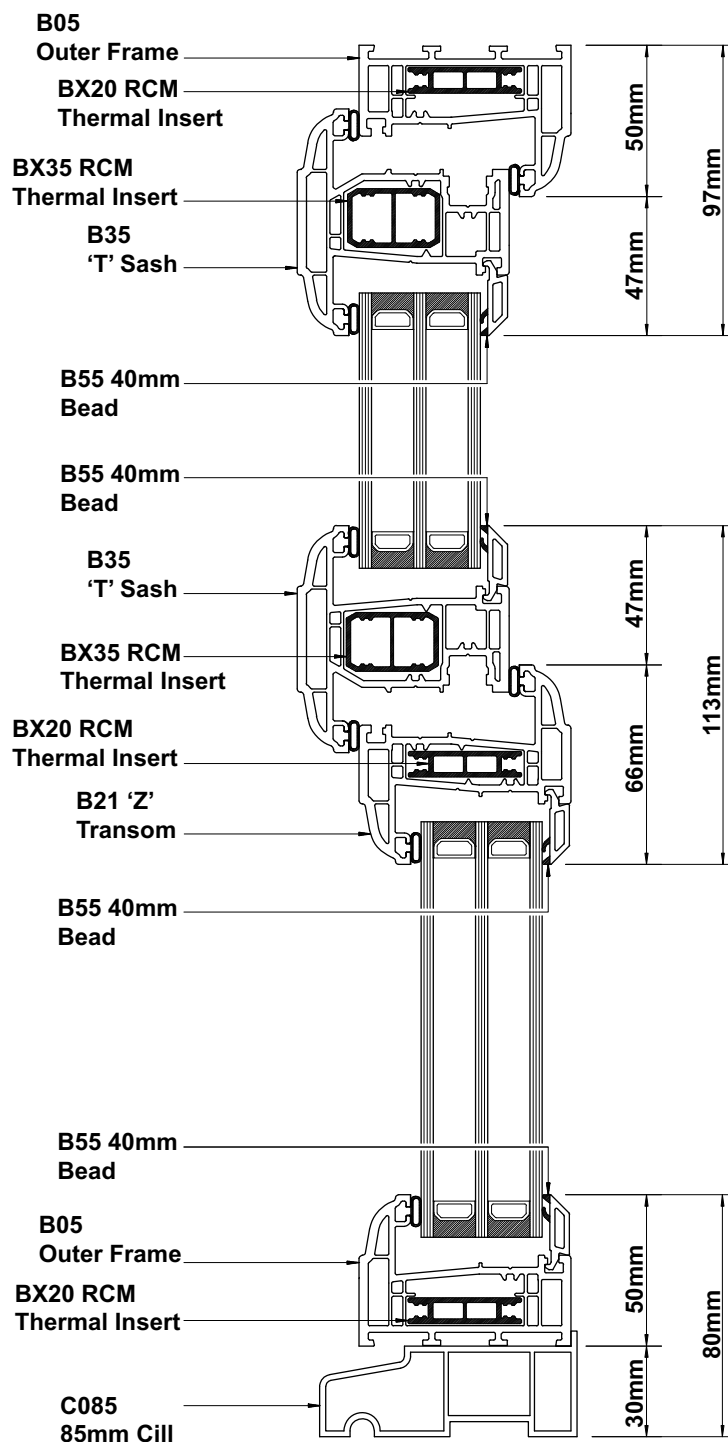
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CASEMENT WINDOW

ELITE 70

Ovolo 70mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



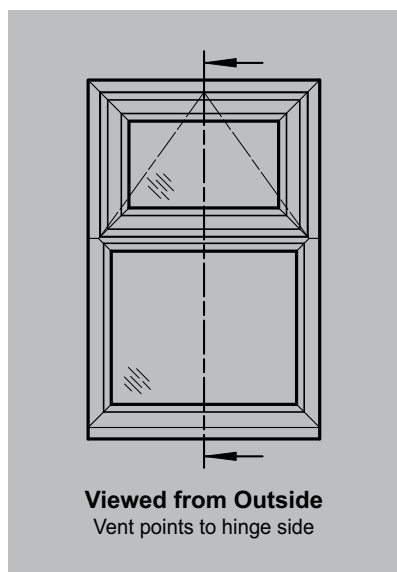
Ovolo 70mm Open-out Window

Internal Glazing

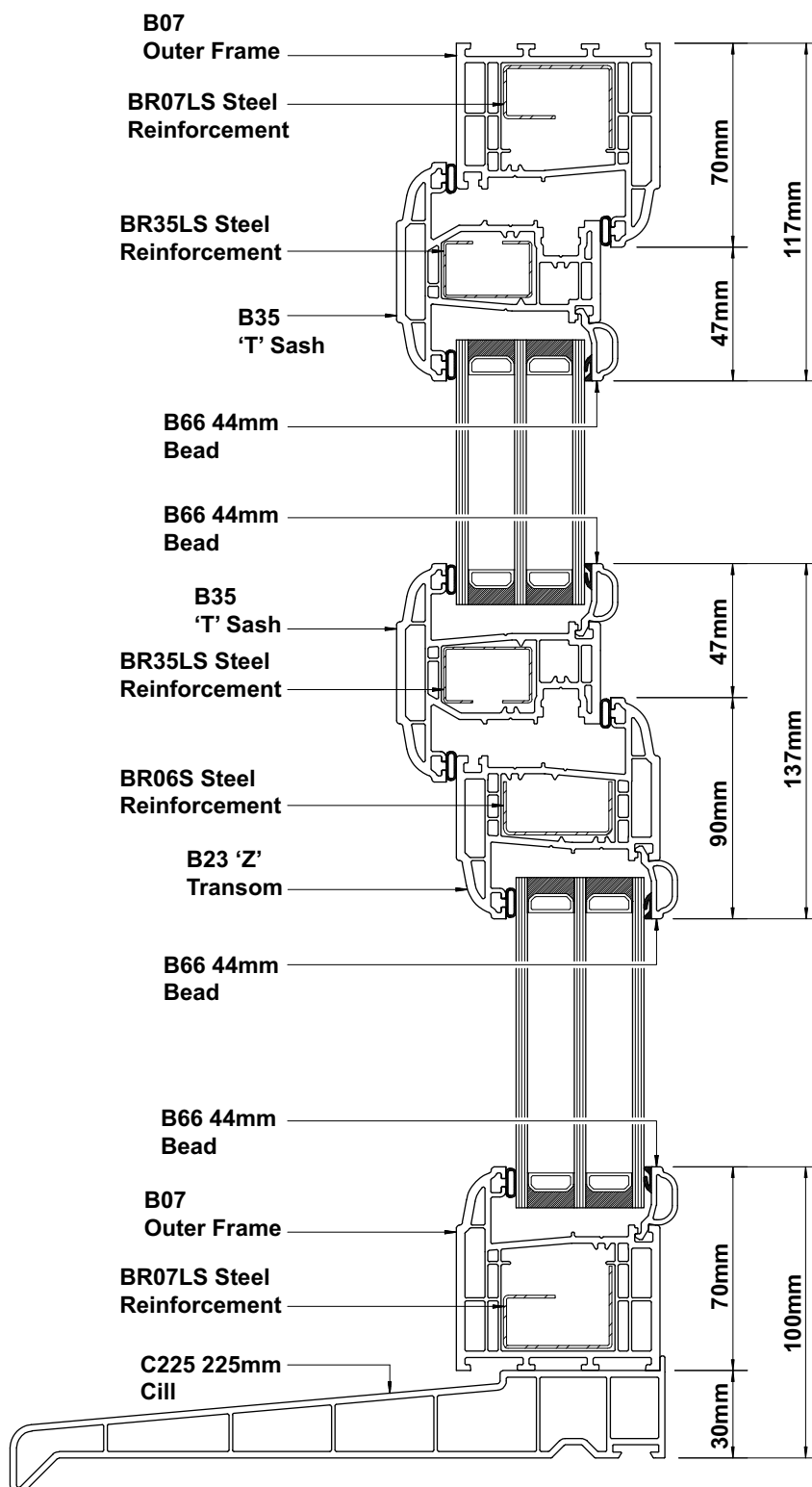
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CASEMENT WINDOW

ELITE 70

Ovolo 70mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



Ovolo 70mm Open-out Window

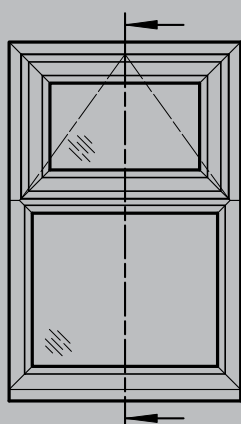
External Glazing

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CASEMENT WINDOW

ELITE 70

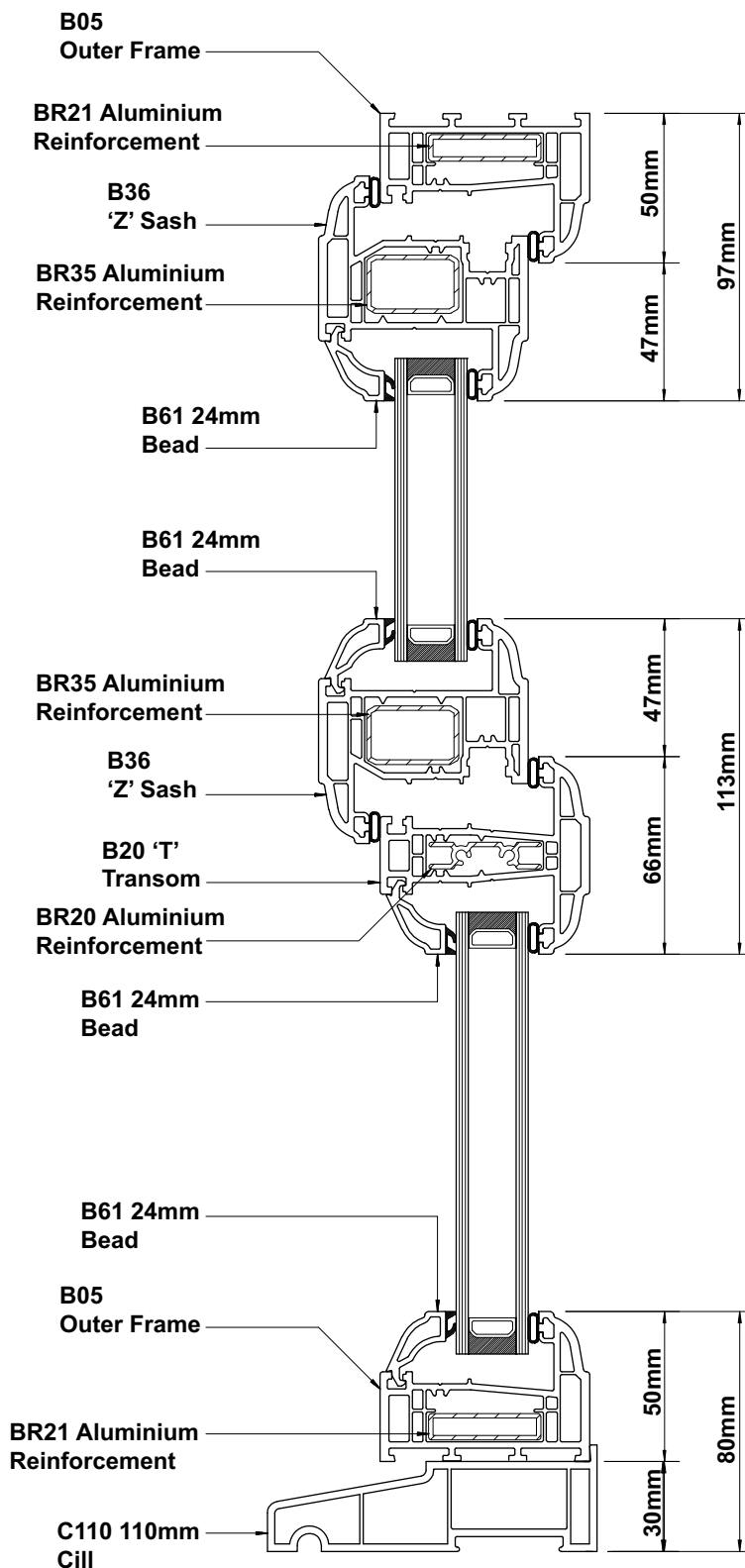
Ovolo 70mm

-  **Open Out Window**
Slim Outer/Slim Transom
-  **Fully Ovolo**
-  **24mm Double Glazing**
-  **Externally Glazed**
Ovolo Bead
-  **PCE 'D' Gasket**



Viewed from Outside
Vent points to hinge side

Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



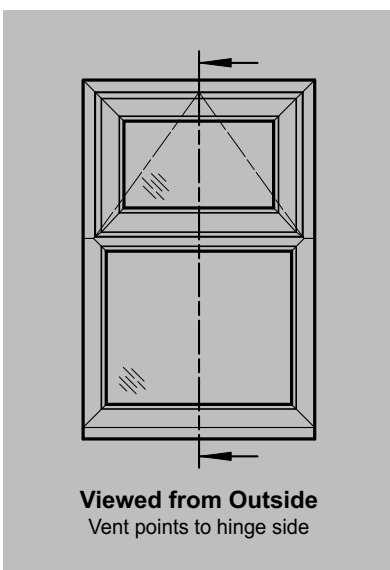
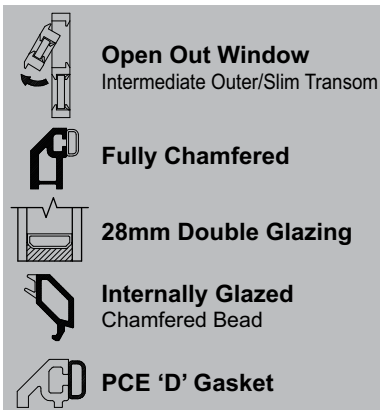
Chamfered 63mm Open-out Window

Internally Glazed

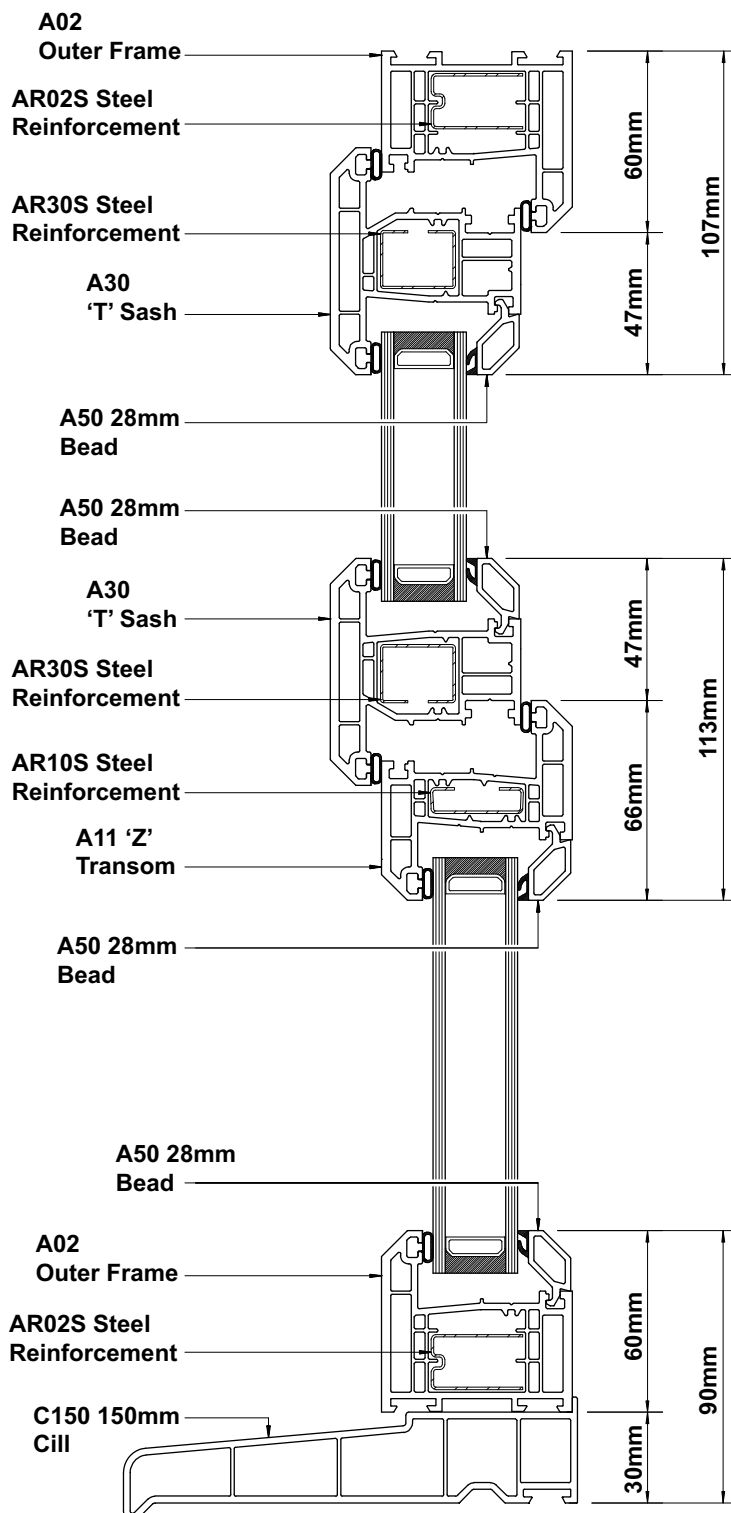
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CASEMENT WINDOW

ELITE 63

Chamfered 63mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.



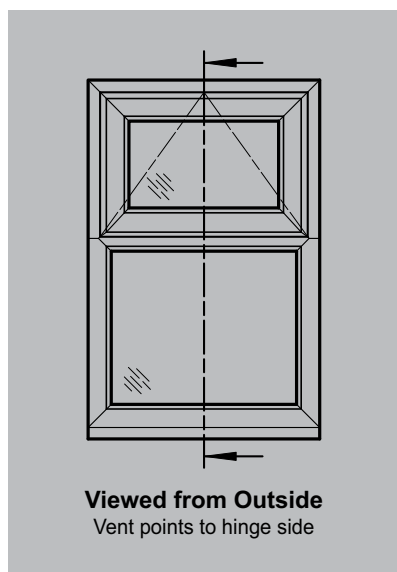
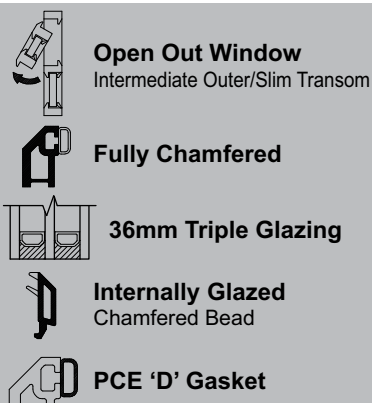
Chamfered 63mm Open-out Window

Internal Glazing

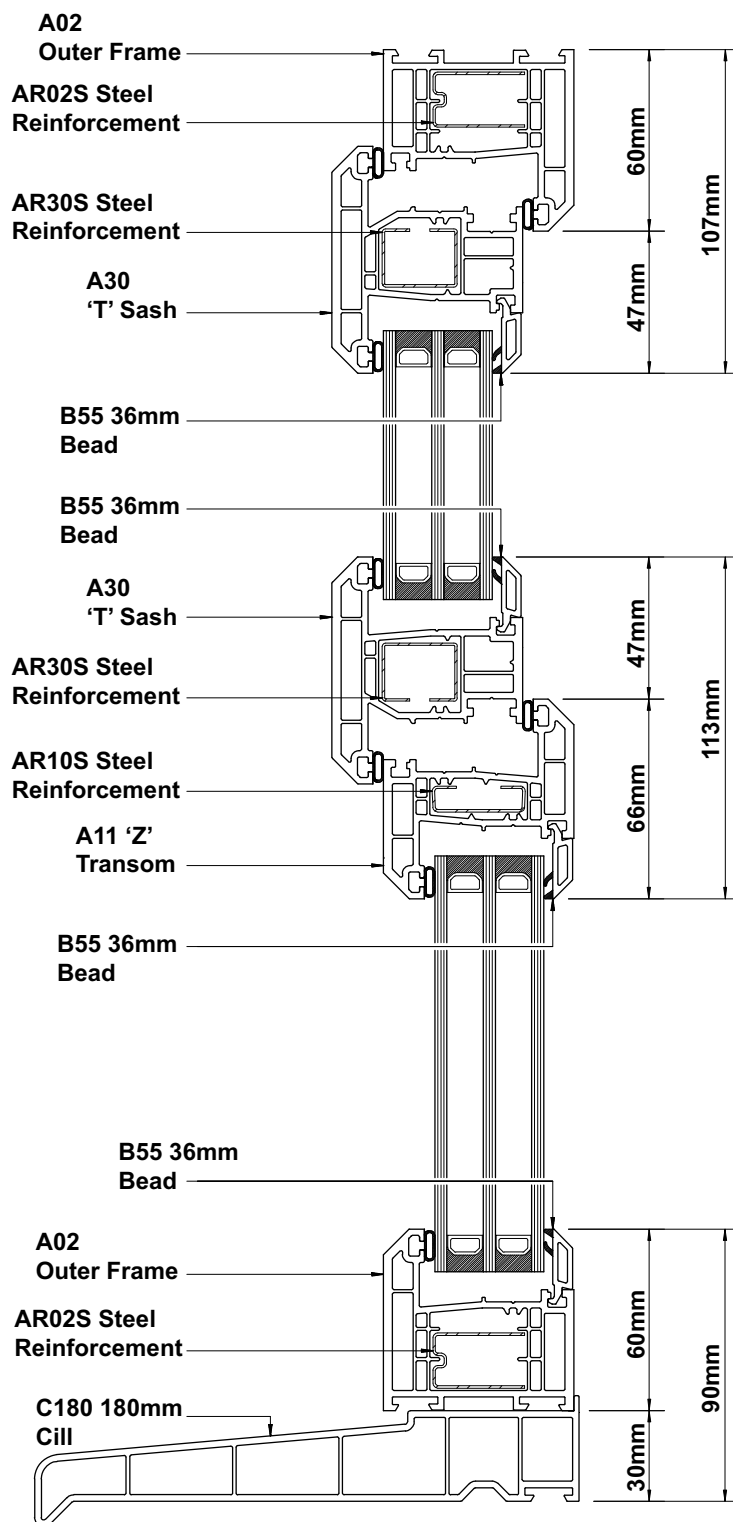
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CASEMENT WINDOW

ELITE 63

Chamfered 63mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.



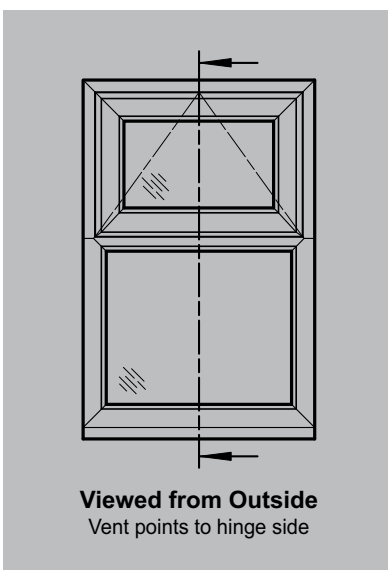
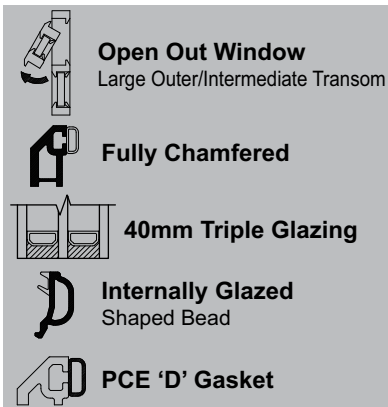
Chamfered 63mm Open-out Window

Internal Glazing

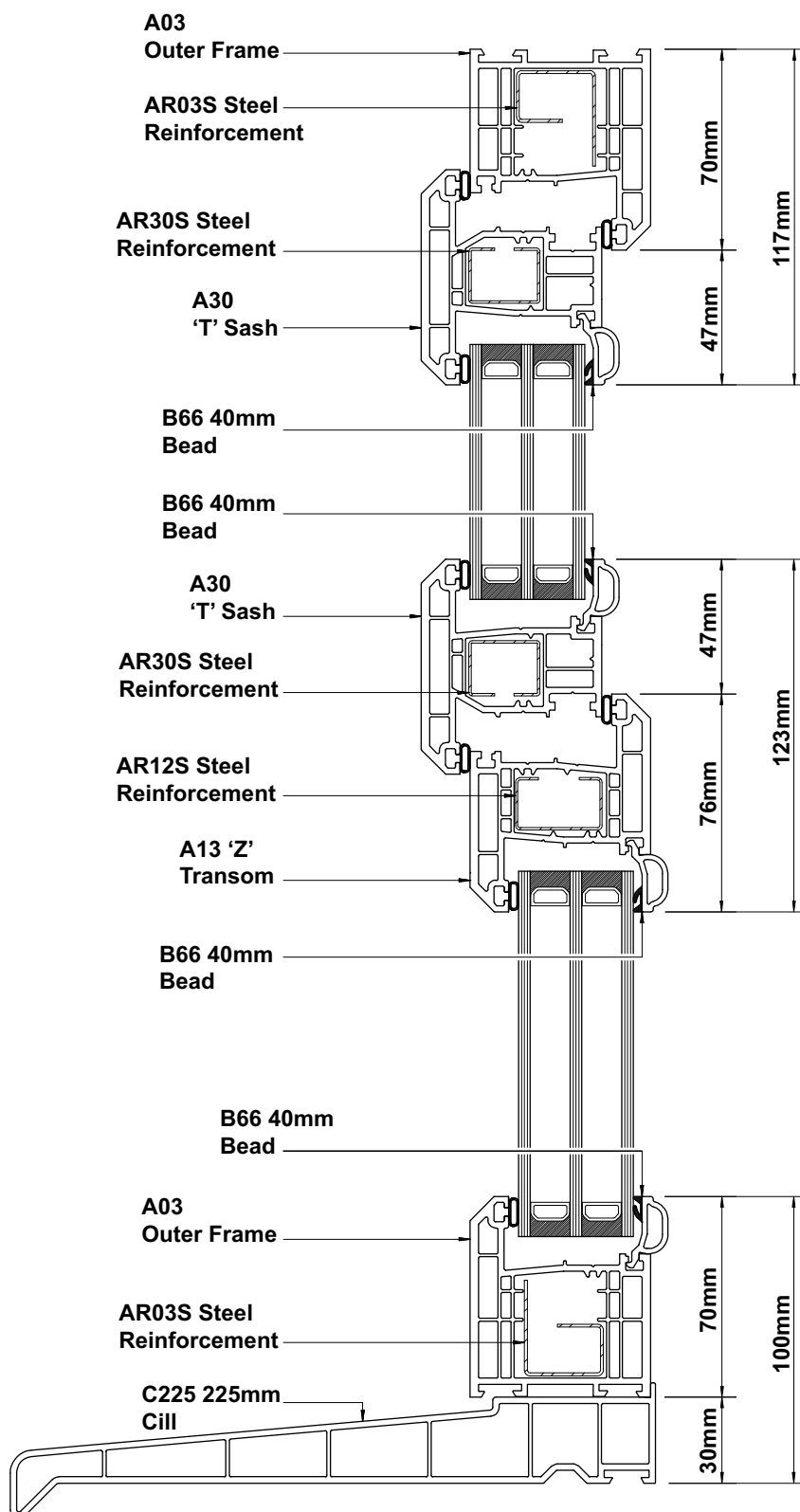
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CASEMENT WINDOW

ELITE 63

Chamfered 63mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.



Chamfered 63mm Open-out Window

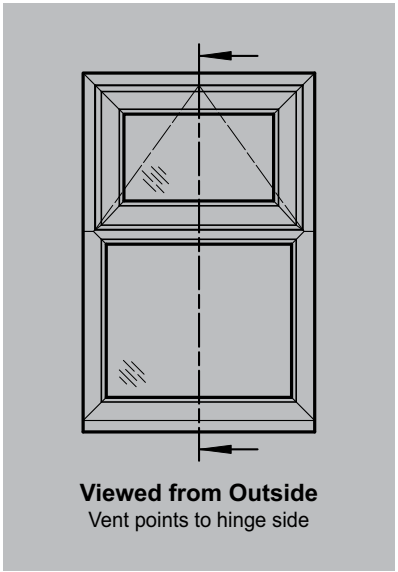
External Glazing

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CASEMENT WINDOW

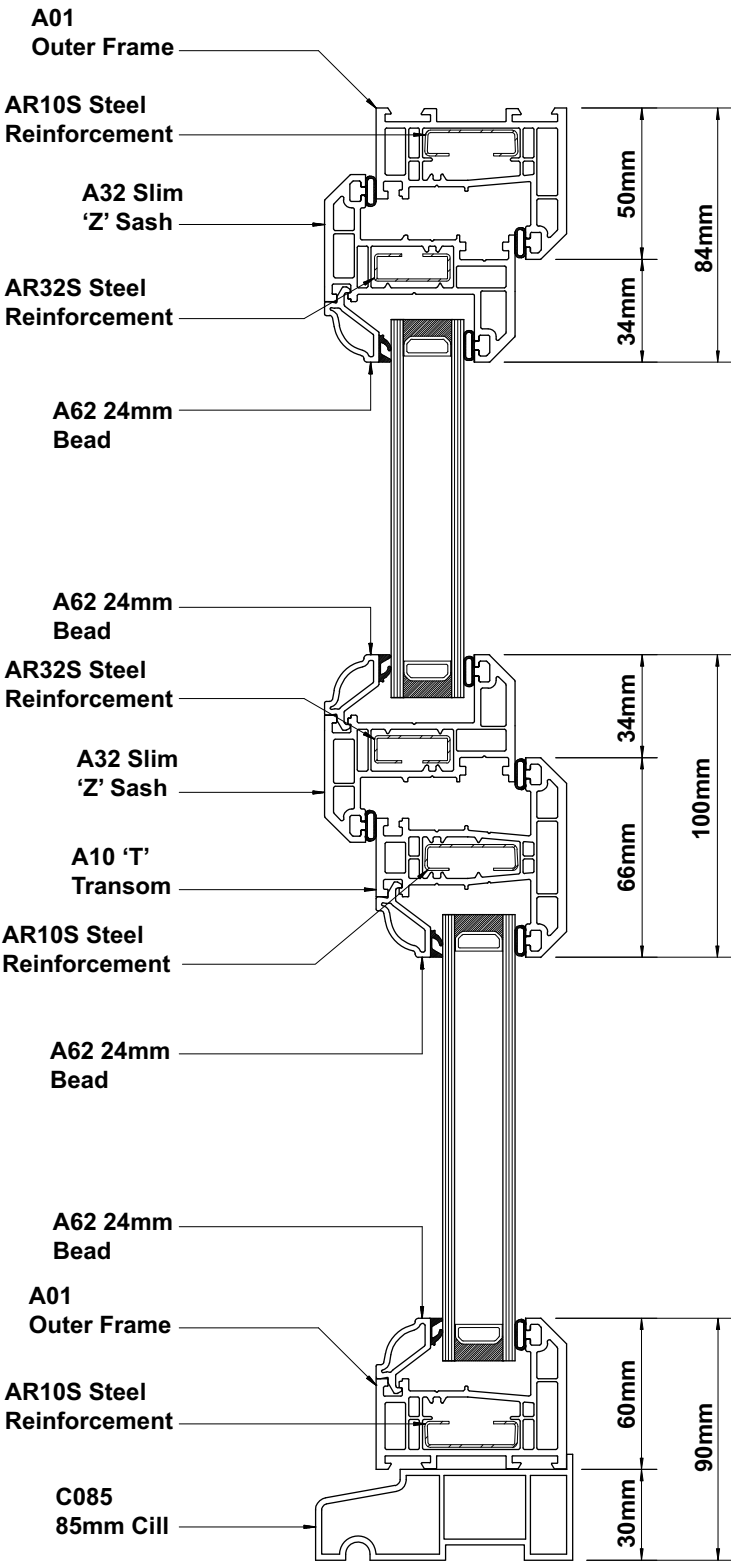
ELITE 63

Chamfered 63mm

-  **Open Out Window**
Slim Outer/Slim Transom & Slim Sash
-  **Fully Chamfered**
-  **24mm Double Glazing**
-  **Internally Glazed**
Bevelled Bead
-  **PCE 'D' Gasket**



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.



Window Styles

Tilt & Turn Windows



ELITE 70 

ELITE 63 

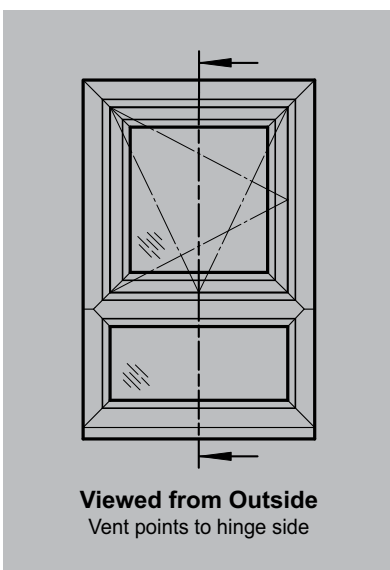
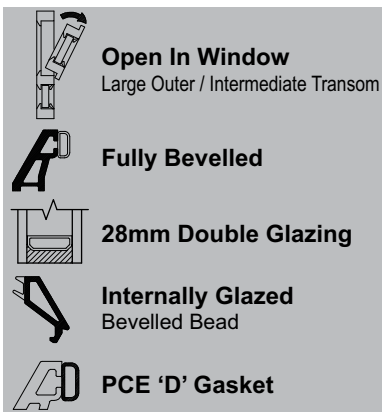
Bevelled 70mm Open-in Window

Internal Glazing

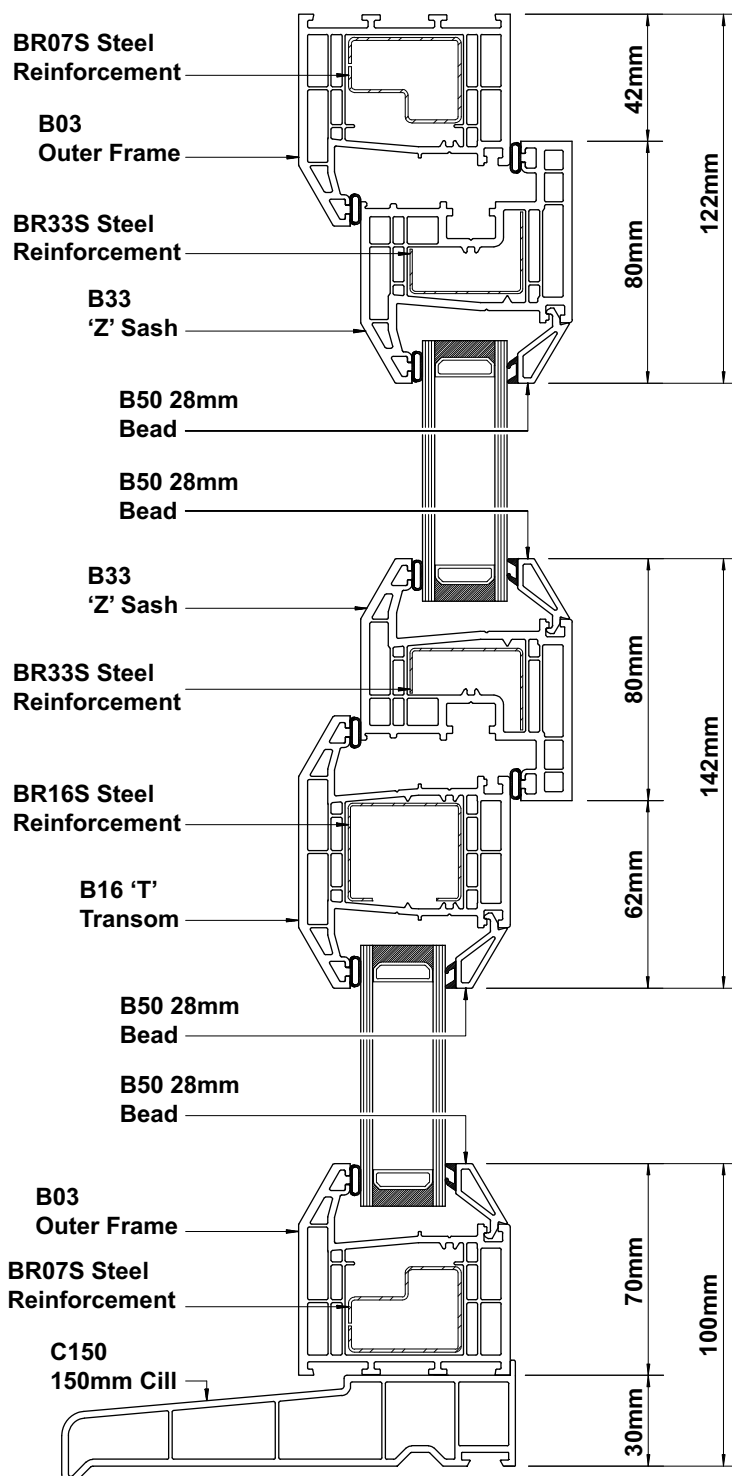
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	TILT & TURN WINDOW

ELITE 70

Bevelled 70mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



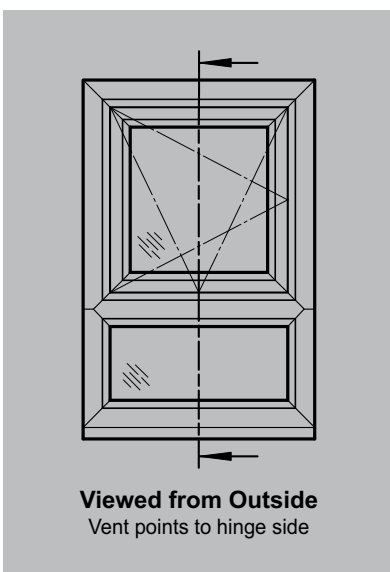
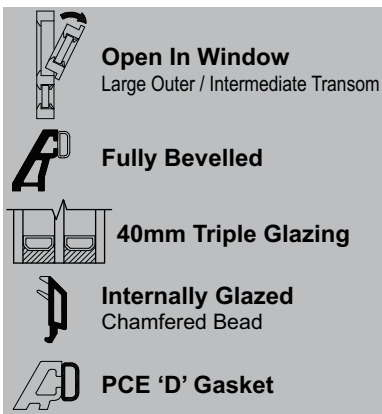
Bevelled 70mm Open-in Window

Internal Glazing

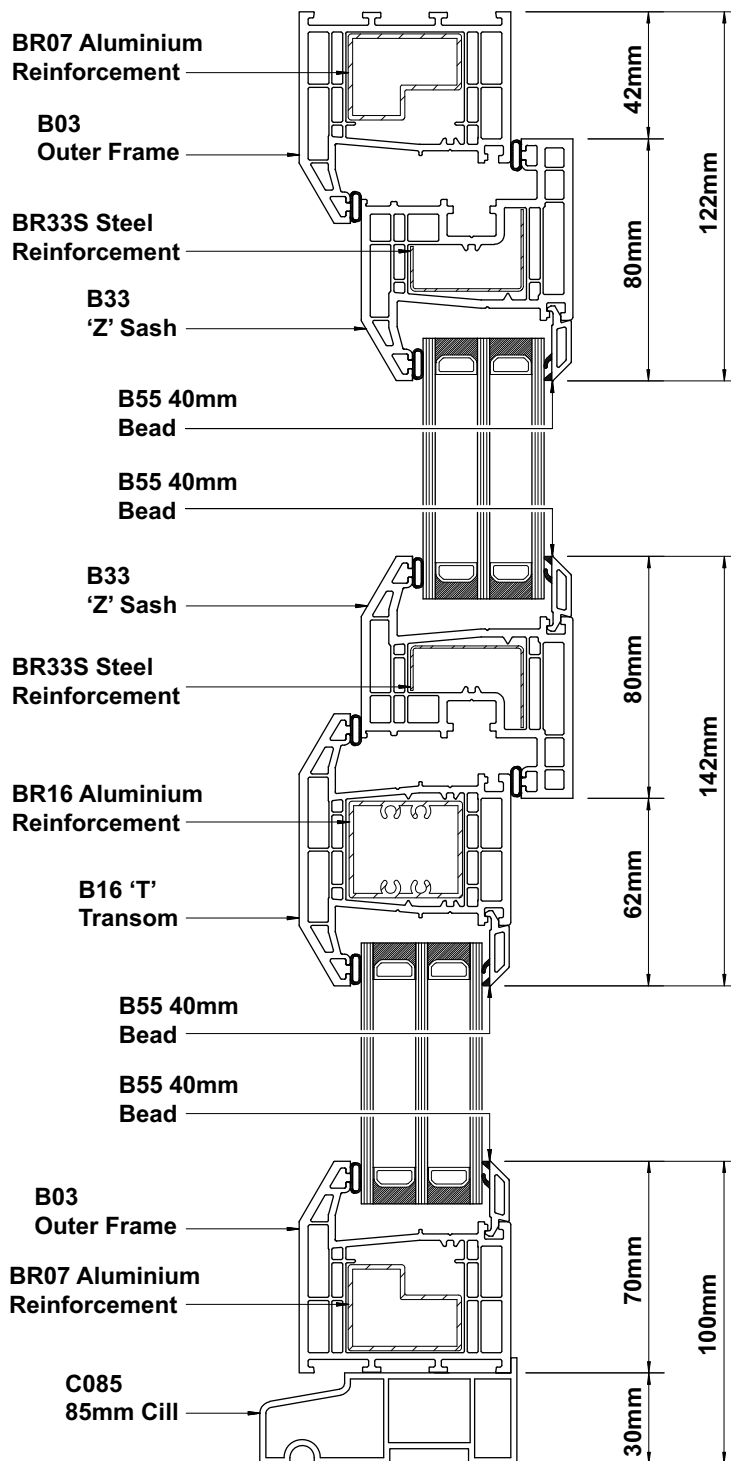
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	TILT & TURN WINDOW

ELITE 70

Bevelled 70mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



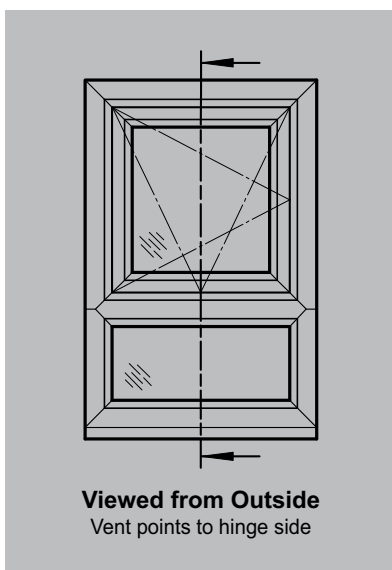
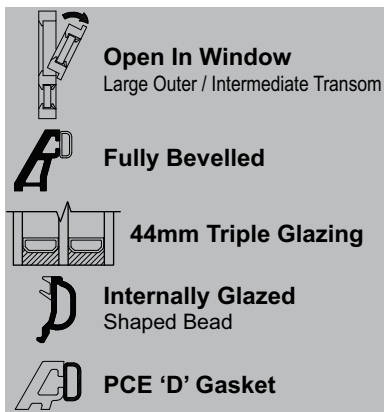
Bevelled 70mm Open-in Window

Internal Glazing

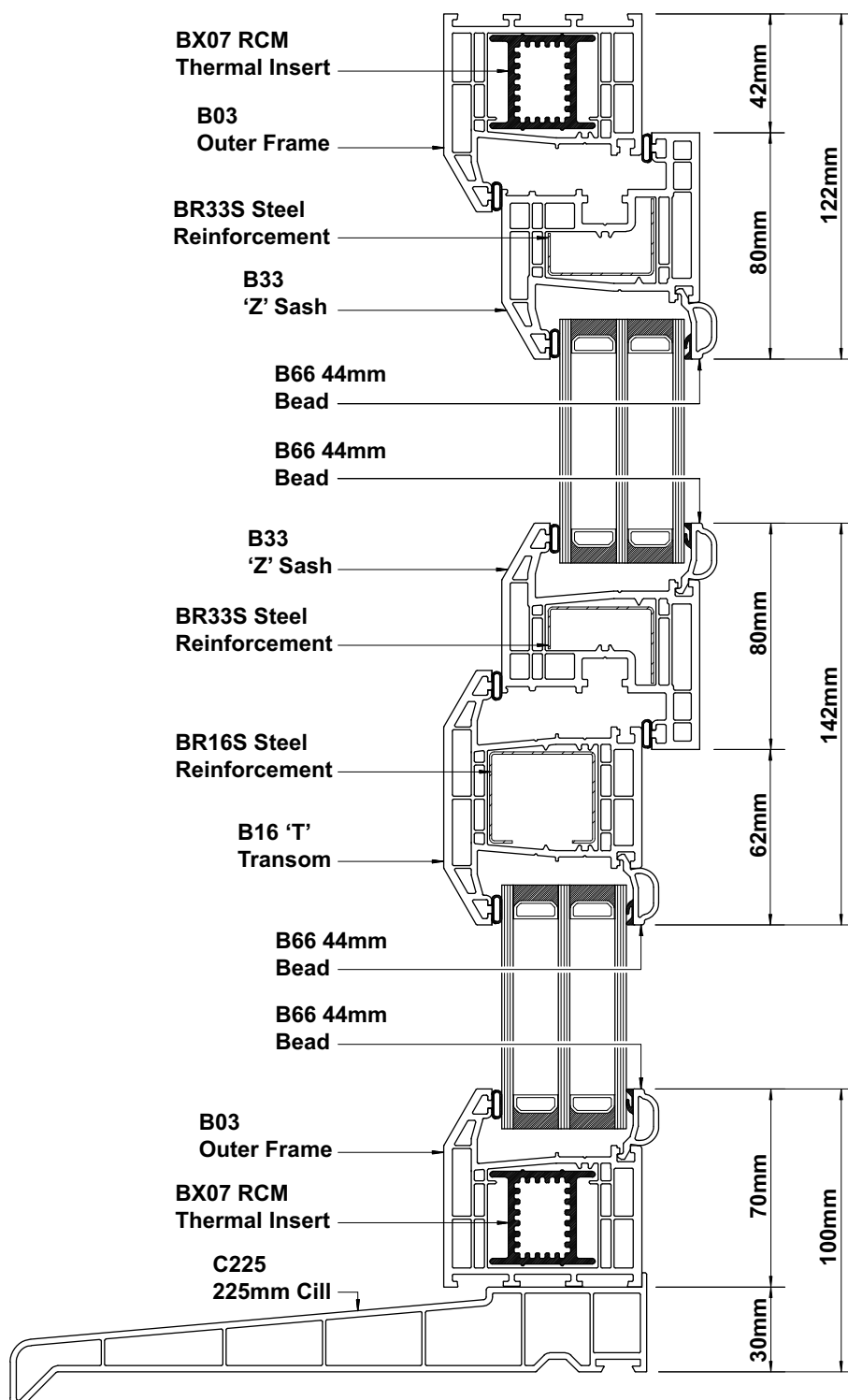
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	TILT & TURN WINDOW

ELITE 70

Bevelled 70mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



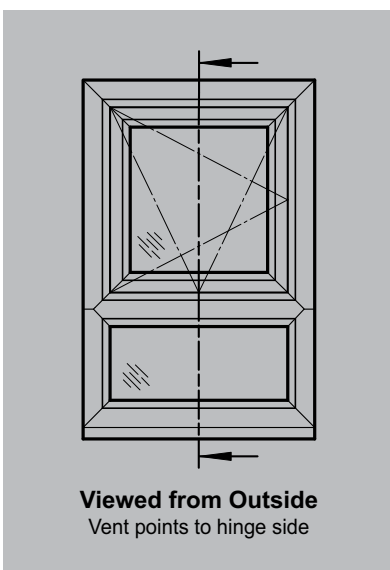
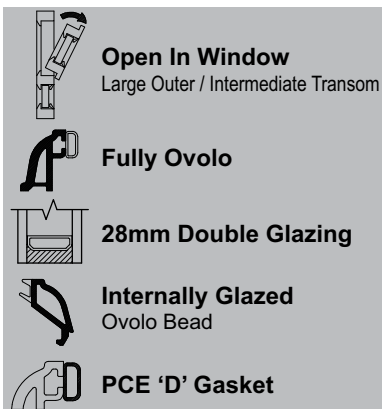
Ovolo 70mm Open-in Window

Internal Glazing

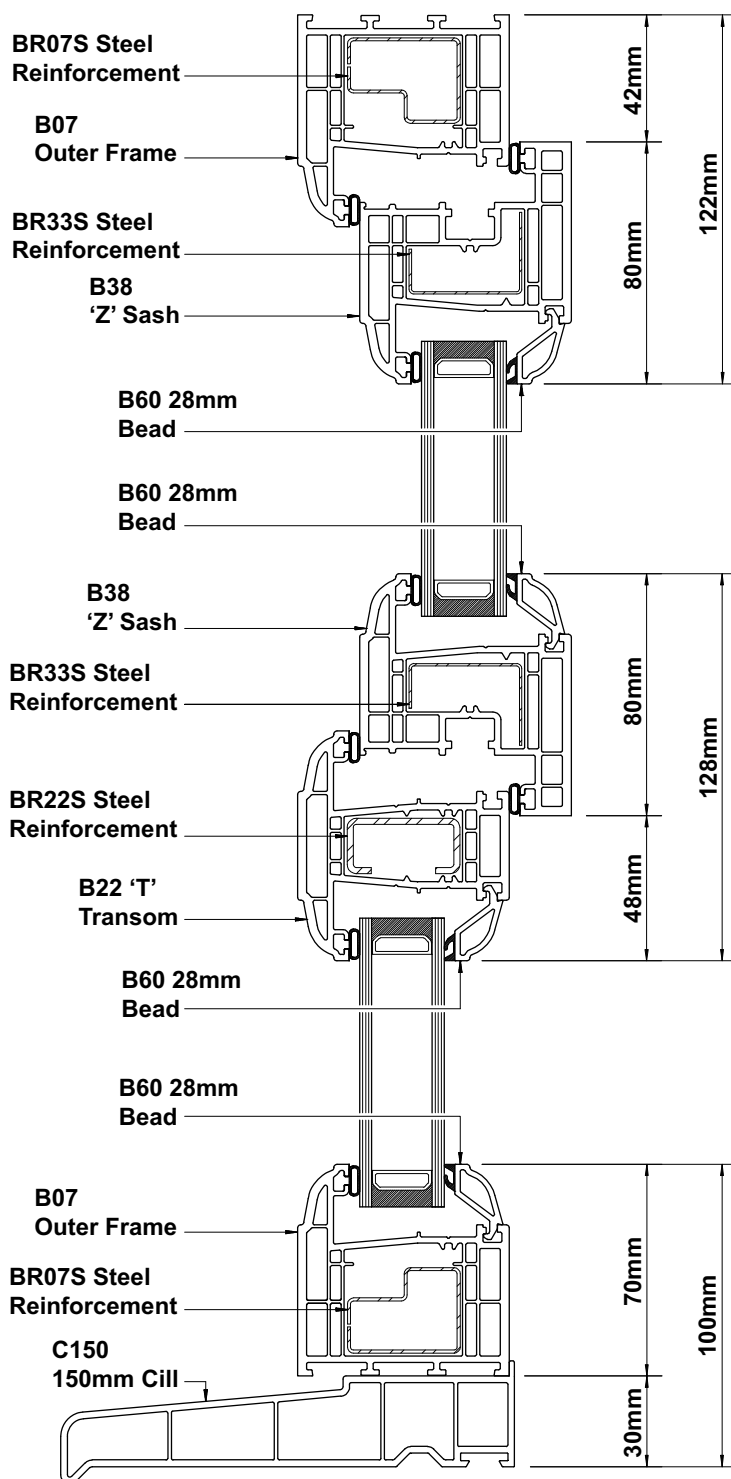
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	TILT & TURN WINDOW

ELITE 70

Ovolo 70mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



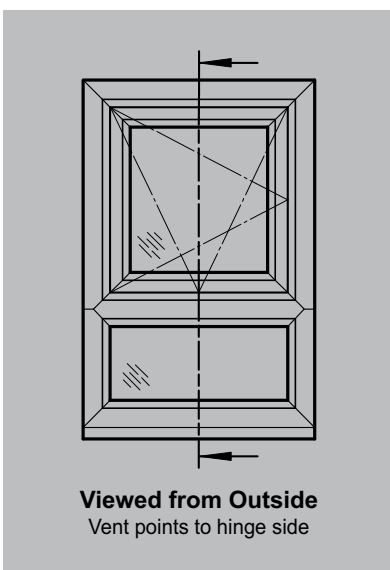
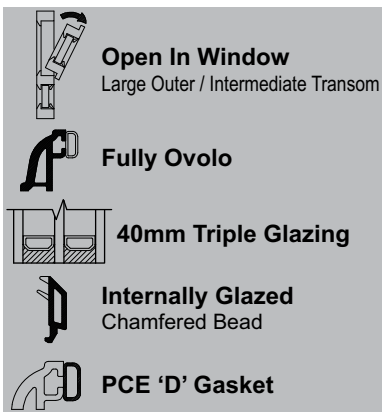
Ovolo 70mm Open-in Window

Internal Glazing

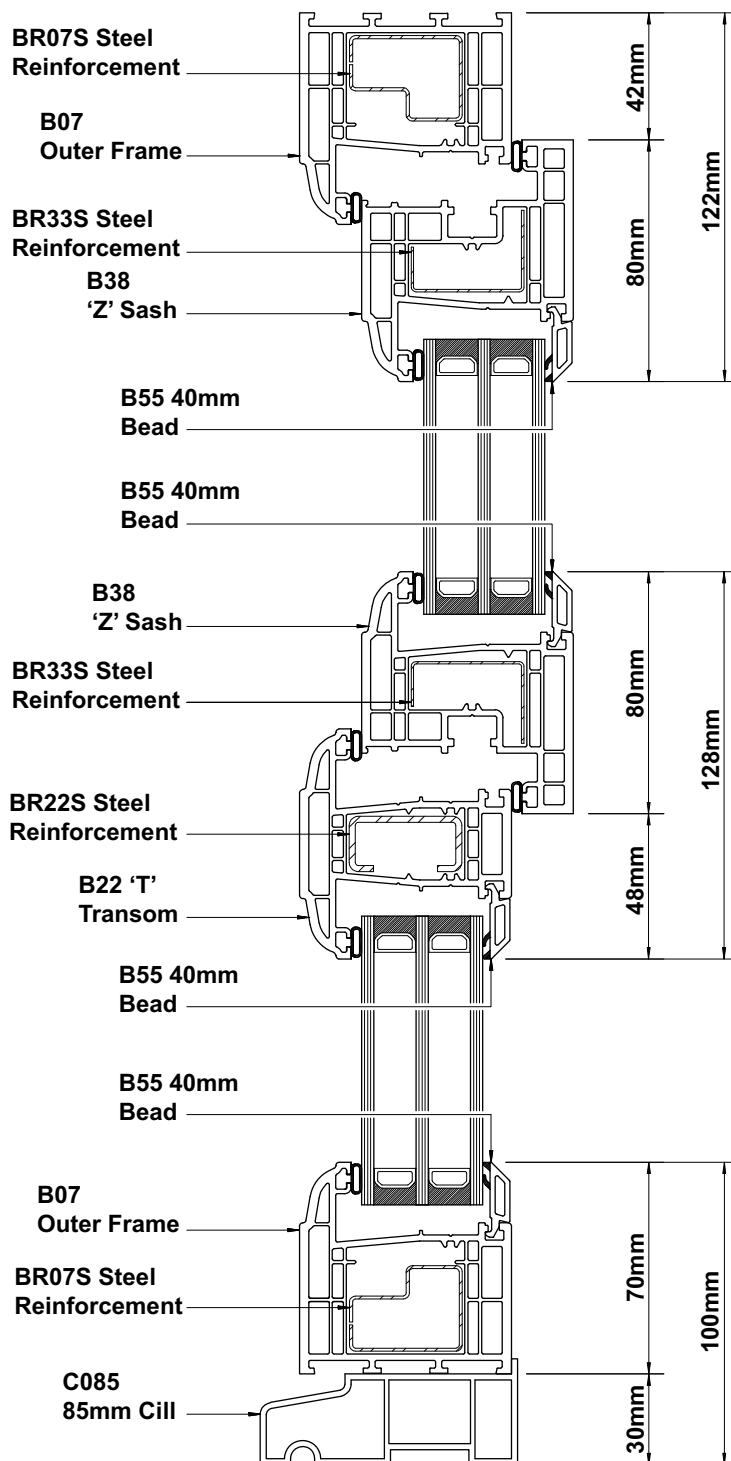
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	TILT & TURN WINDOW

ELITE 70

Ovolo 70mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



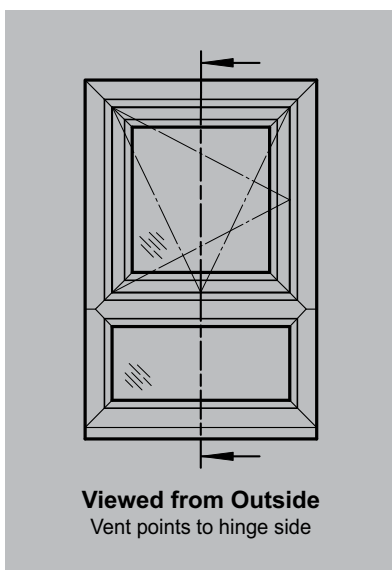
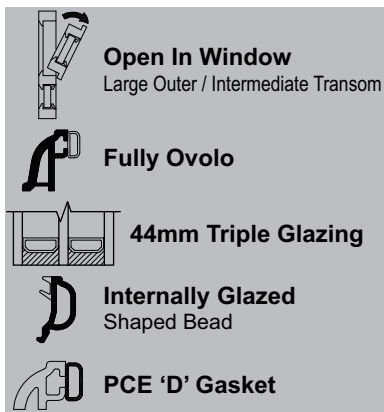
Ovolo 70mm Open-in Window

Internal Glazing

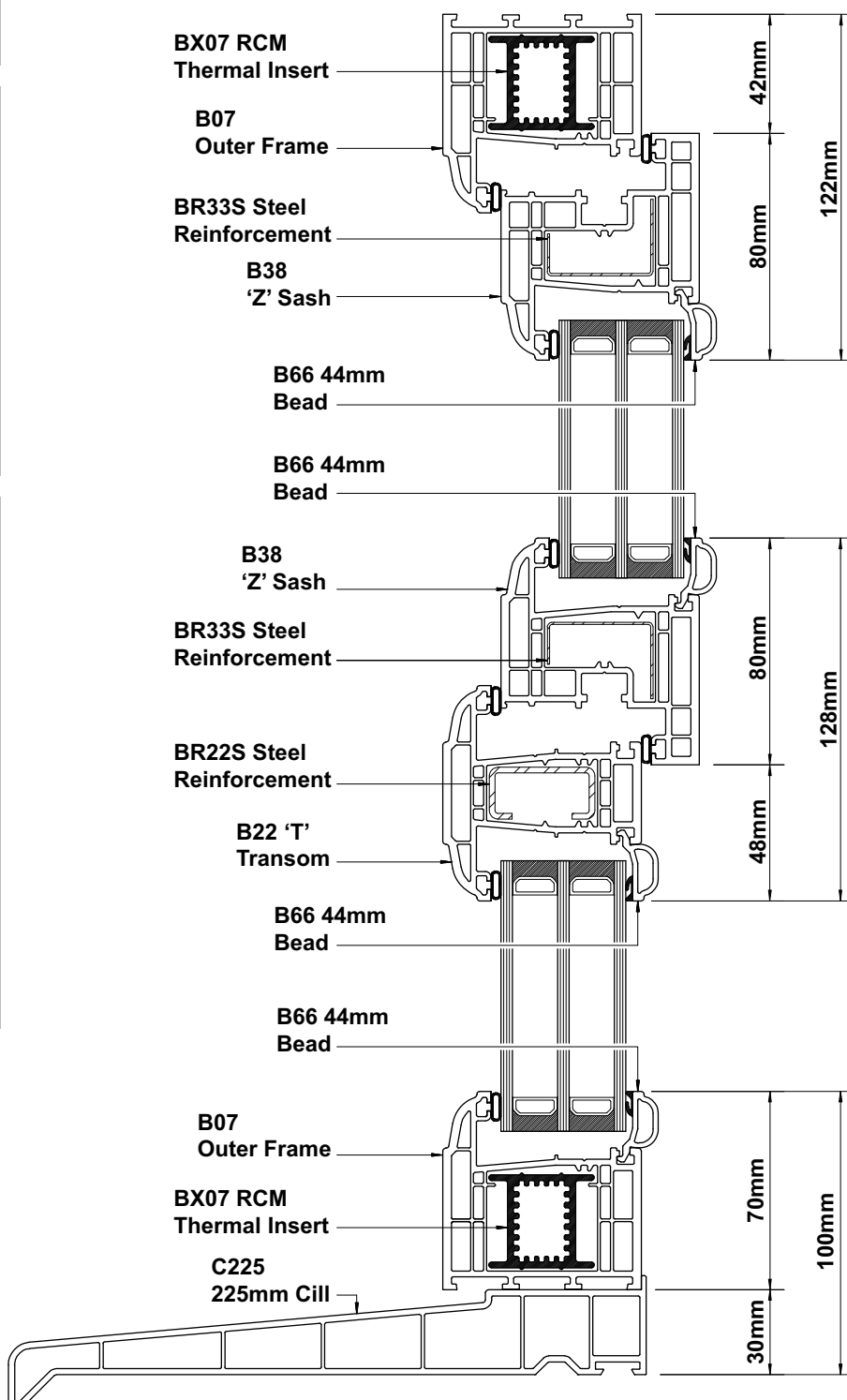
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	TILT & TURN WINDOW

ELITE 70

Ovolo 70mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



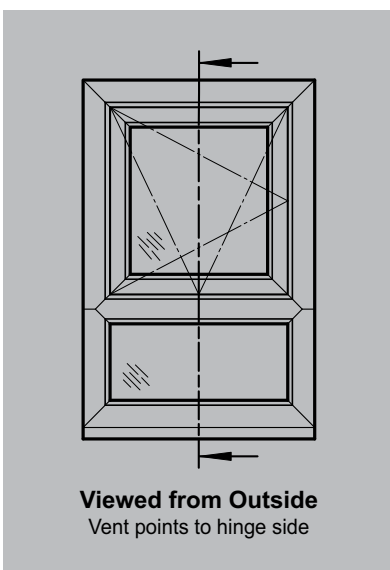
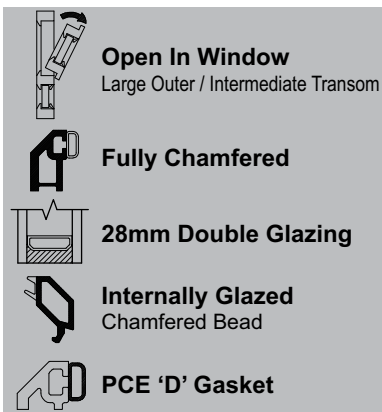
Chamfered 63mm Open-in Window

Internal Glazing

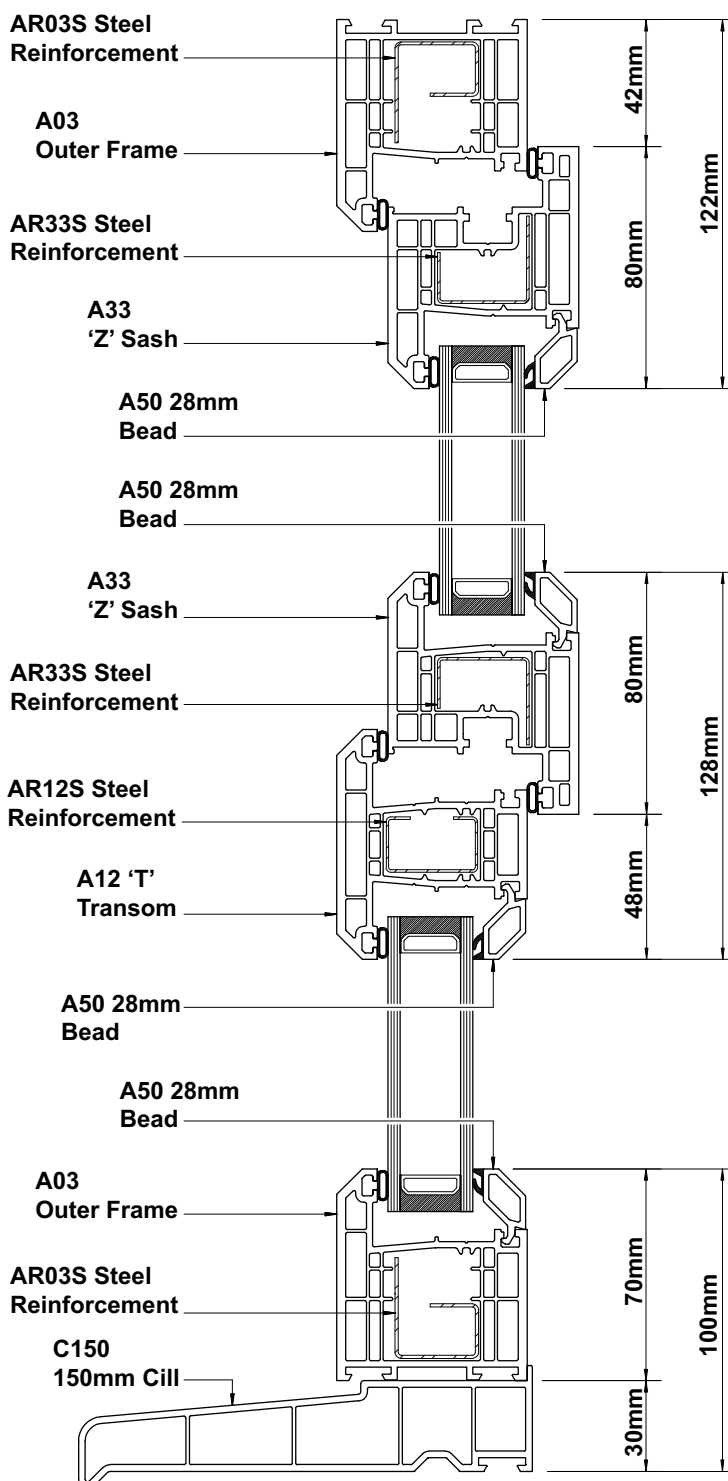
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	TILT & TURN WINDOW

ELITE 63

Chamfered 63mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.



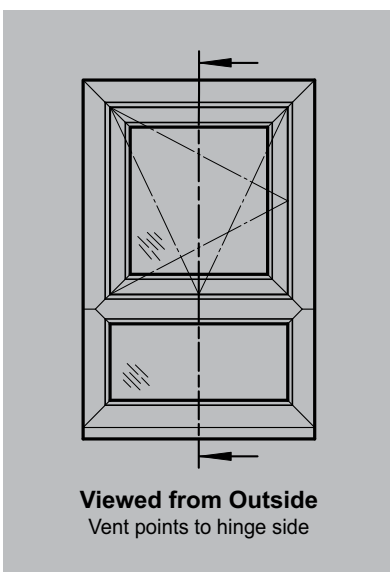
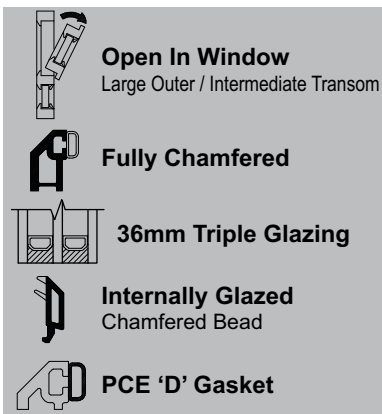
Chamfered 63mm Open-in Window

Internal Glazing

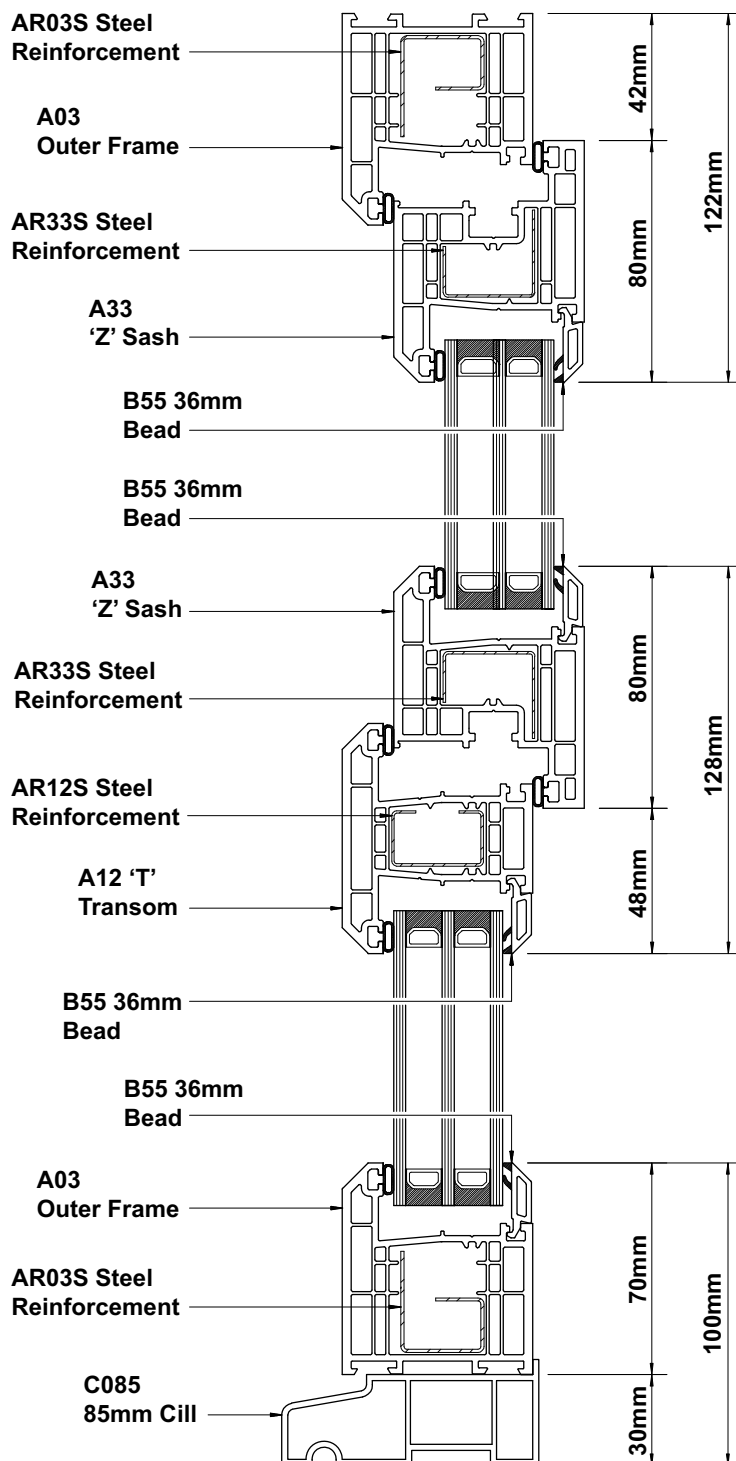
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	TILT & TURN WINDOW

ELITE 63

Chamfered 63mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.



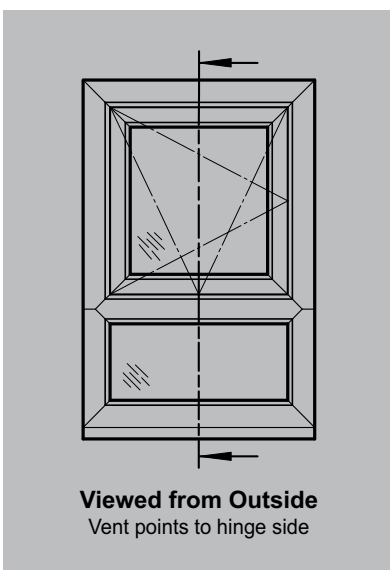
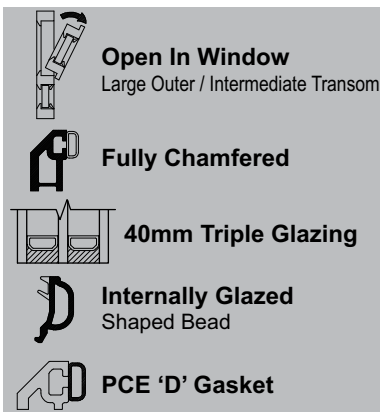
Chamfered 63mm Open-in Window

Internal Glazing

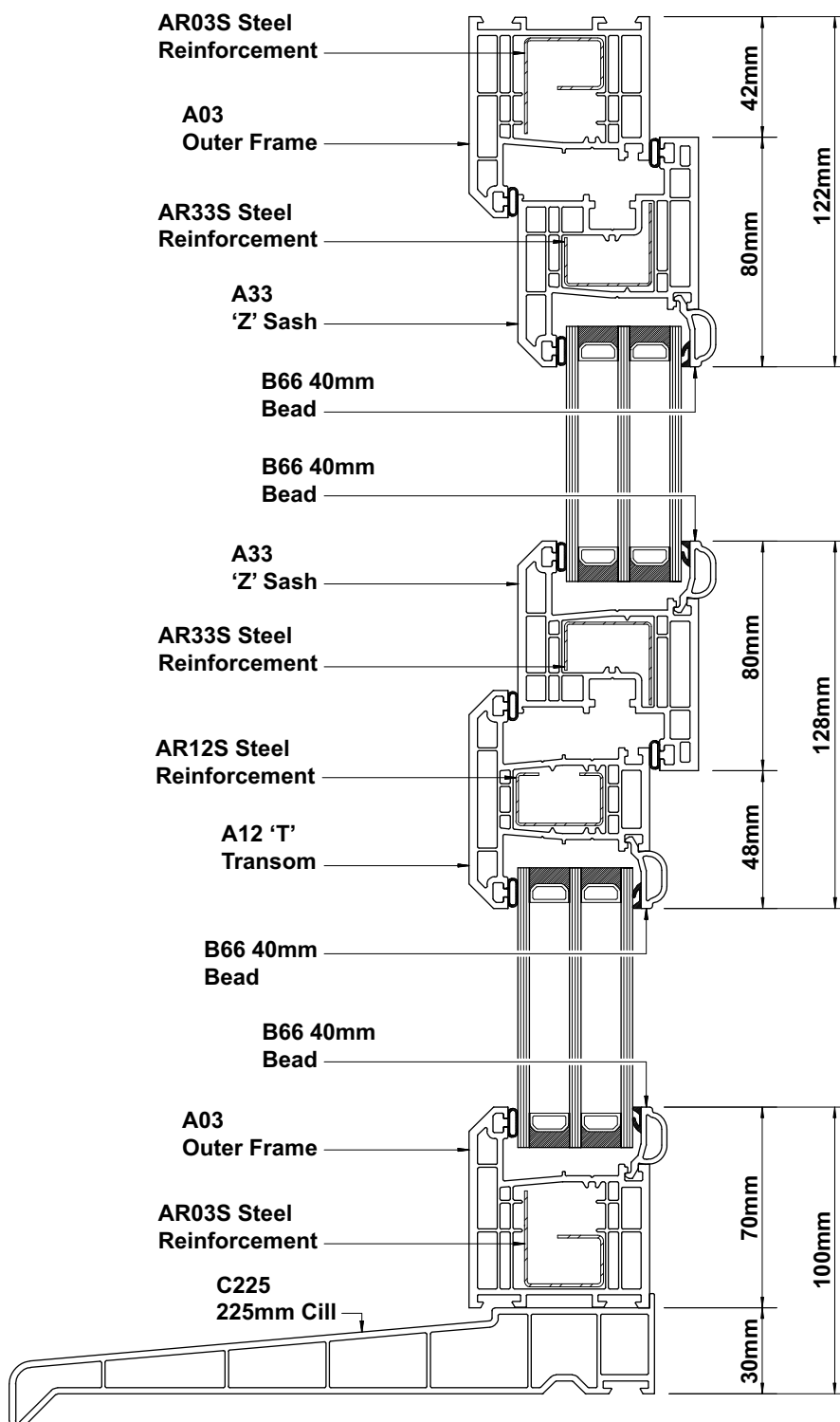
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	TILT & TURN WINDOW

ELITE 63

Chamfered 63mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.



Window Styles Fully Reversible Window



ELITE 70 

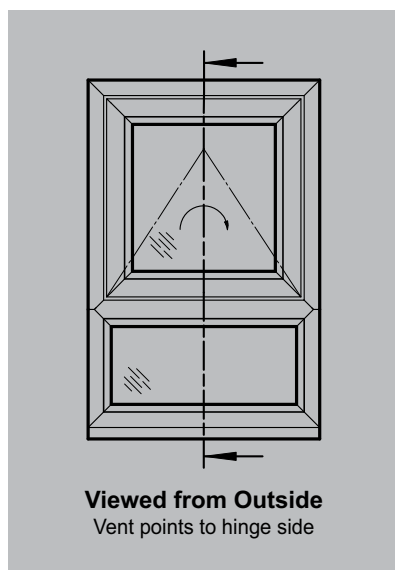
Bevelled 70mm Fully Reversible Window

Internal Glazing

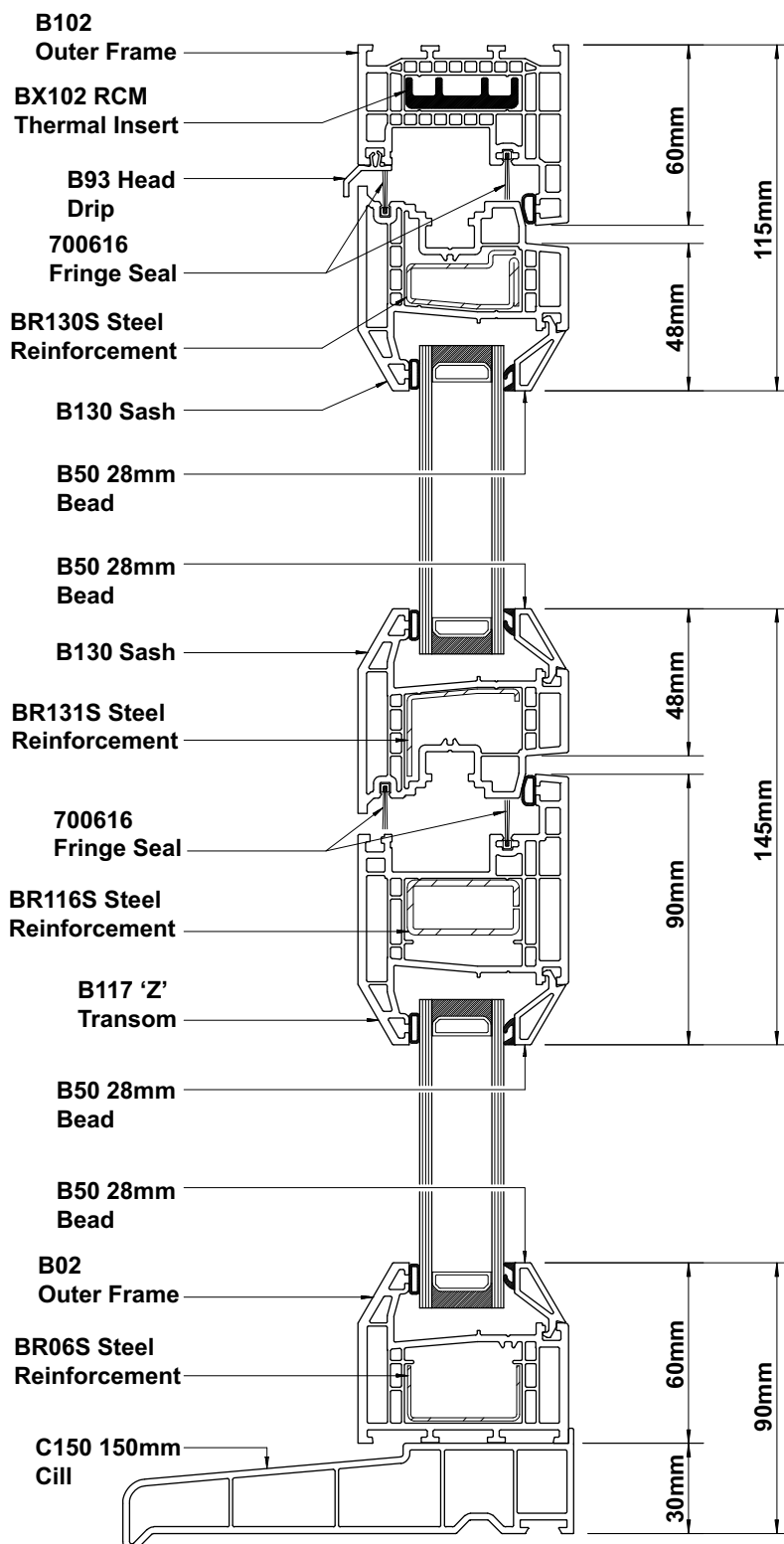
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	FULLY REVERSIBLE WINDOW

ELITE 70

Bevelled 70mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



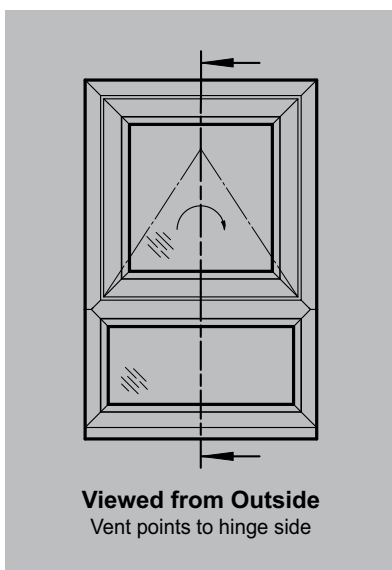
Bevelled 70mm Fully Reversible Window

Internal Glazing

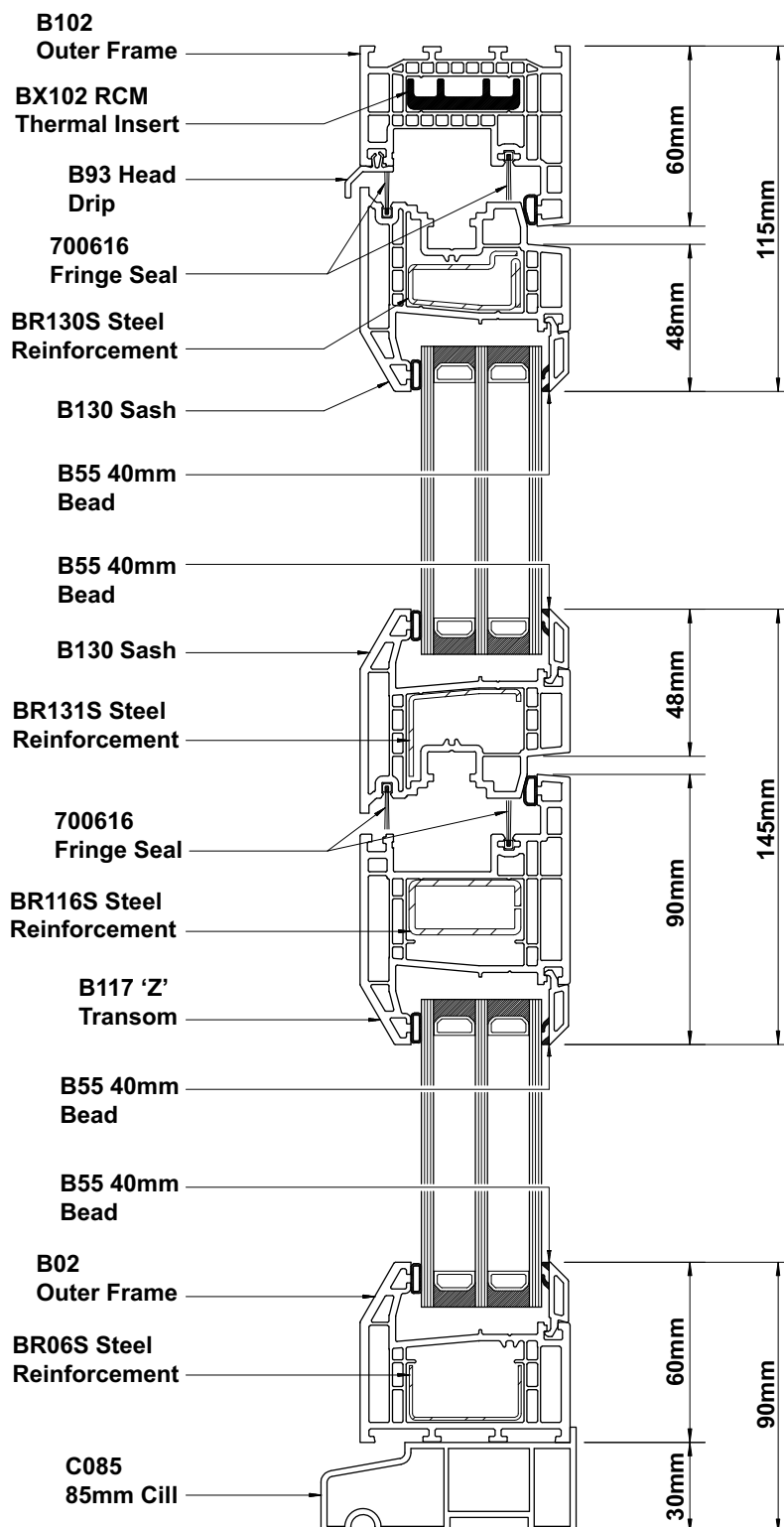
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	FULLY REVERSIBLE WINDOW

ELITE 70

Bevelled 70mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



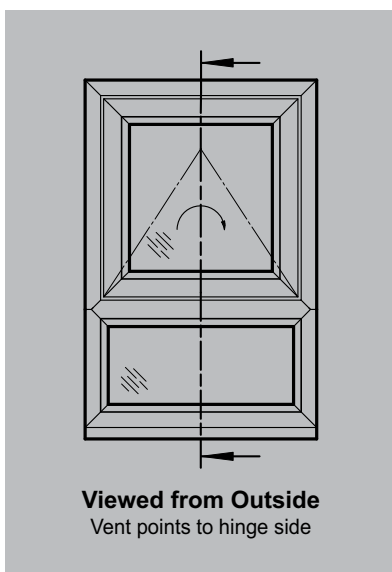
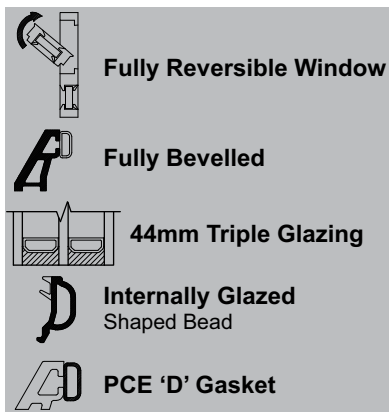
Bevelled 70mm Fully Reversible Window

Internal Glazing

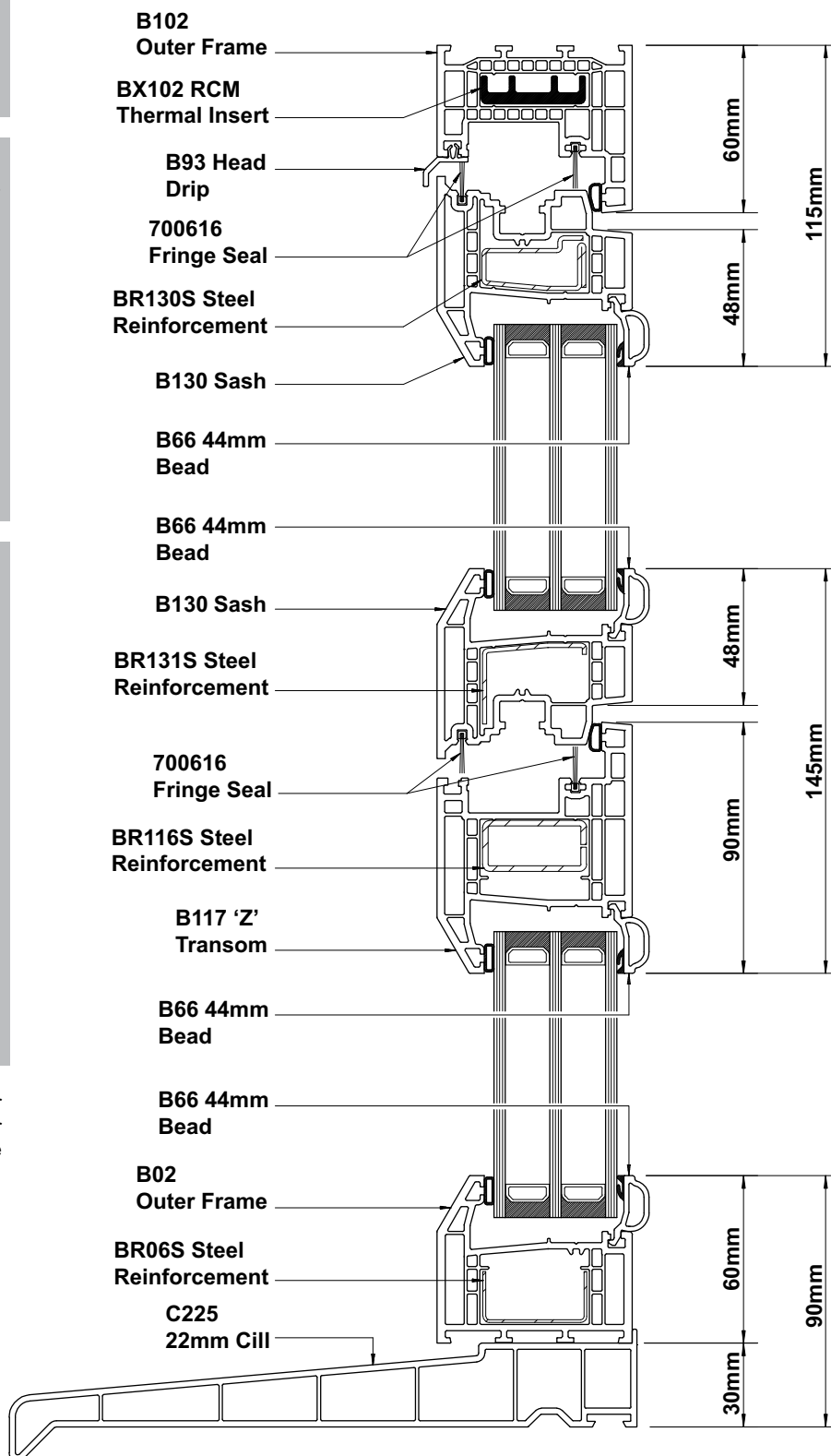
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	FULLY REVERSIBLE WINDOW

ELITE 70

Bevelled 70mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



Window Styles

Vertical Sliding Window



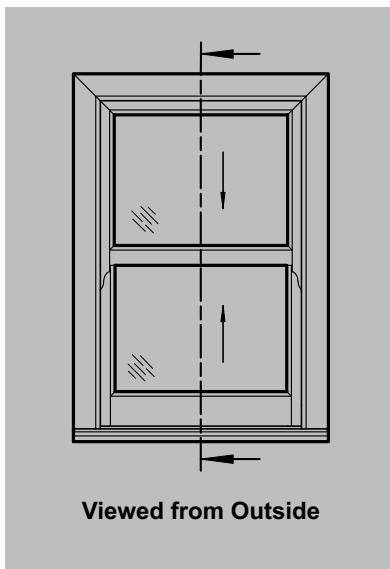
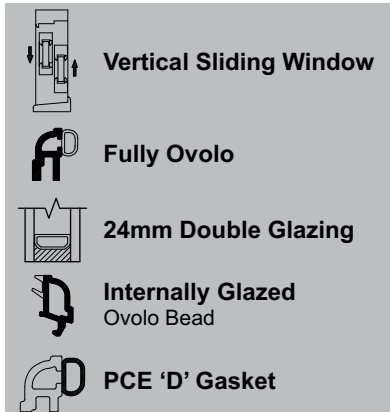
**Vertical
Slider**

Vertical Sliding Window

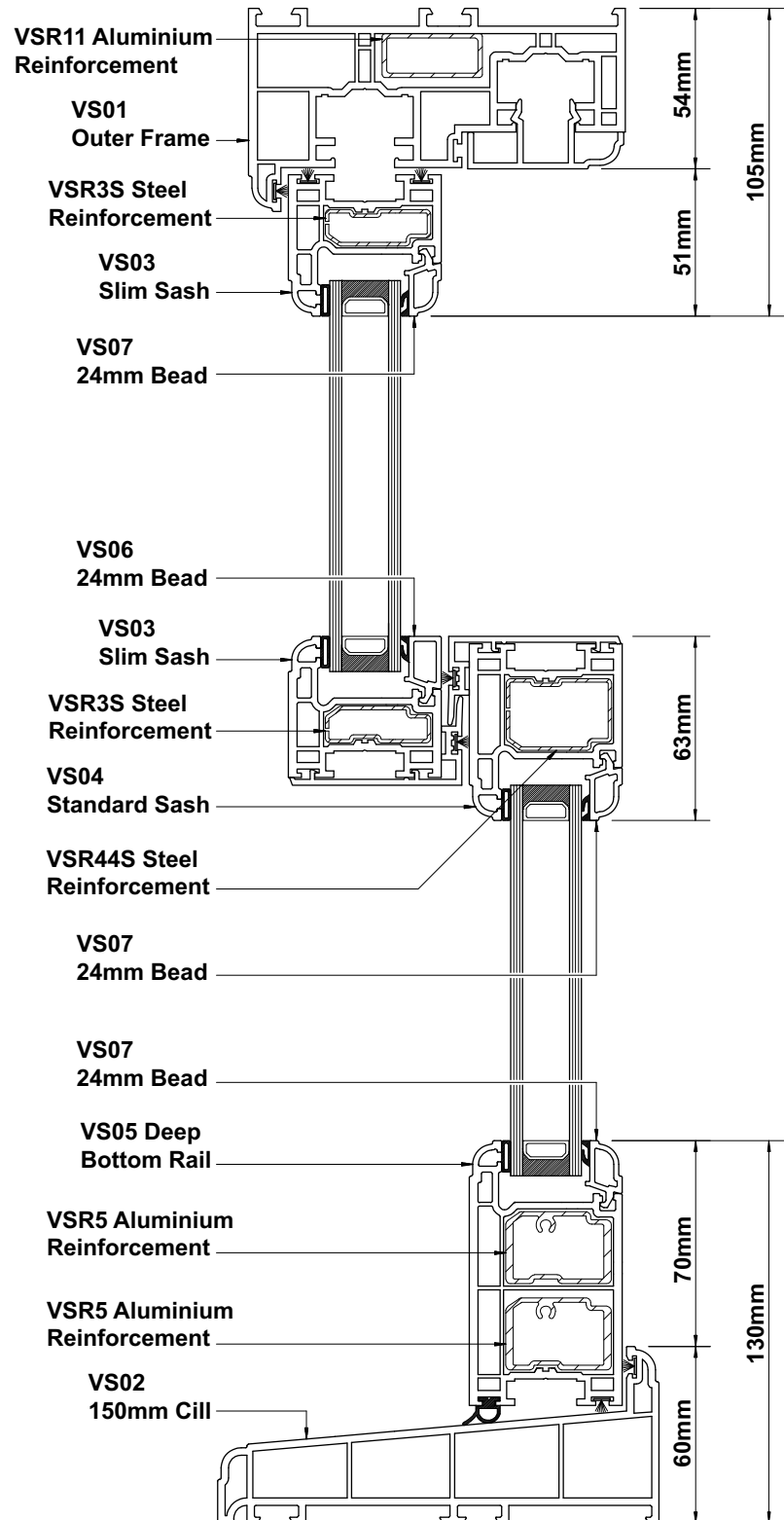
Internal Glazing

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	VERTICAL SLIDING WINDOW

Vertical Slider



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Vertical Slider Manual.

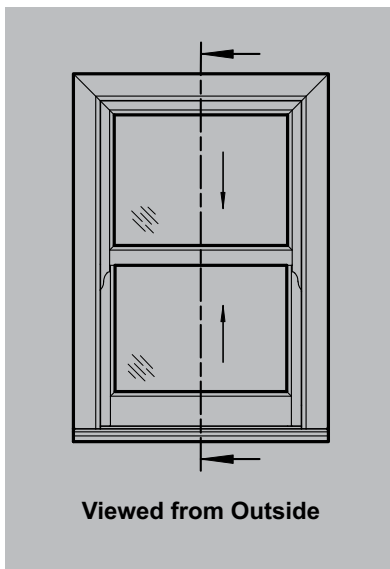
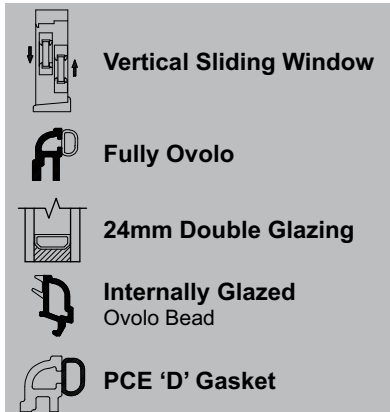


Vertical Sliding Window

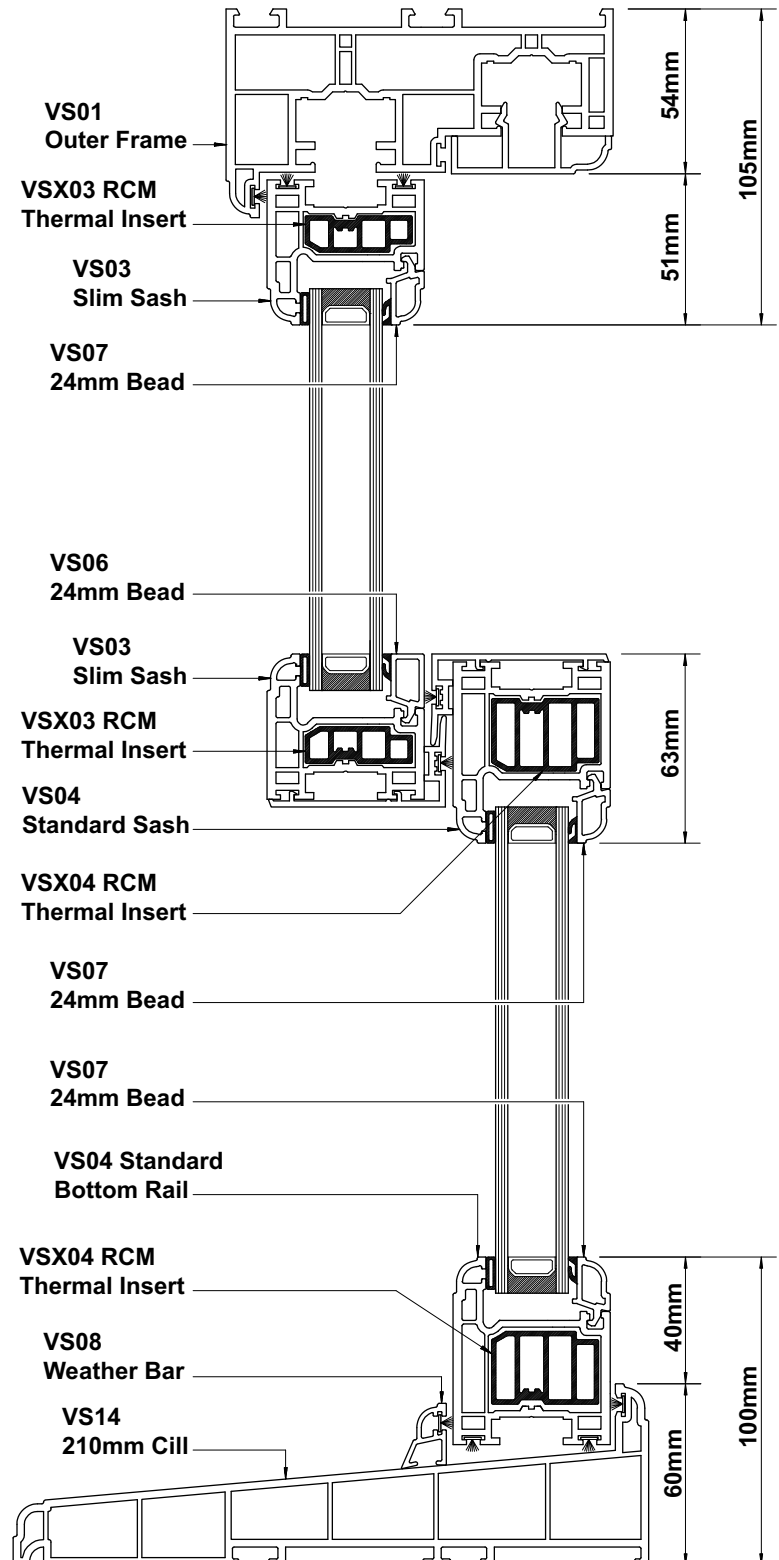
Internal Glazing

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	VERTICAL SLIDING WINDOW

Vertical Slider



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Vertical Slider Manual.



Door Styles Residential Doors



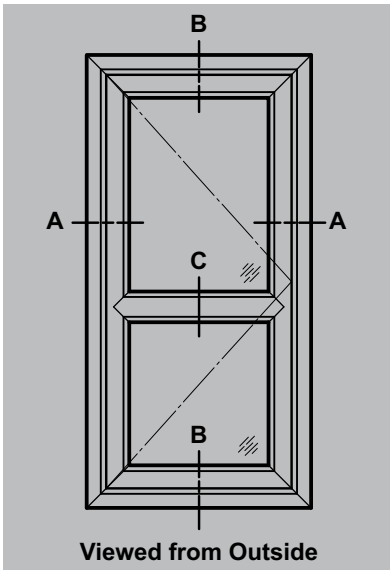
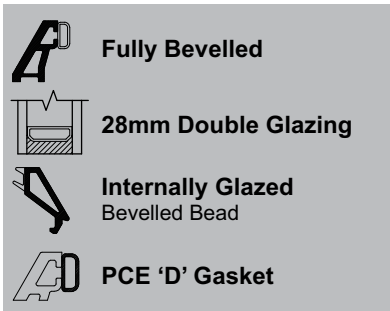
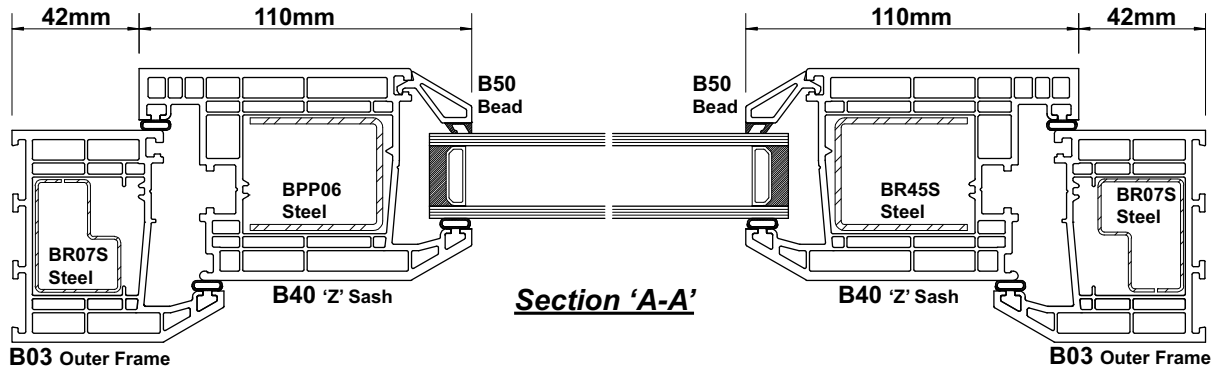
ELITE 70 

ELITE 63 

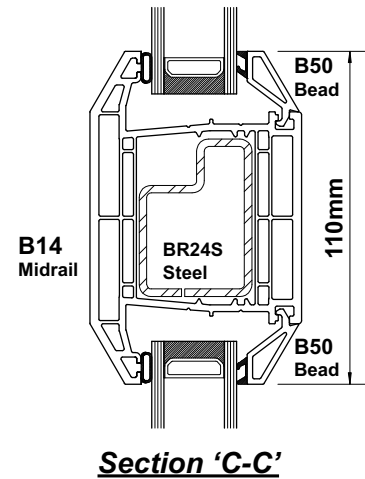
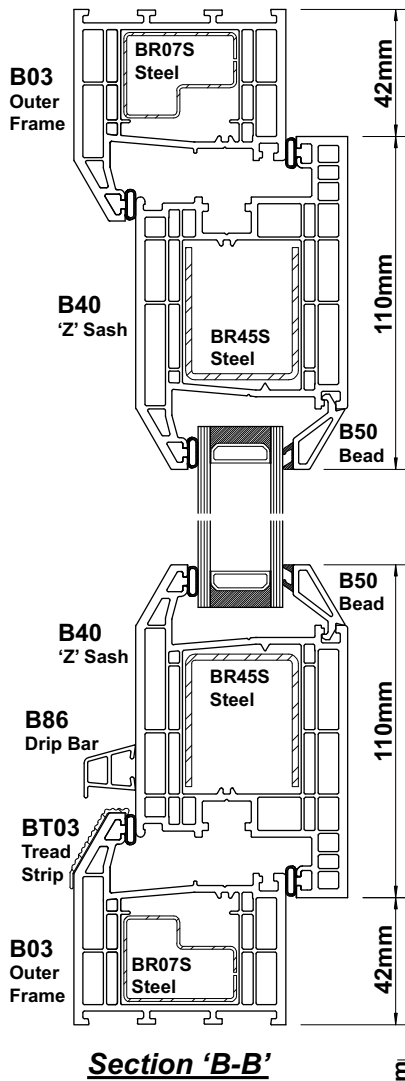
Bevelled 70mm Single Door (Open-in)

Internal Glazing

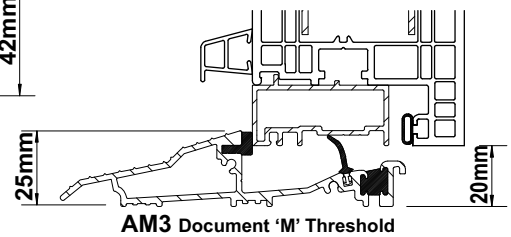
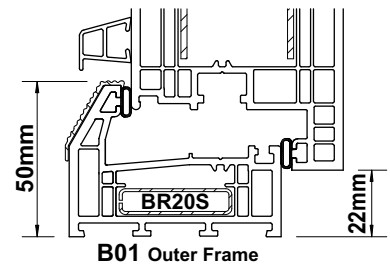
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	RESIDENTIAL DOOR



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.

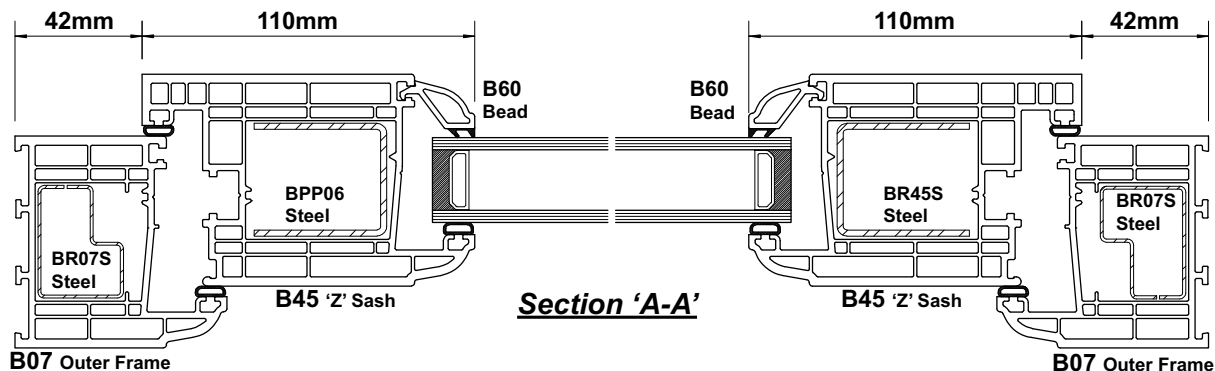


Threshold Options

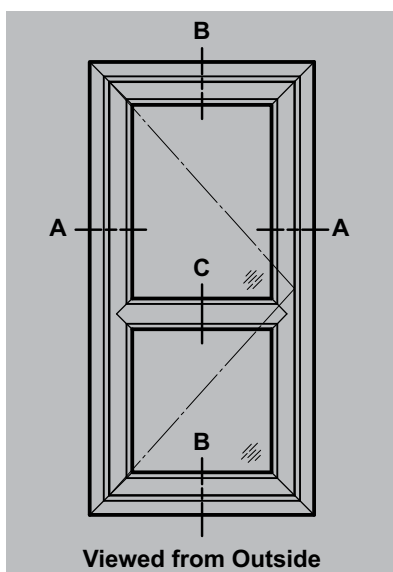
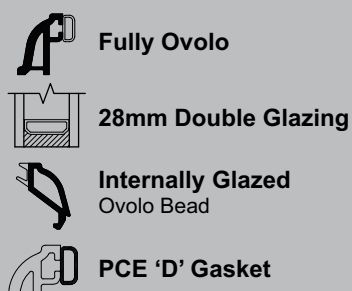


Ovolo 70mm Single Door (Open-in) Internal Glazing

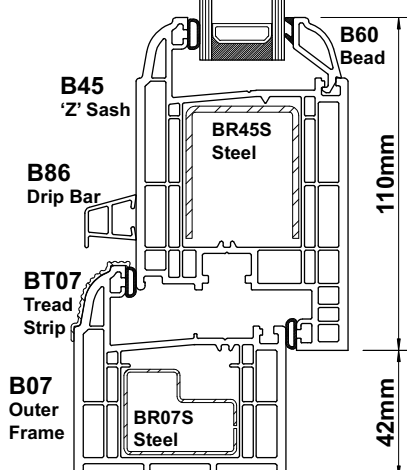
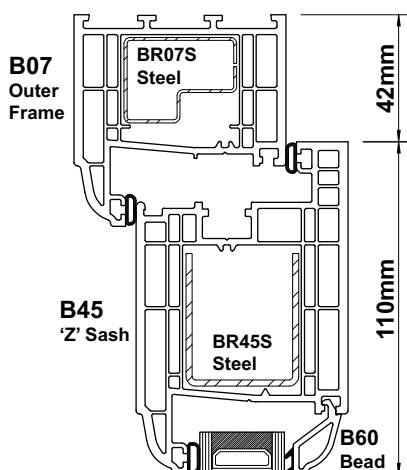
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	RESIDENTIAL DOOR



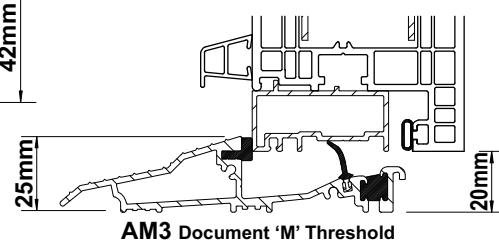
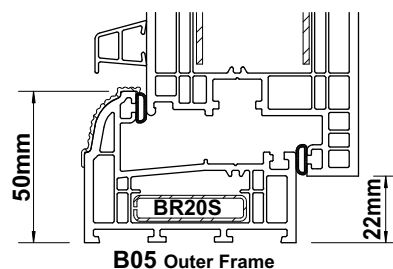
ELITE 70
Ovolo 70mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.

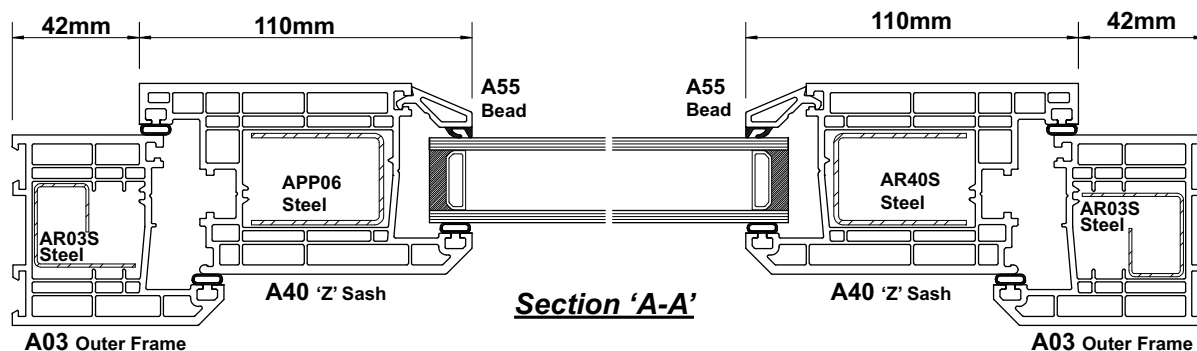


Threshold Options

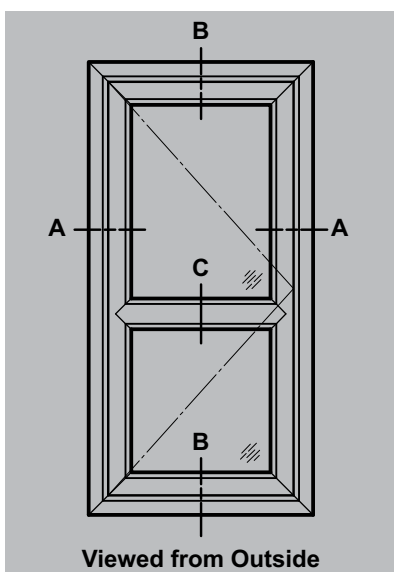
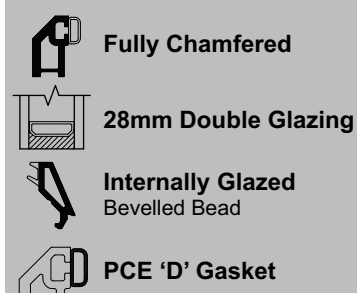


Chamfered 63mm Single Door (Open-in) Internal Glazing

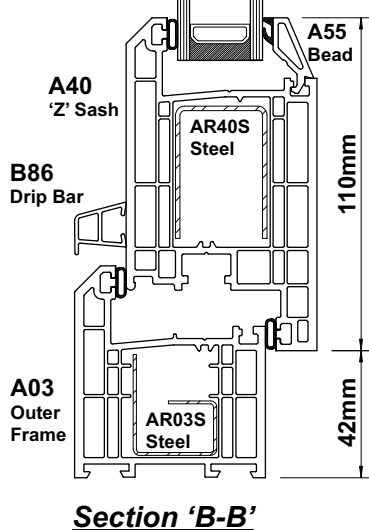
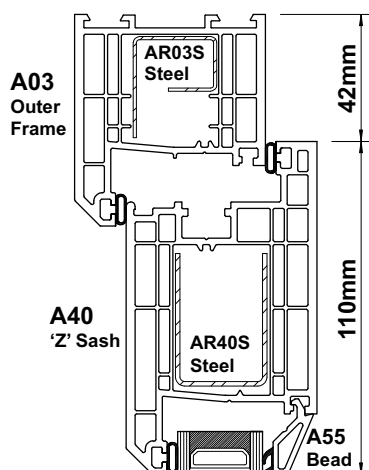
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	RESIDENTIAL DOOR



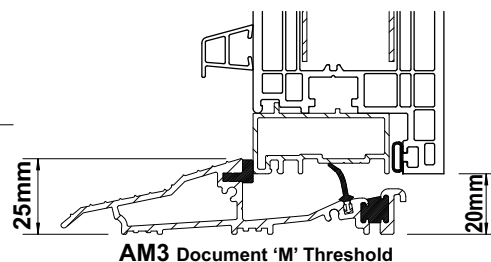
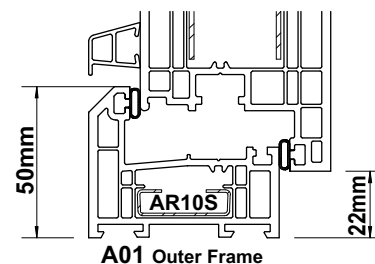
ELITE 63 Chamfered 63mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.



Threshold Options



Door Styles French Doors



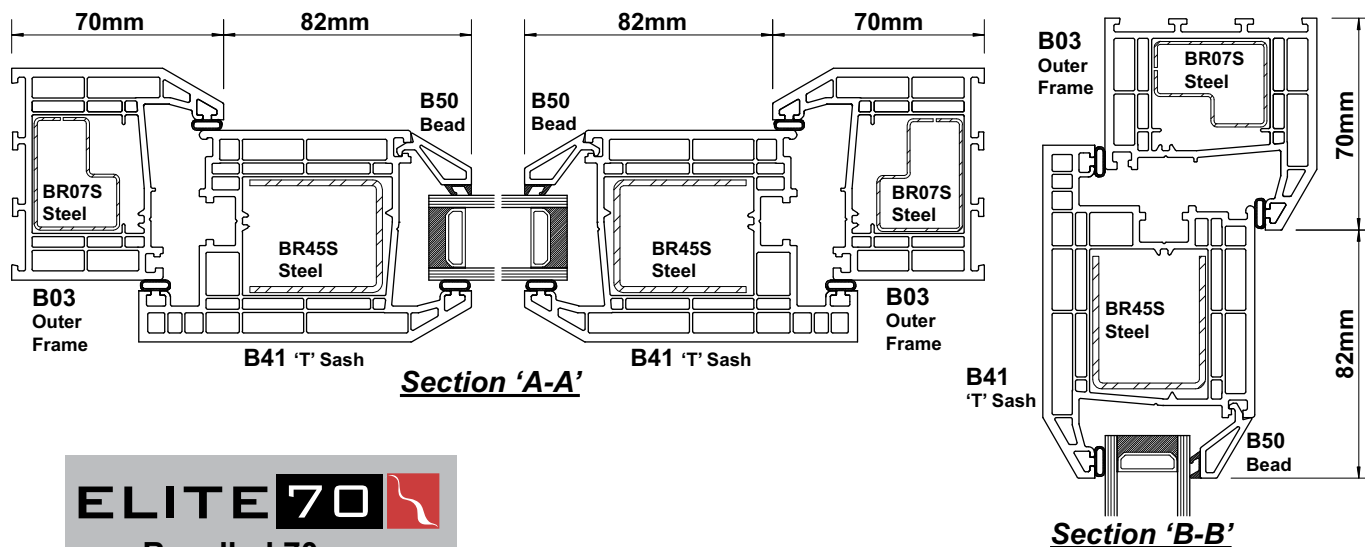
ELITE 70 

ELITE 63 

Bevelled 70mm French Door (Open-out)

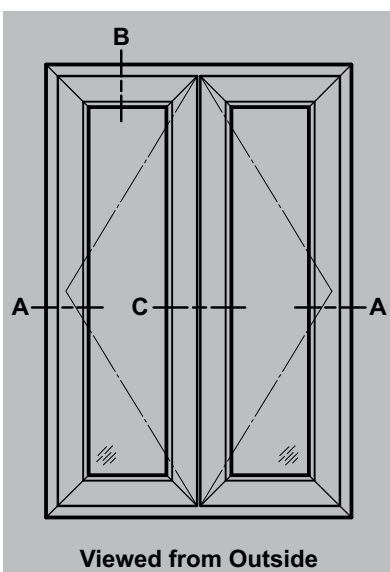
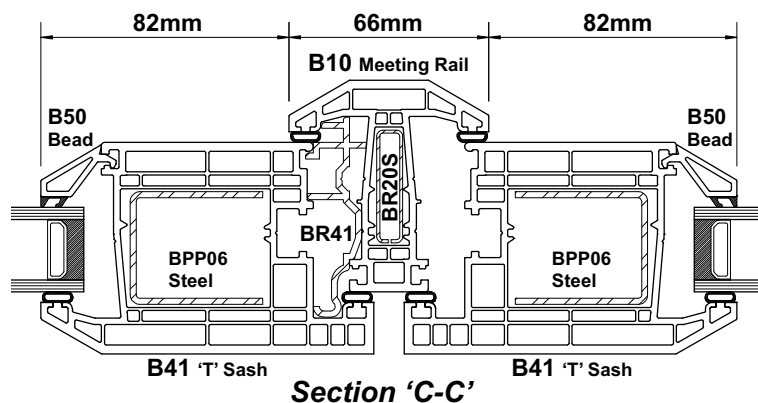
Internal Glazing

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	FRENCH DOOR



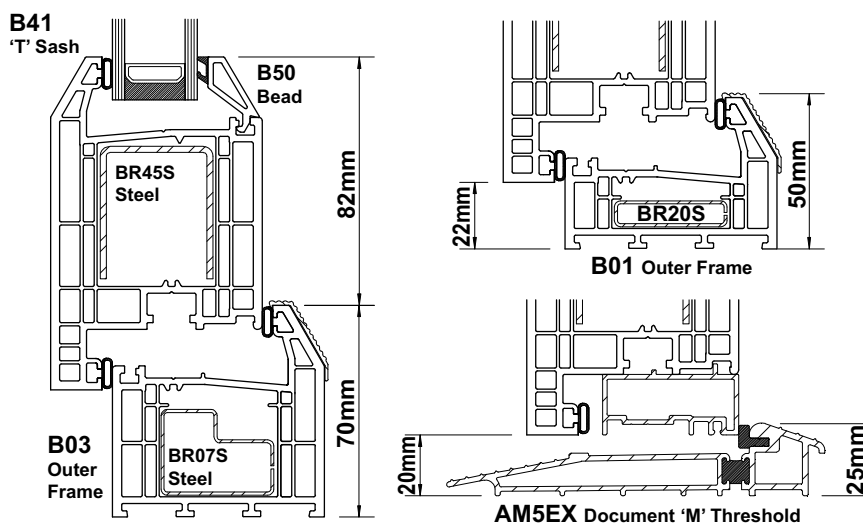
ELITE 70
Bevelled 70mm

-  Fully Bevelled
-  28mm Double Glazing
-  Internally Glazed Bevelled Bead
-  PCE 'D' Gasket



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.

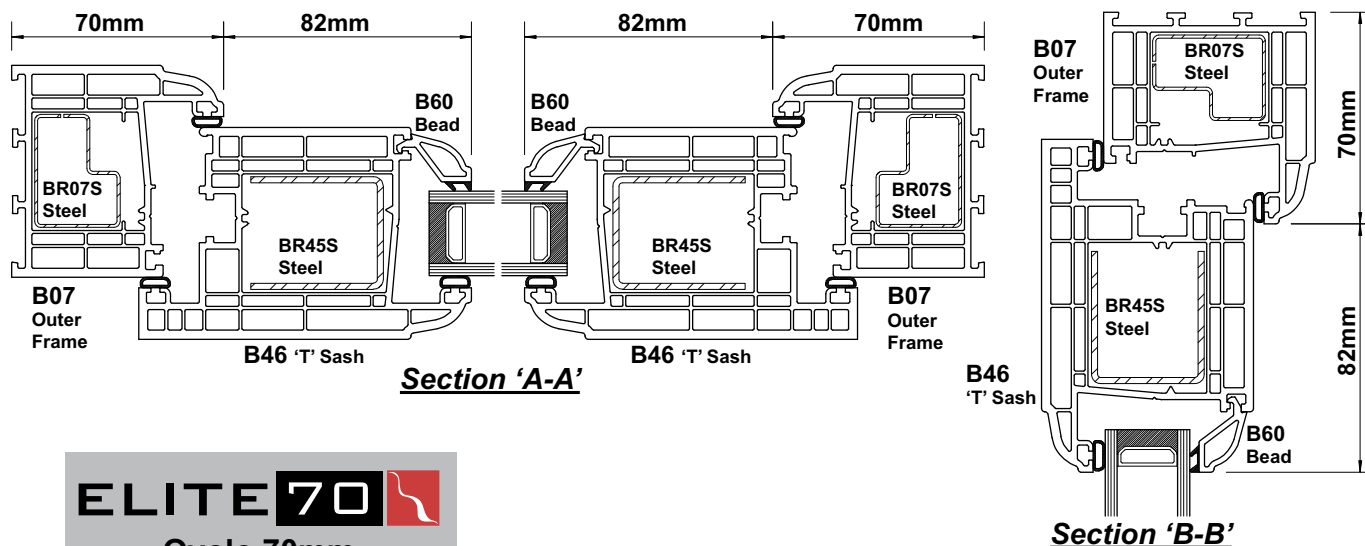
Threshold Options



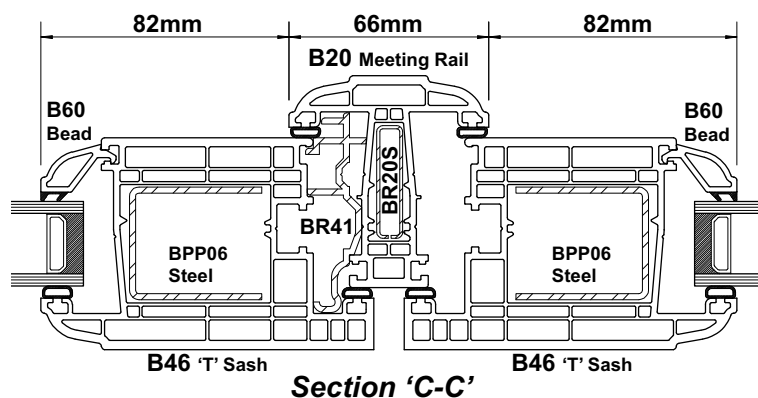
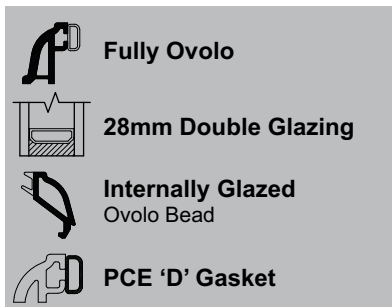
Ovolo 70mm French Door (Open-out)

Internal Glazing

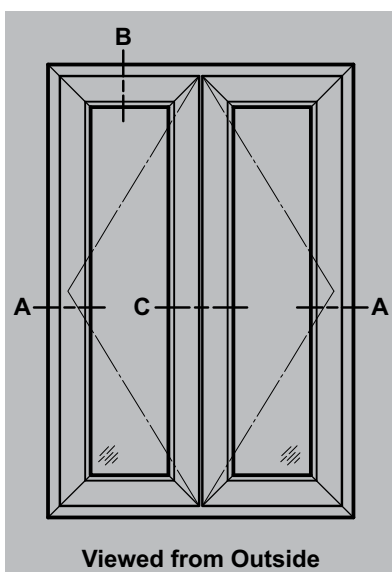
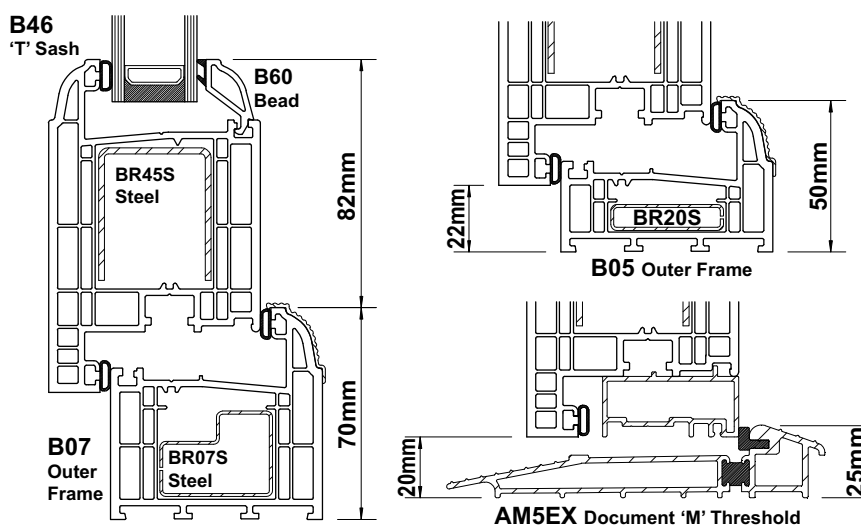
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	FRENCH DOOR



ELITE 70
Ovolo 70mm



Threshold Options

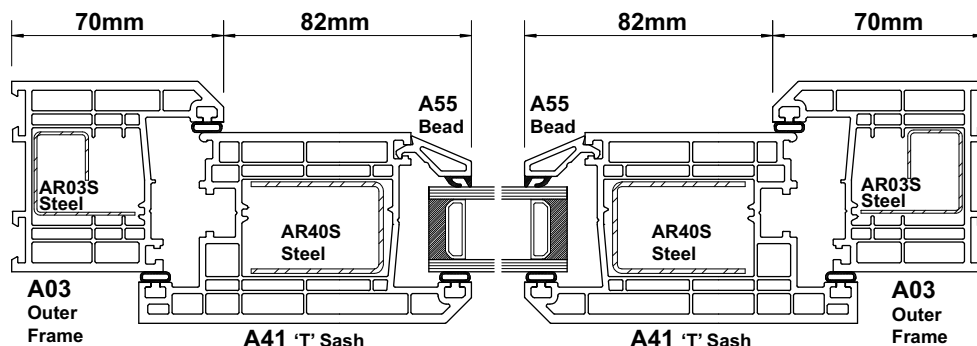


Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.

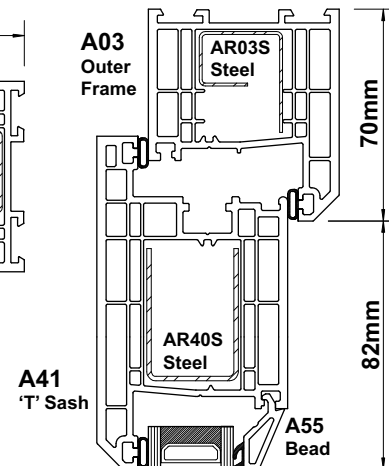
Chamfered 63mm French Door (Open-out)

Internal Glazing

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	FRENCH DOOR



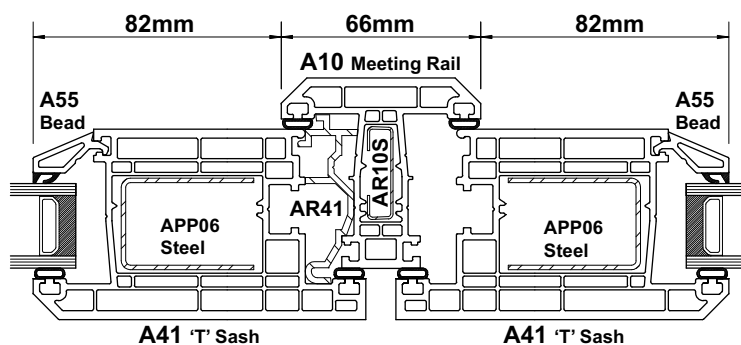
Section 'A-A'



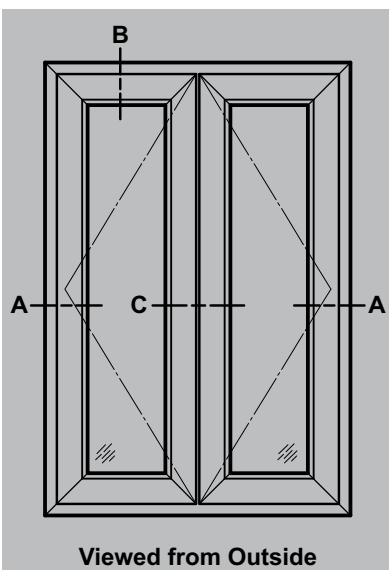
Section 'B-B'

ELITE 63
Chamfered 63mm

-  Fully Chamfered
-  28mm Double Glazing
-  Internally Glazed Bevelled Bead
-  PCE 'D' Gasket



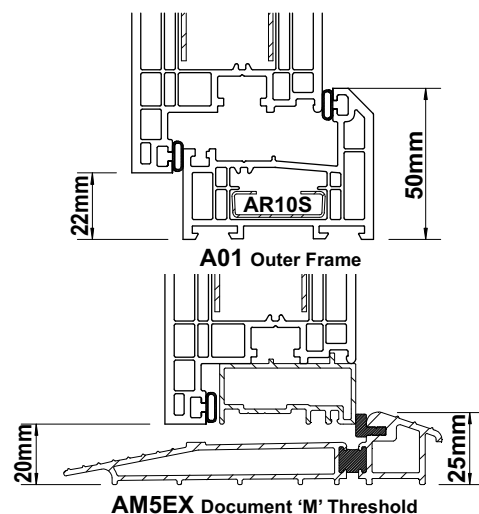
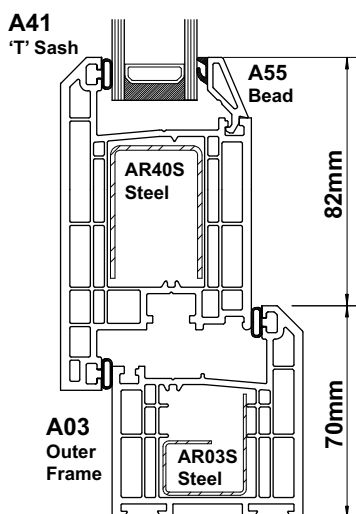
Section 'C-C'



Viewed from Outside

Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.

Threshold Options



Door Styles Side Screens



ELITE 70 

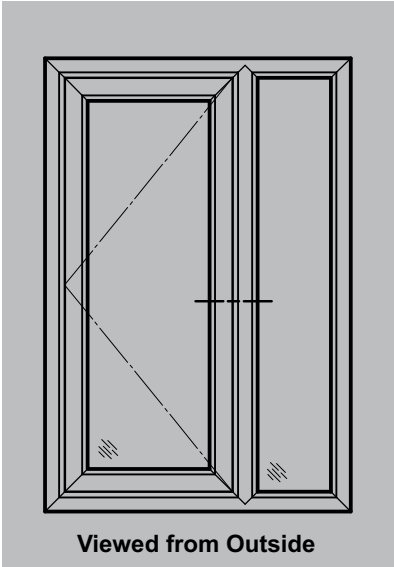
ELITE 63 

Doors with Side Screens (Open-in)

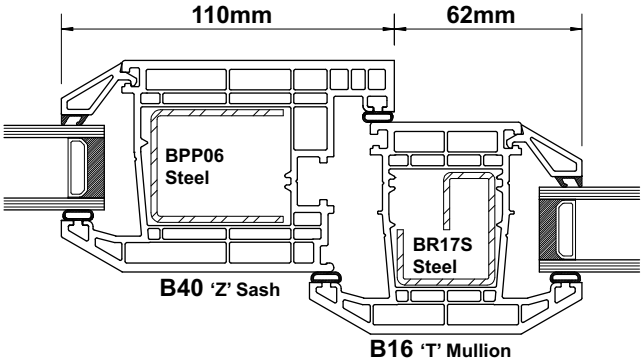
Single Frame (not coupled)

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	DOORS WITH SIDE SCREENS

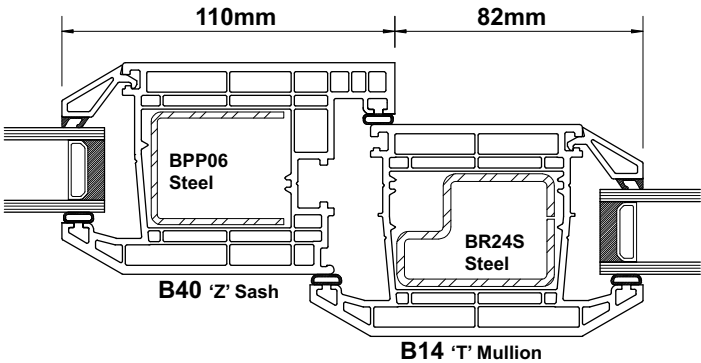
ELITE 70



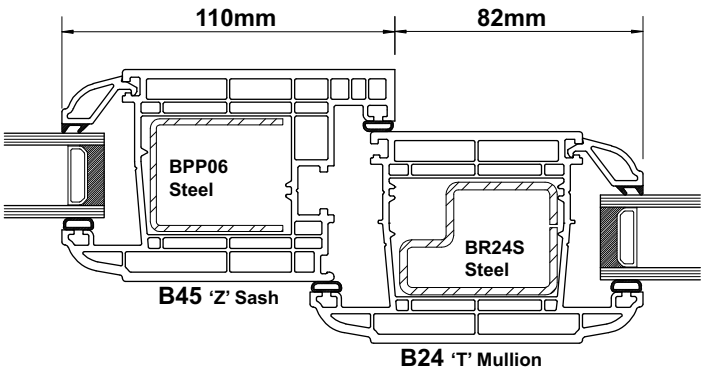
Note: All reinforcements are shown for diagramatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



Elite 70 Bevelled (90mm Mullion)



Elite 70 Bevelled (110mm Mullion)



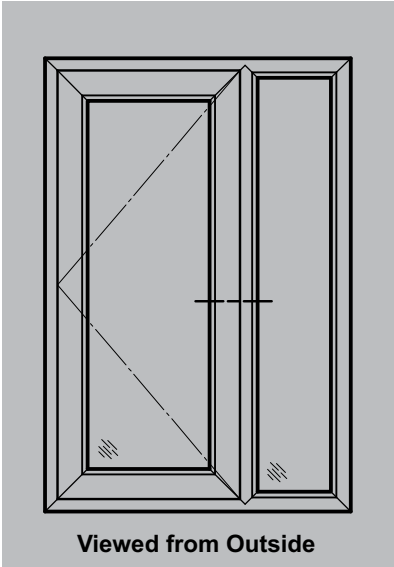
Elite 70 Ovolo (110mm Mullion)

Doors with Side Screens (Open-out)

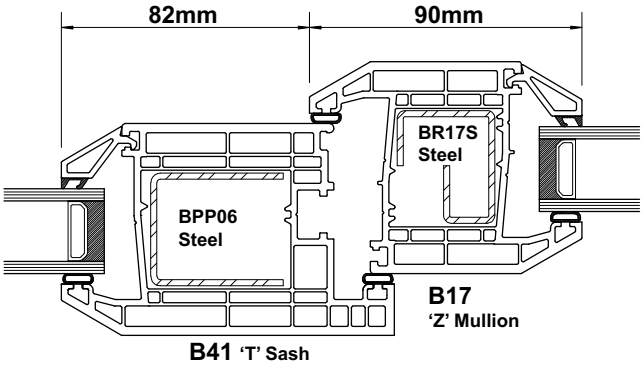
Single Frame (not coupled)

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	DOORS WITH SIDE SCREENS

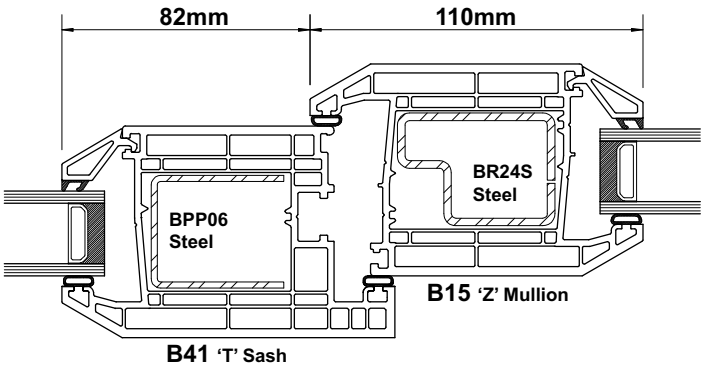
ELITE 70



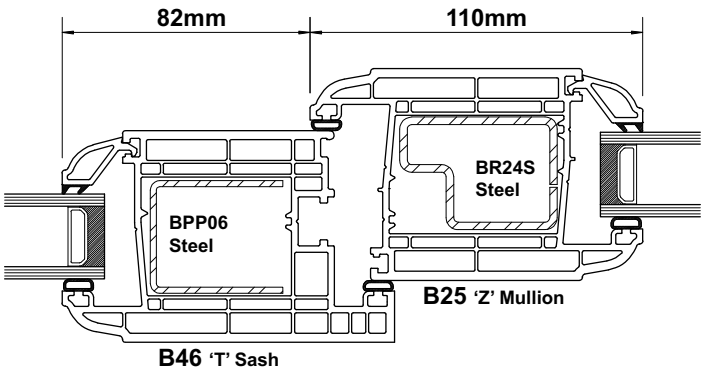
Note: All reinforcements are shown for diagramatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



Elite 70 Bevelled (90mm Mullion)



Elite 70 Bevelled (110mm Mullion)



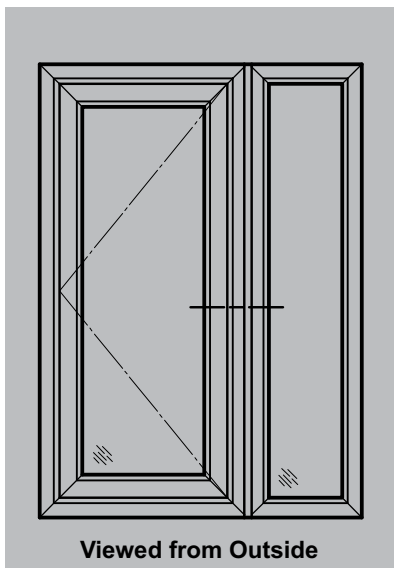
Elite 70 Ovolo (110mm Mullion)

Doors with Side Screens

Coupled

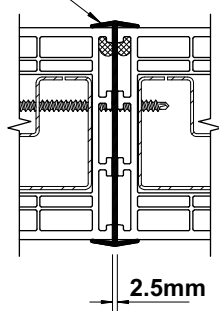
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	DOORS WITH SIDE SCREENS

ELITE 70



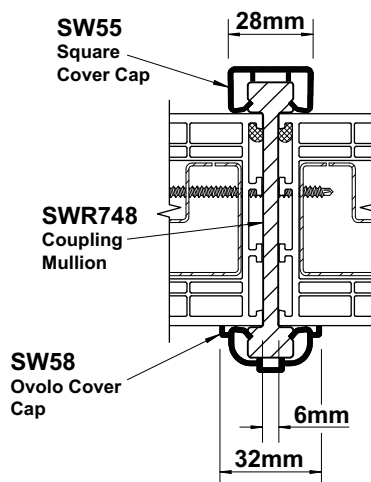
Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.

SW754
'H' Coupling

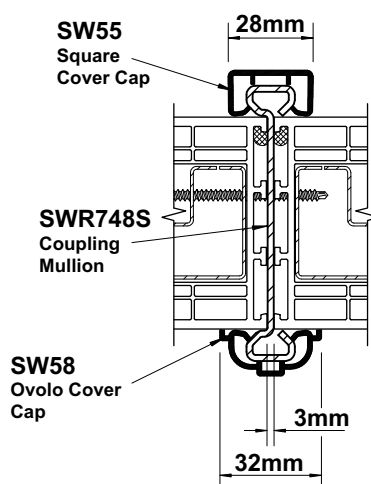


Elite 70 PVC-U Coupling Mullion

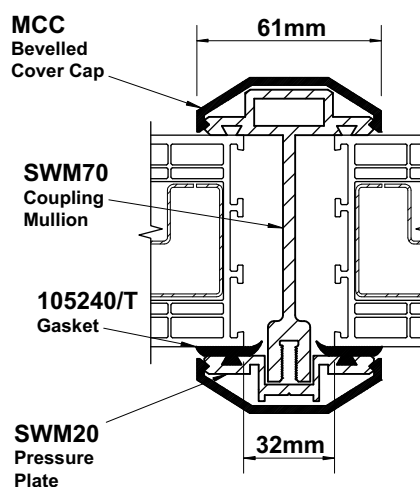
***NOT RECOMMENDED FOR
FULL HEIGHT FRAMES,
FOR FLAG LIGHTS ONLY***



Elite 70 Aluminium Coupling Mullion



Elite 70 Steel Coupling Mullion



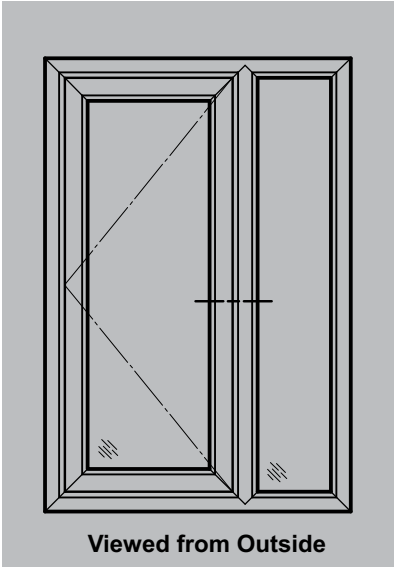
Elite 70 Aluminium Expansion Mullion

Doors with Side Screens

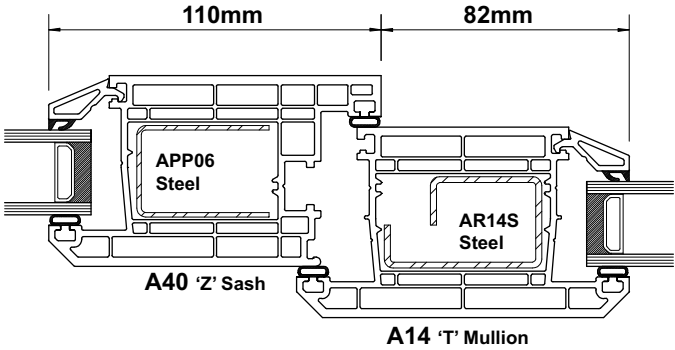
Single Frame (not coupled)

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	DOORS WITH SIDE SCREENS

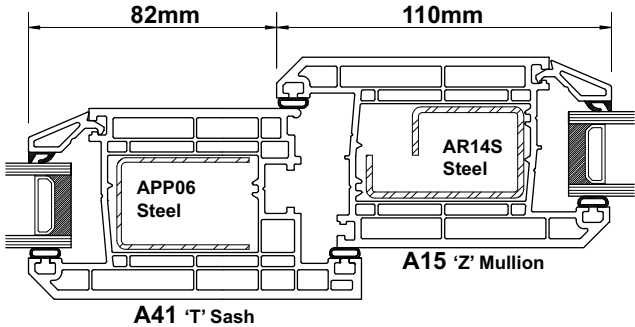
ELITE 63



Note: All reinforcements are shown for diagramatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.



Elite 63 Open-in (110mm Mullion)

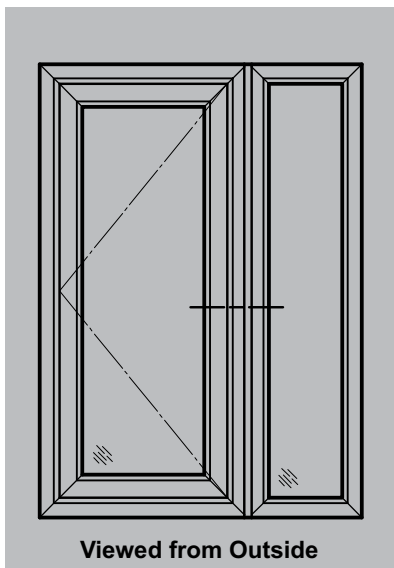


Elite 63 Open-out (110mm Mullion)

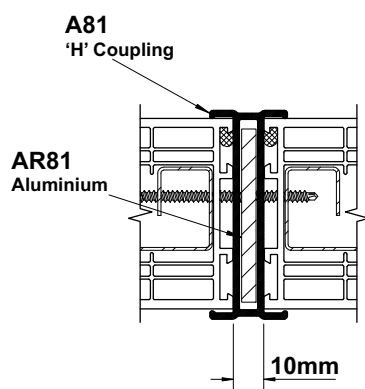
Doors with Side Screens Coupled

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	DOORS WITH SIDE SCREENS

ELITE 63

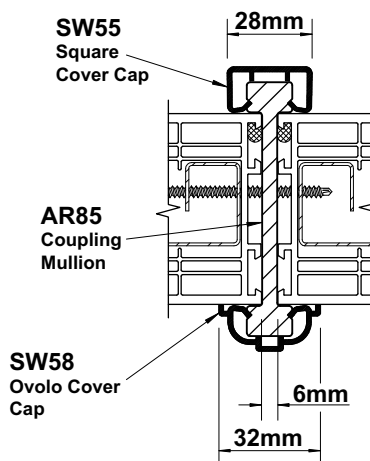


Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.

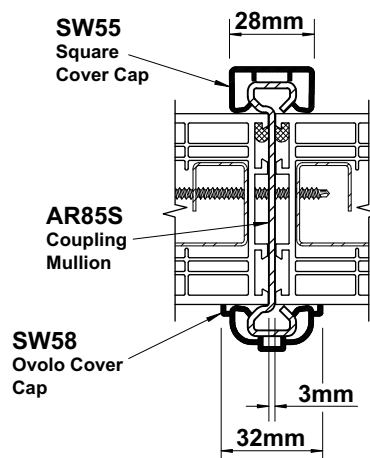


Elite 63 PVC-U Coupling Mullion

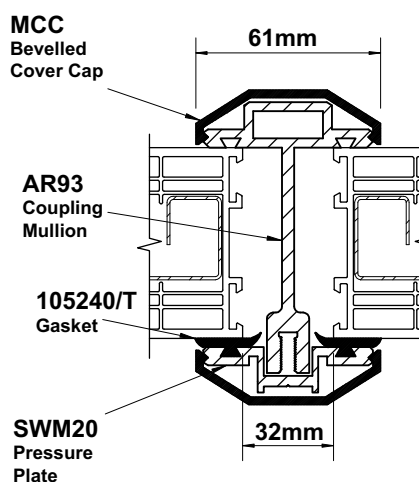
***NOT RECOMMENDED FOR
FULL HEIGHT FRAMES,
FOR FLAG LIGHTS ONLY***



Elite 63 Aluminium Coupling Mullion

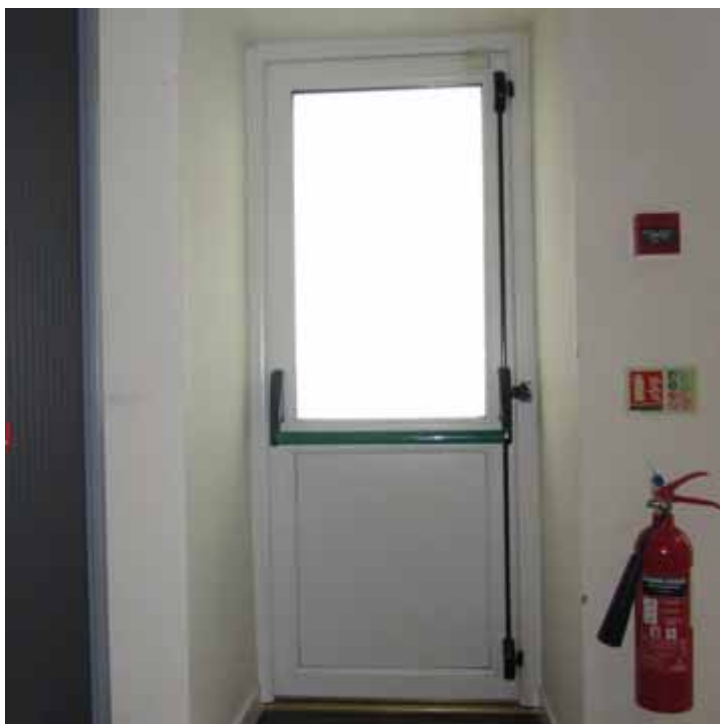


Elite 63 Steel Coupling Mullion



Elite 63 Aluminium Expansion Mullion

Door Styles Emergency Exit Doors



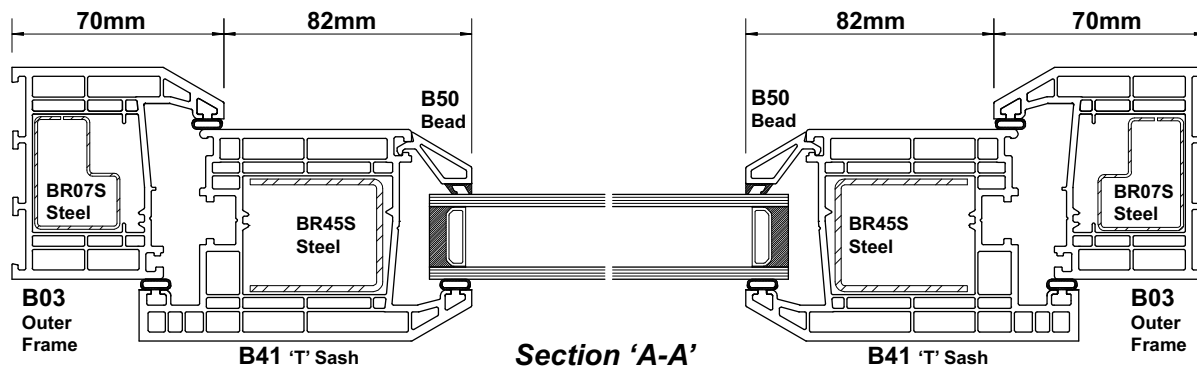
ELITE 70 

ELITE 63 

Bevelled 70mm Emergency Exit Door (Open-out)

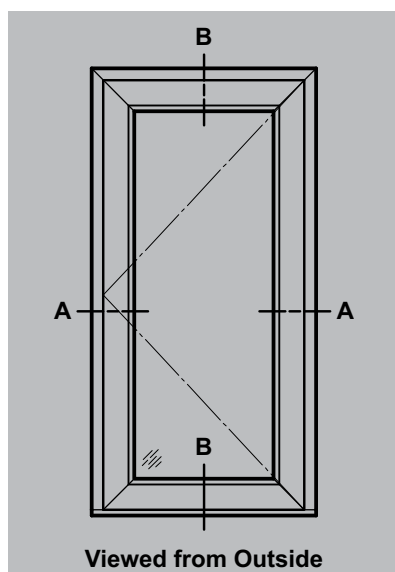
Internal Glazing

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	EMERGENCY EXIT DOOR

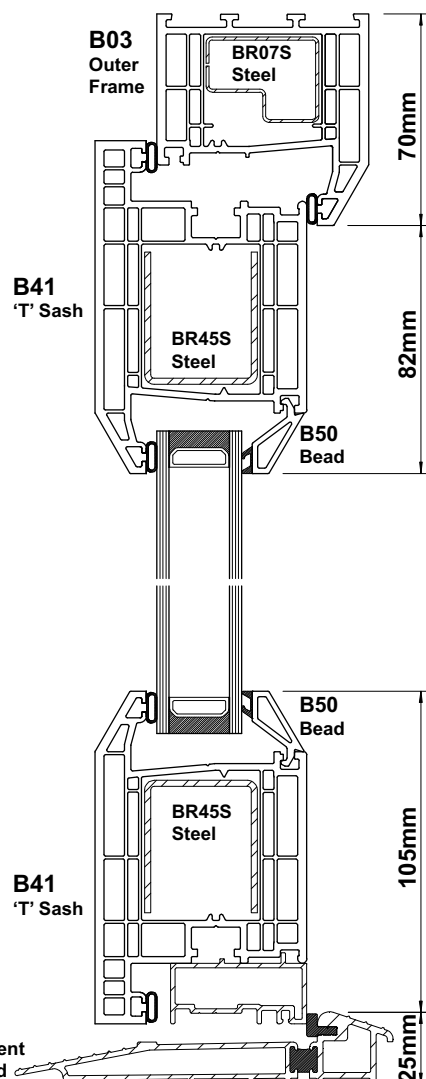


ELITE 70
Bevelled 70mm

-  Fully Bevelled
-  28mm Double Glazing
-  Internally Glazed Bevelled Bead
-  PCE 'D' Gasket



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.

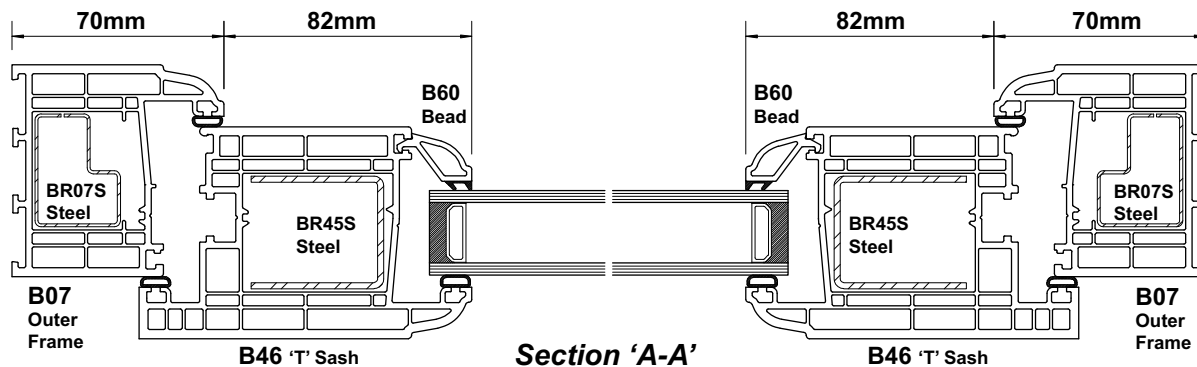


Section 'B-B'

Ovolo 70mm Emergency Exit Door (Open-out)

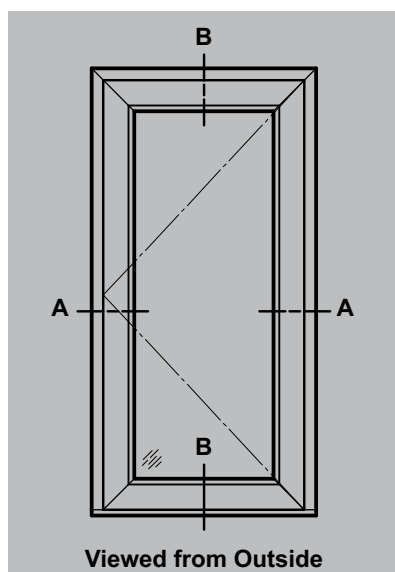
Internal Glazing

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	EMERGENCY EXIT DOOR

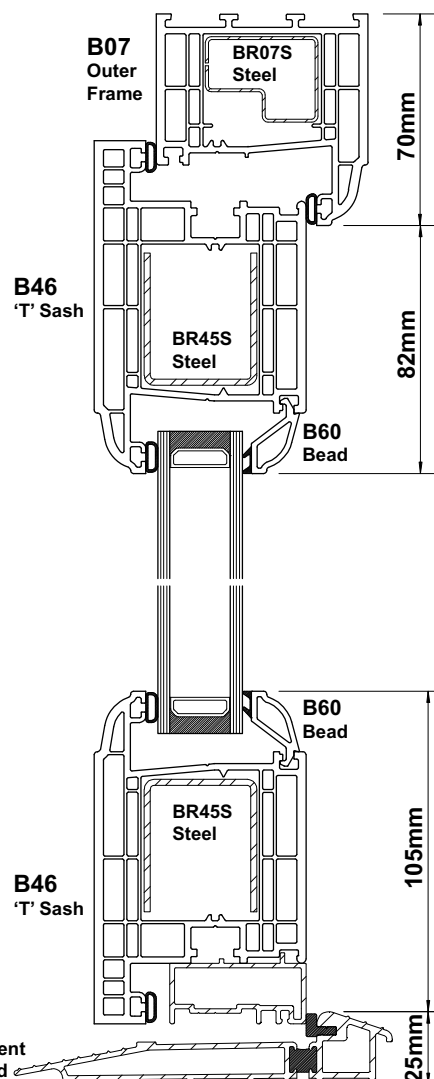


ELITE 70
Ovolo 70mm

-  Fully Ovolo
-  28mm Double Glazing
-  Internally Glazed
Ovolo Bead
-  PCE 'D' Gasket

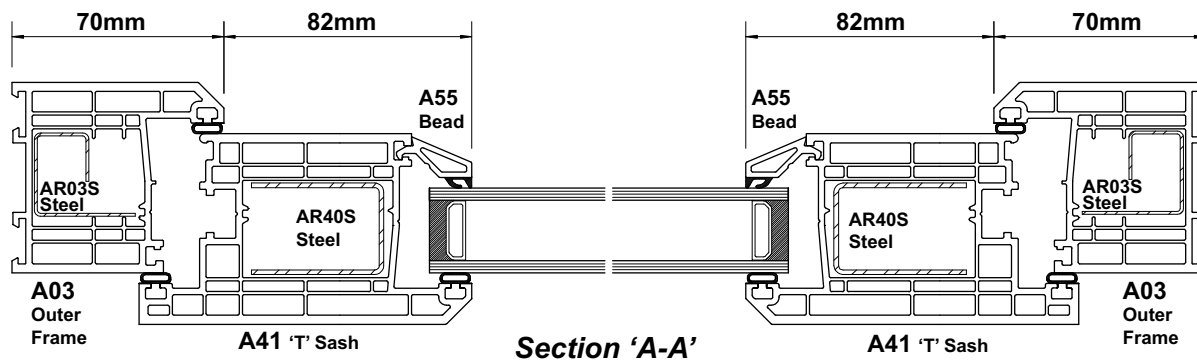


Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.

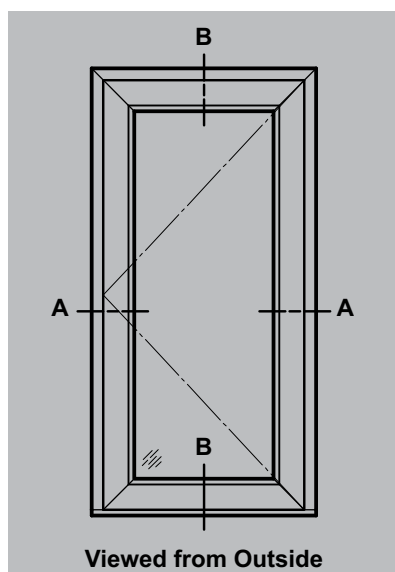
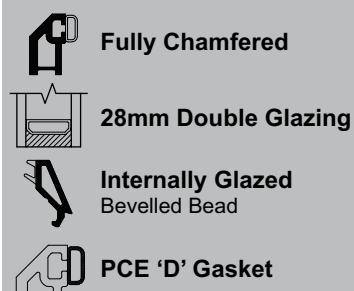


Chamfered 63mm Emergency Exit Door (Open-out) Internal Glazing

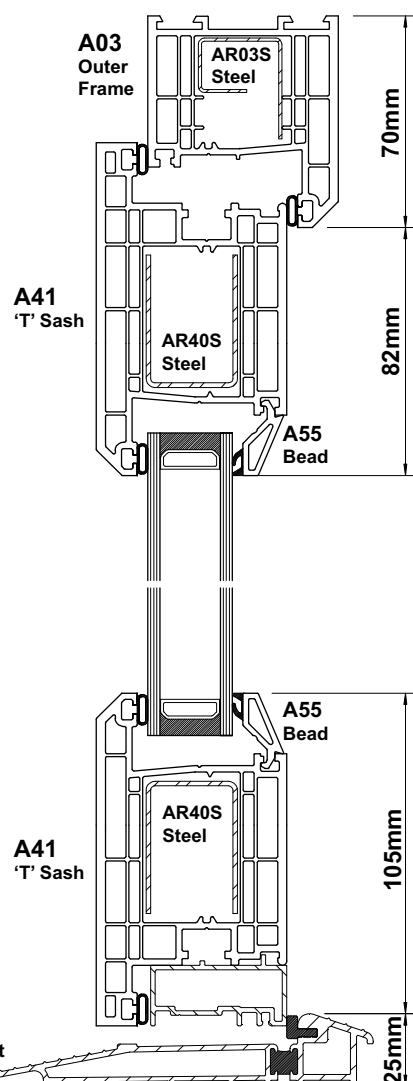
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	EMERGENCY EXIT DOOR



ELITE 63 Chamfered 63mm



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.



Door Styles Bi-Folding Doors



ELITE 70 

ELITE 63 

Bevelled 70mm Bi-Folding Door (Open-in)

Internal Glazing - Vertical Section

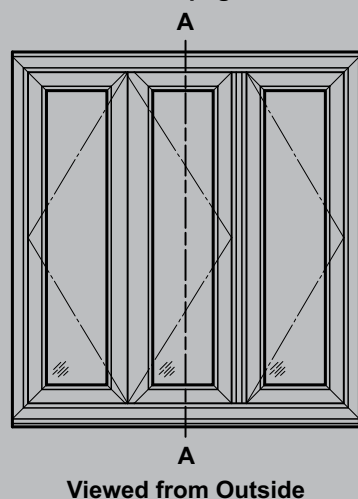
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	BI-FOLDING DOOR

ELITE 70

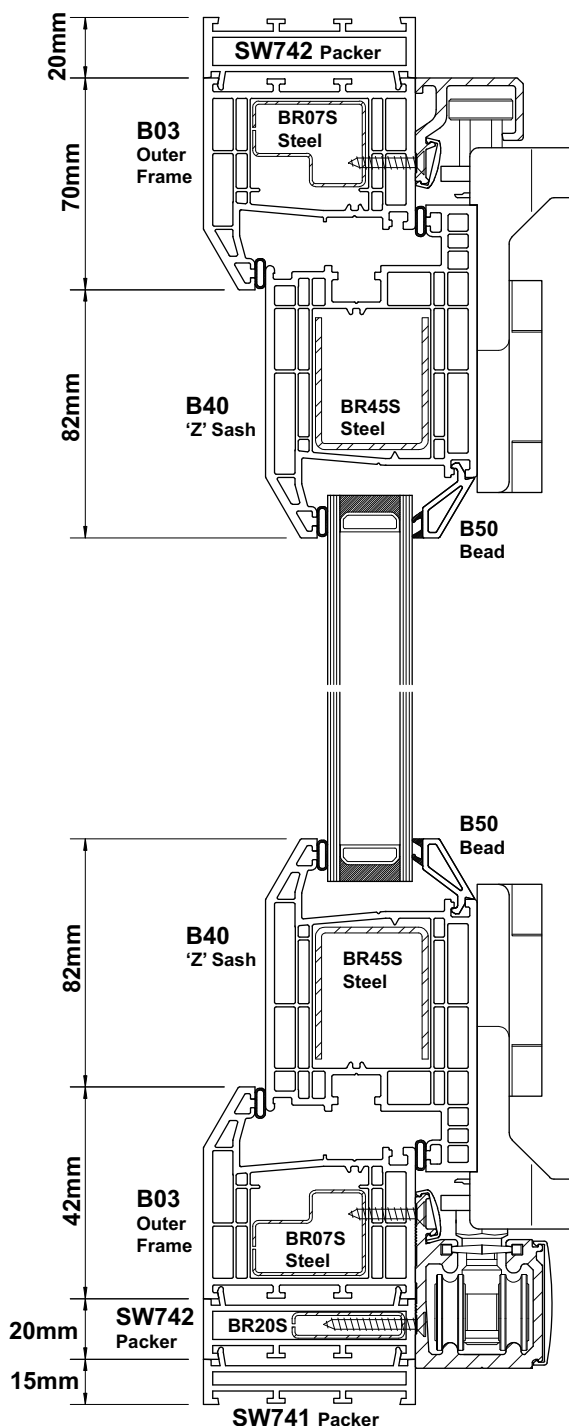
Bevelled 70mm

-  Fully Bevelled
-  28mm Double Glazing
-  Internally Glazed Bevelled Bead
-  PCE 'D' Gasket

Scheme 321 shown, all options are shown on pages 65 & 66



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



Section 'A-A'

Bevelled 70mm Bi-Folding Door (Open-in)

Internal Glazing - Horizontal Section

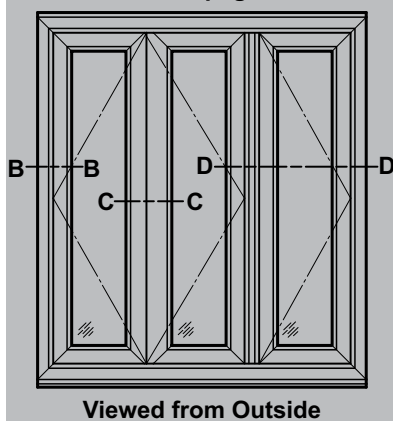
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	BI-FOLDING DOOR

ELITE 70

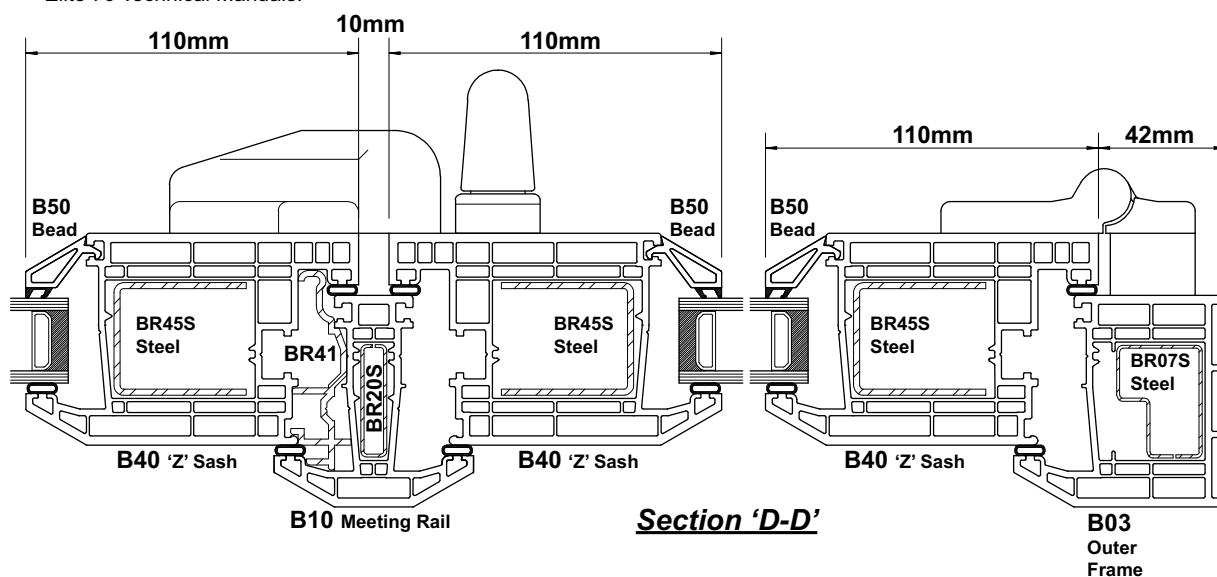
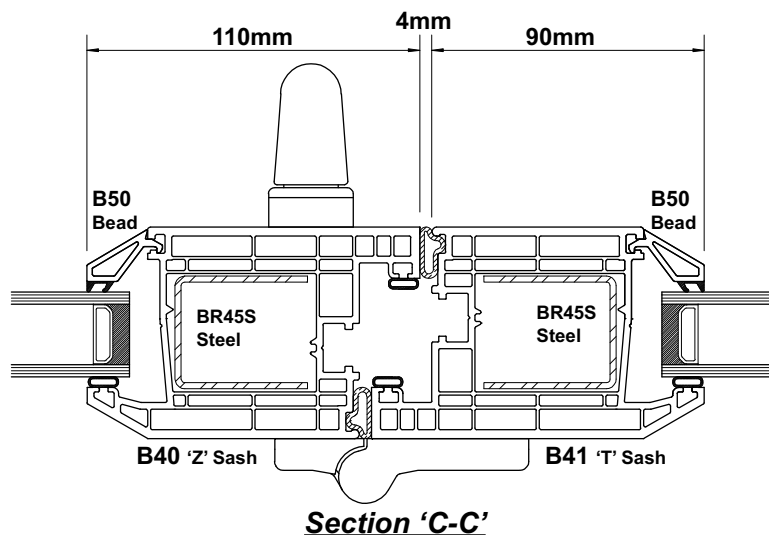
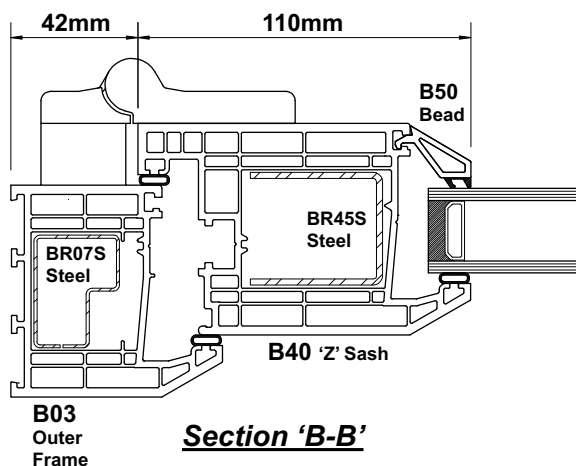
Bevelled 70mm

-  Fully Bevelled
-  28mm Double Glazing
-  Internally Glazed Bevelled Bead
-  PCE 'D' Gasket

Scheme 321 shown, all options are shown on pages 65 & 66



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



Ovolo 70mm Bi-Folding Door (Open-out)

Internal Glazing - Vertical Section

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	BI-FOLDING DOOR

ELITE 70

Ovolo 70mm



Fully Ovolo



28mm Double Glazing

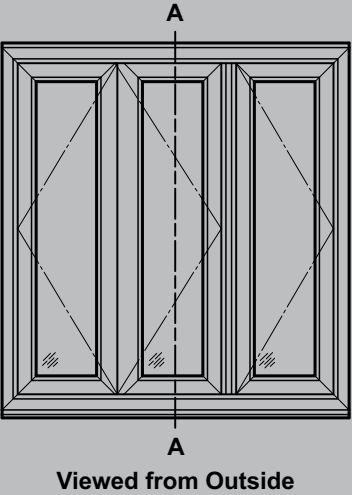


Internally Glazed
Ovolo Bead

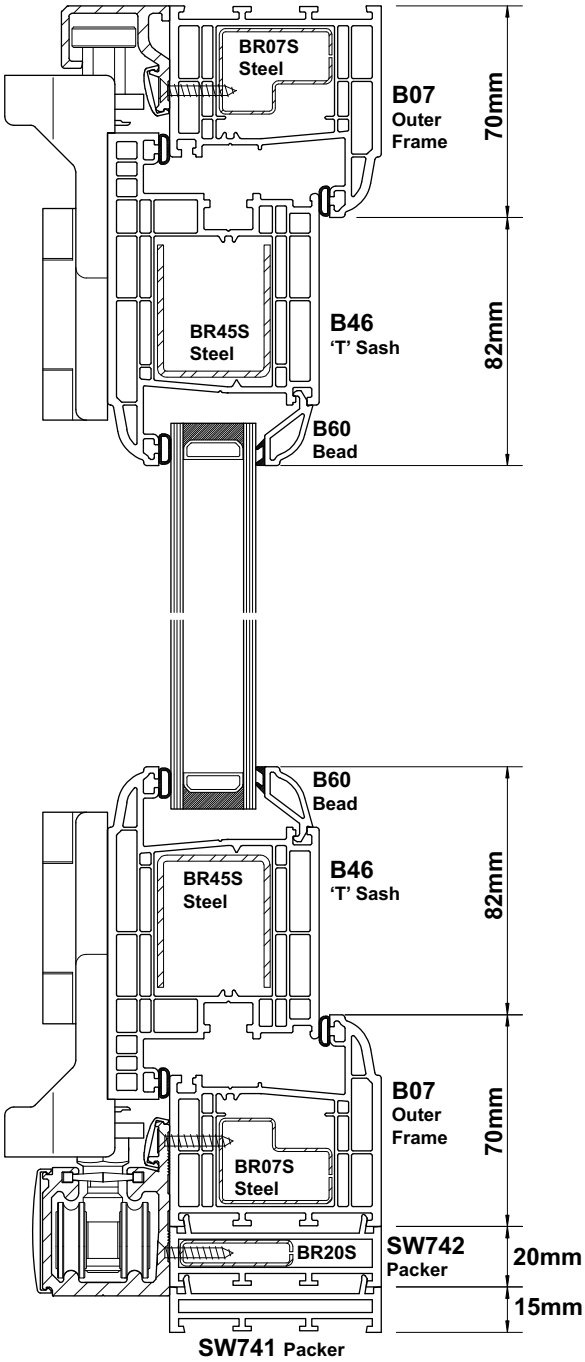


PCE 'D' Gasket

Scheme 321 shown, all options are shown on pages 65 & 66



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



Section 'A-A'

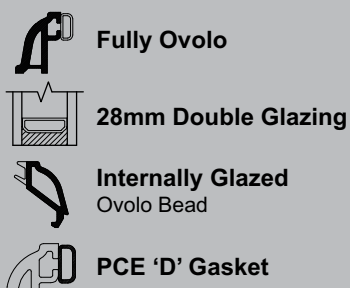
Ovolo 70mm Bi-Folding Door (Open-out)

Internal Glazing - Horizontal Section

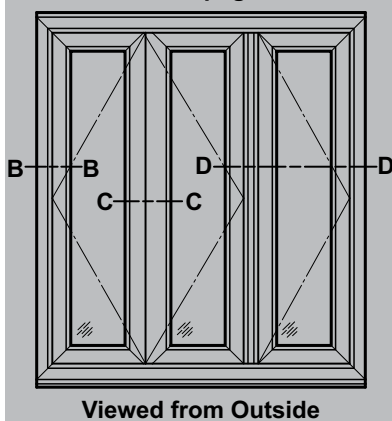
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	BI-FOLDING DOOR

ELITE 70

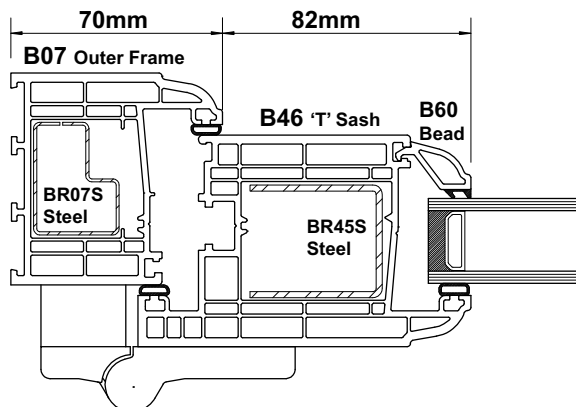
Ovolo 70mm



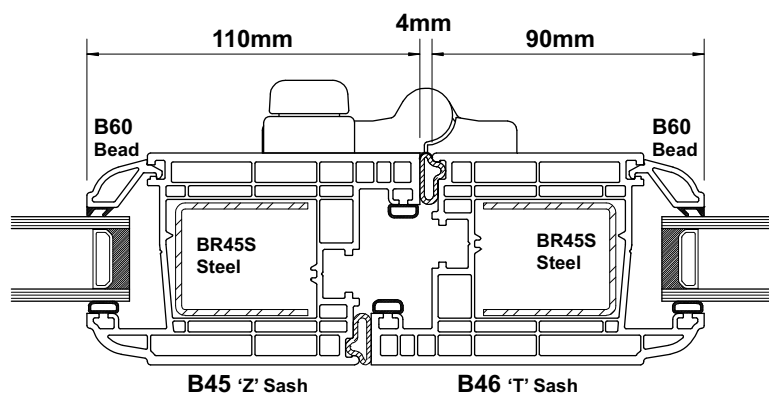
Scheme 321 shown, all options are shown on pages 65 & 66



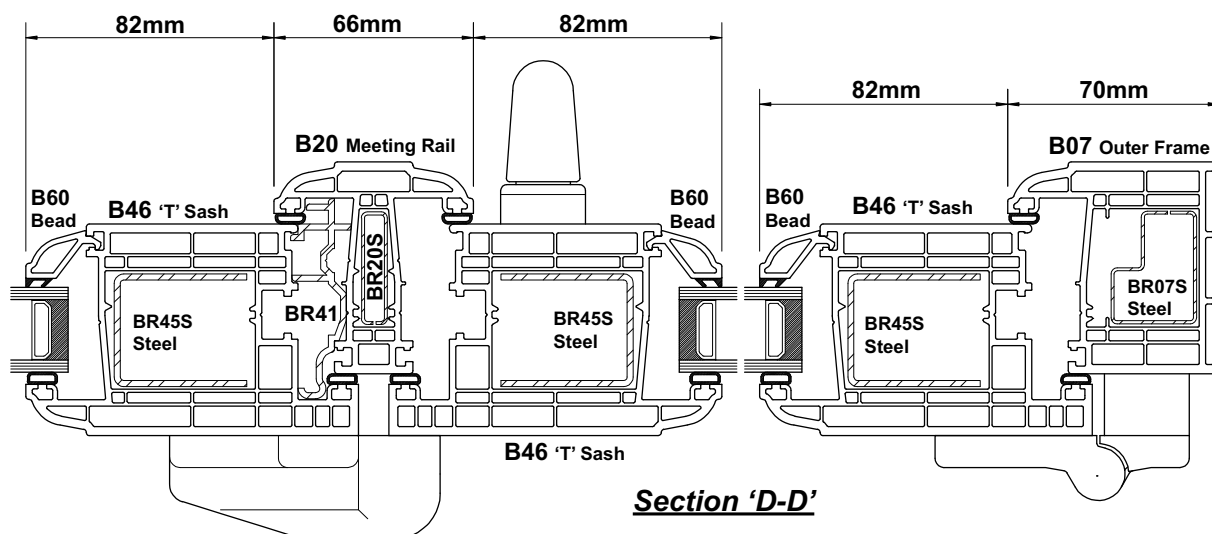
Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.



Section 'B-B'



Section 'C-C'



Section 'D-D'

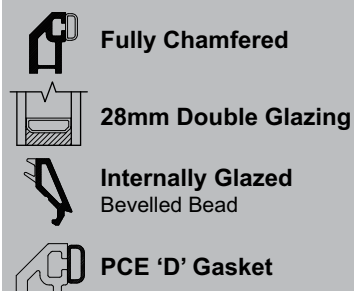
Chamfered 63mm Bi-Folding Door (Open-in)

Internal Glazing - Vertical Section

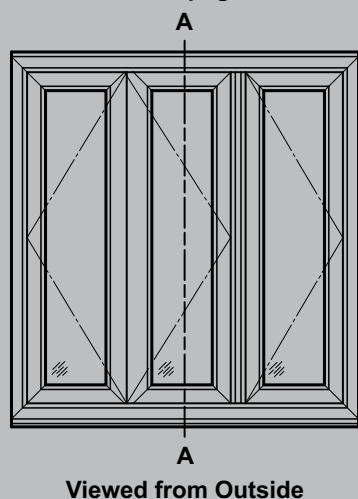
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	BI-FOLDING DOOR

ELITE 63

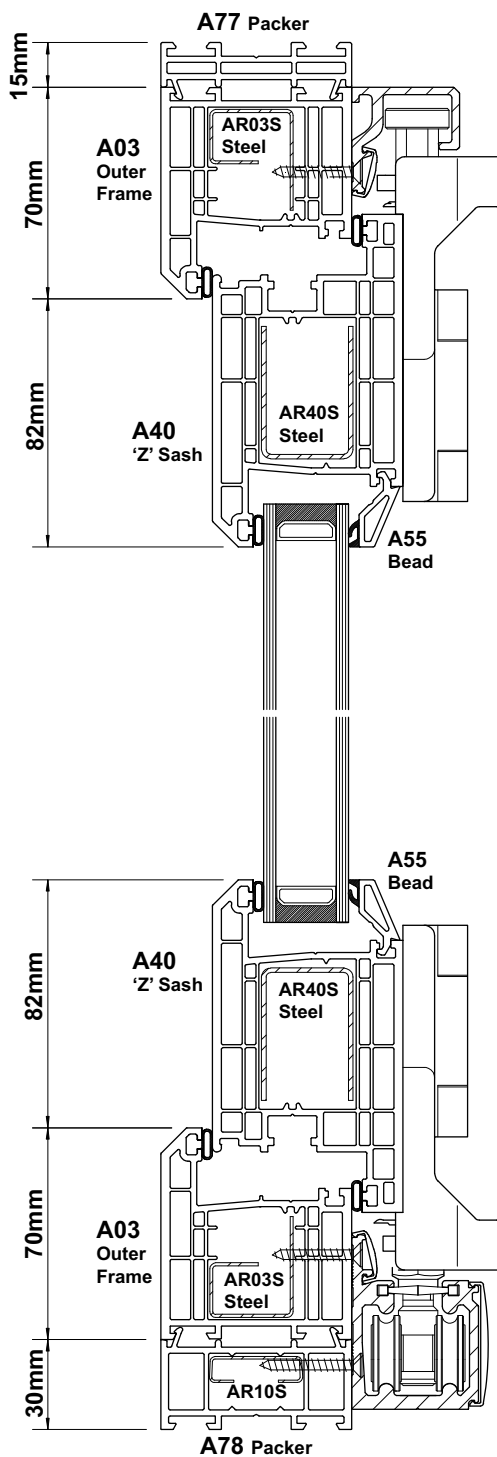
Chamfered 63mm



Scheme 321 shown, all options are shown on pages 65 & 66



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.



Section 'A-A'

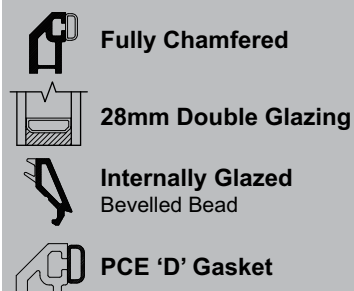
Chamfered 63mm Bi-Folding Door (Open-in)

Internal Glazing - Horizontal Section

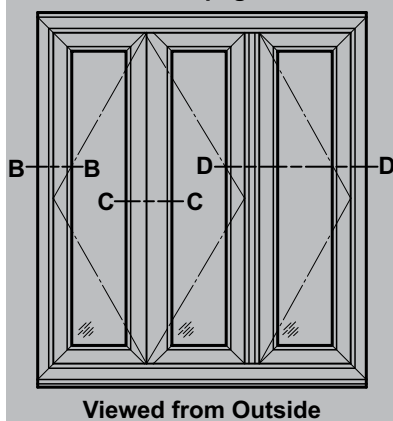
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	BI-FOLDING DOOR

ELITE 63

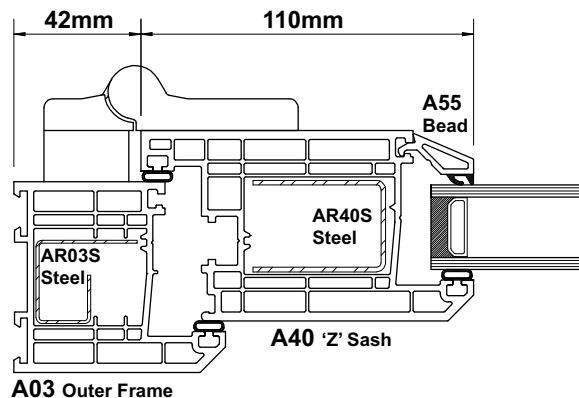
Chamfered 63mm



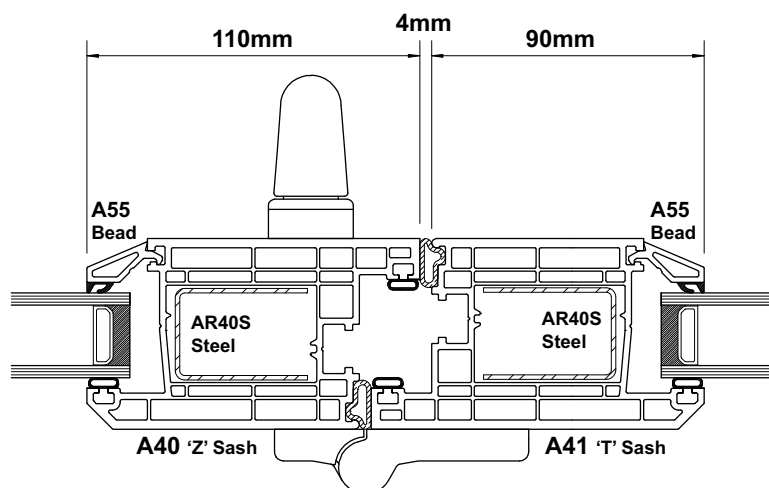
Scheme 321 shown, all options are shown on pages 65 & 66



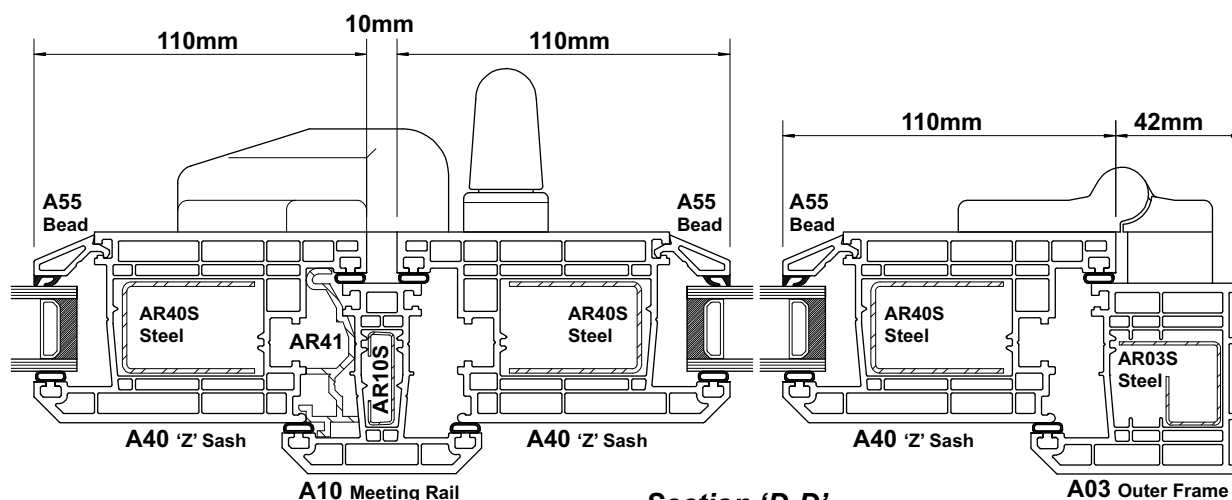
Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.



Section 'B-B'



Section 'C-C'



Section 'D-D'

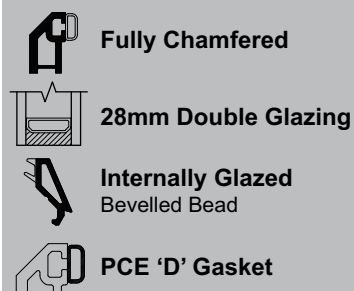
Chamfered 63mm Bi-Folding Door (Open-out)

Internal Glazing - Vertical Section

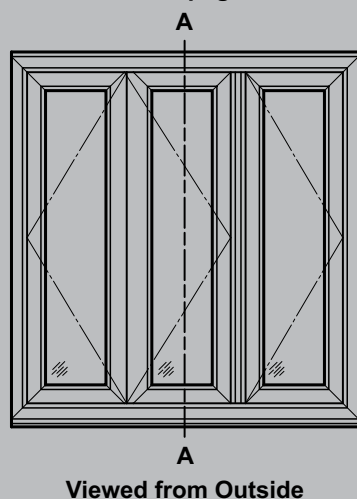
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	BI-FOLDING DOOR

ELITE 63

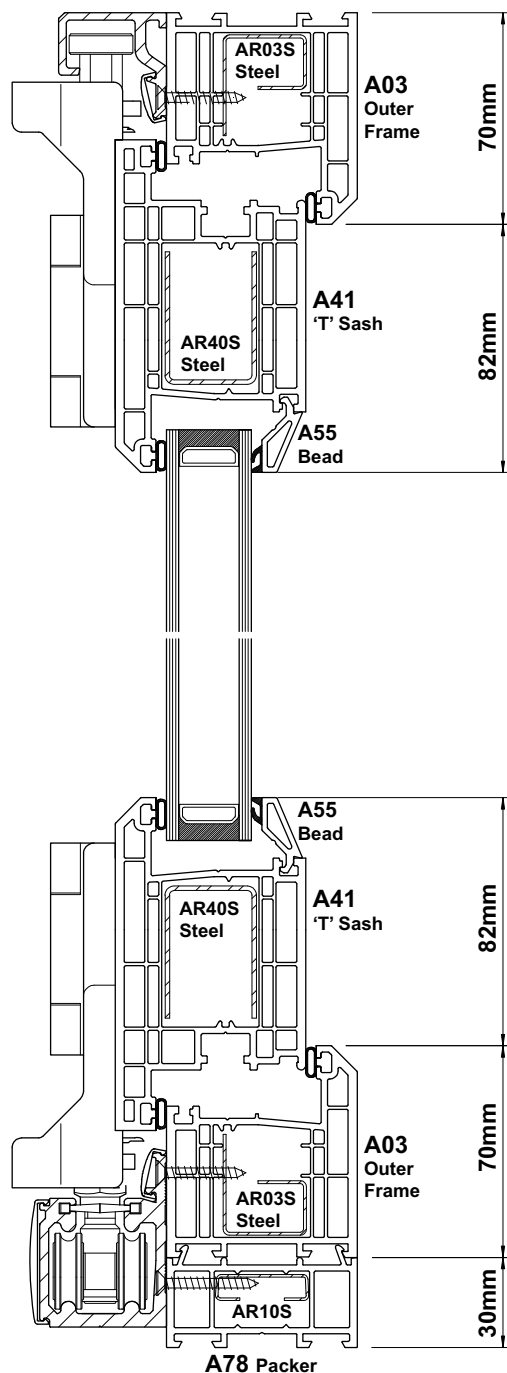
Chamfered 63mm



Scheme 321 shown, all options are shown on pages 65 & 66



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.



Section 'A-A'

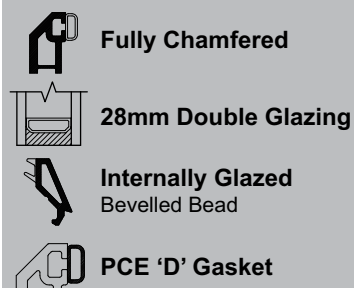
Chamfered 63mm Bi-Folding Door (Open-out)

Internal Glazing - Horizontal Section

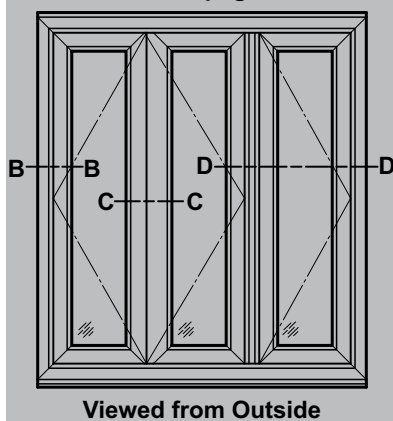
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	BI-FOLDING DOOR

ELITE 63

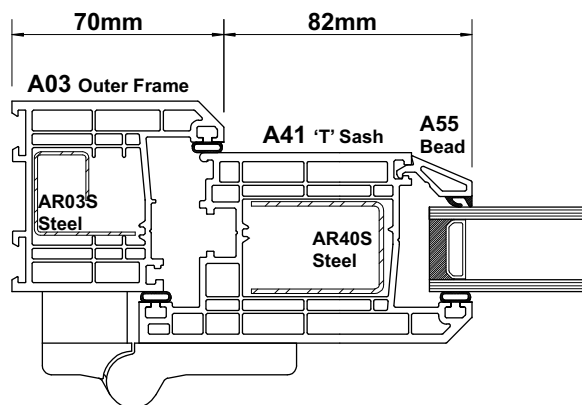
Chamfered 63mm



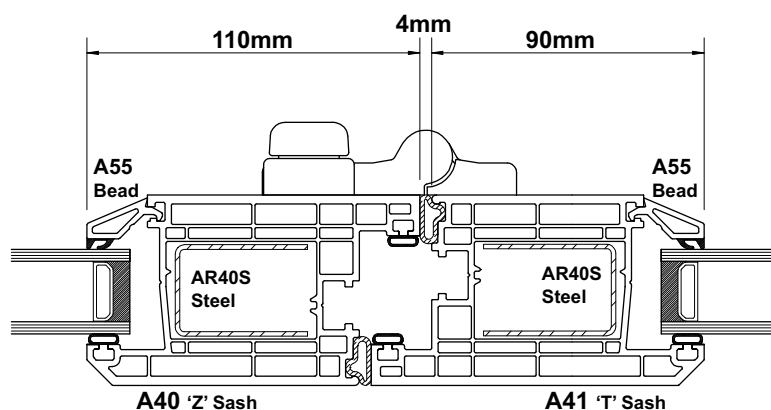
Scheme 321 shown, all options are shown on pages 65 & 66



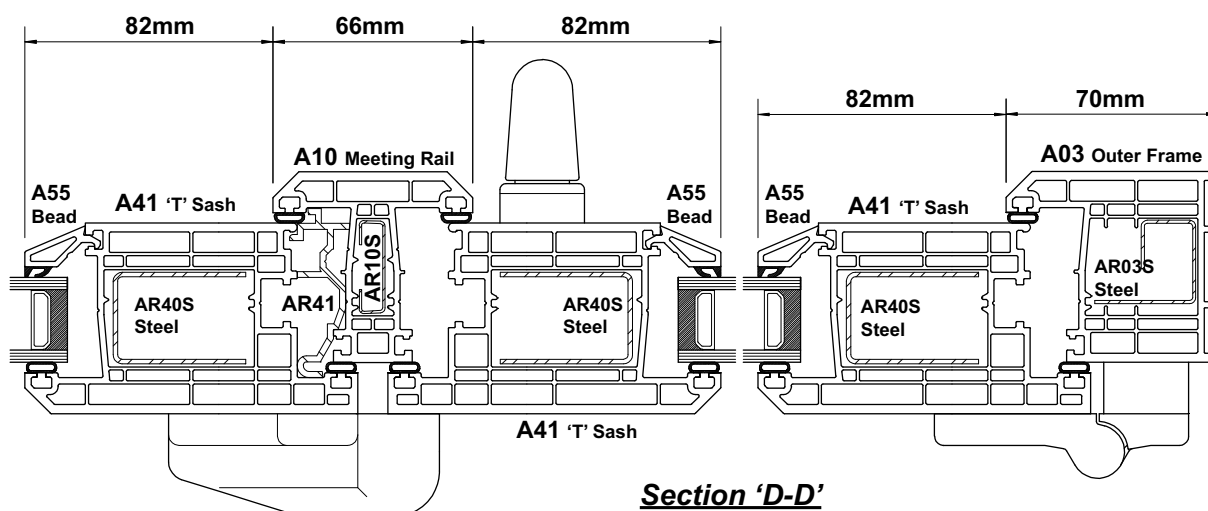
Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 63 Technical Manuals.



Section 'B-B'



Section 'C-C'



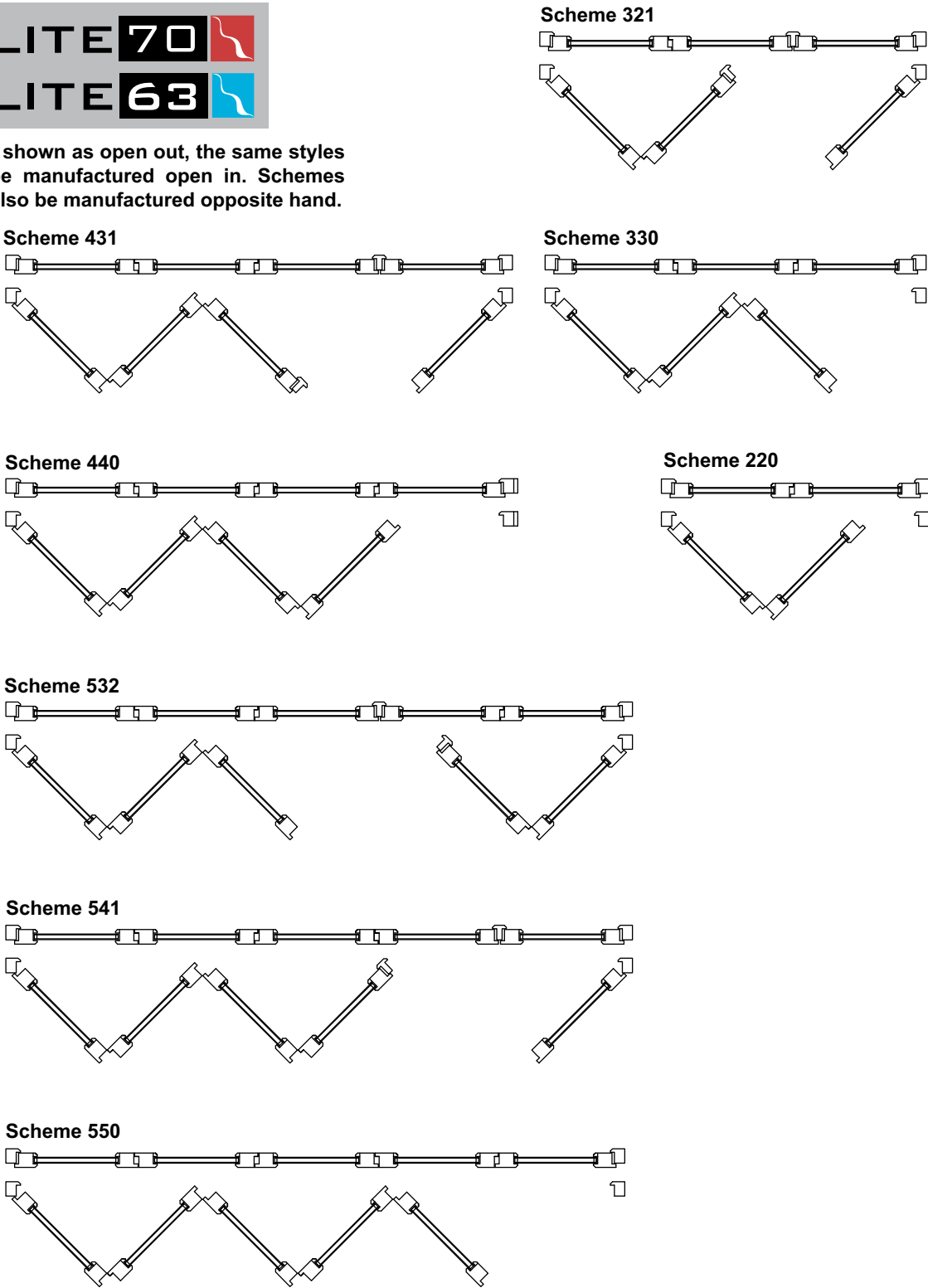
Section 'D-D'

Bi-Folding Door Configurations

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	BI-FOLDING DOOR



Plans shown as open out, the same styles can be manufactured open in. Schemes may also be manufactured opposite hand.



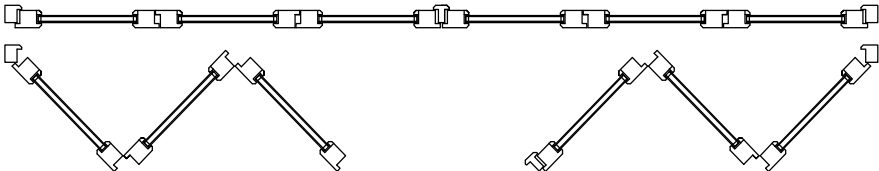
Bi-Folding Door Configurations

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	BI-FOLDING DOOR

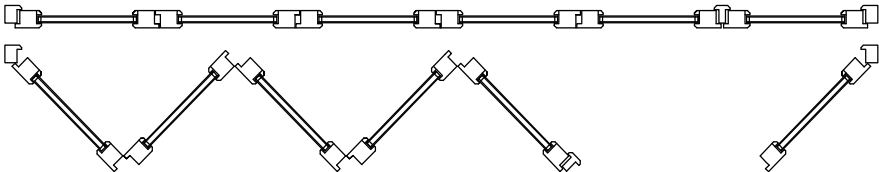


Plans shown as open out, the same styles can be manufactured open in. Schemes may also be manufactured opposite hand.

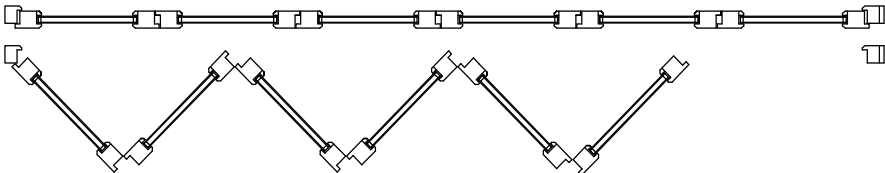
Scheme 633



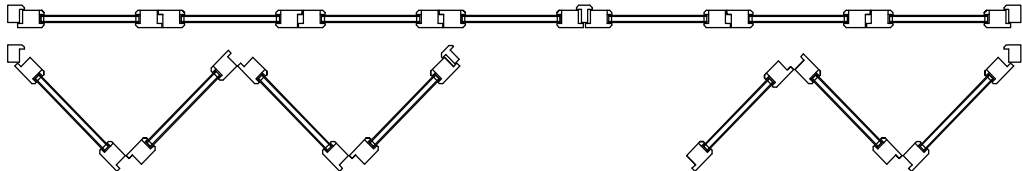
Scheme 651



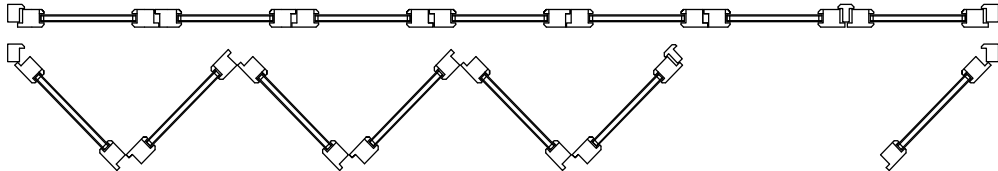
Scheme 660



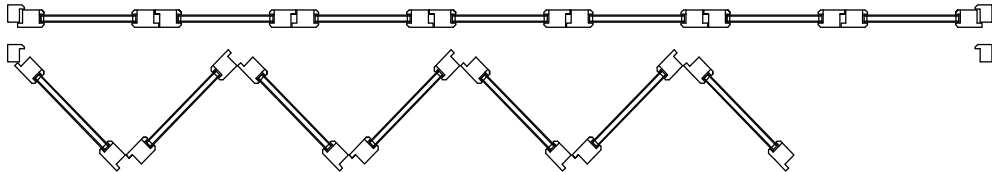
Scheme 743



Scheme 761



Scheme 770



Door Styles Composite Doors



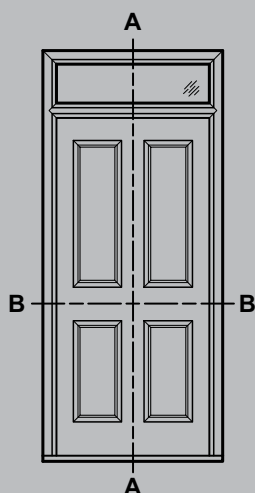
ELITE 70 

Bevelled 70mm Composite Door (Open-in) With 44mm Panel

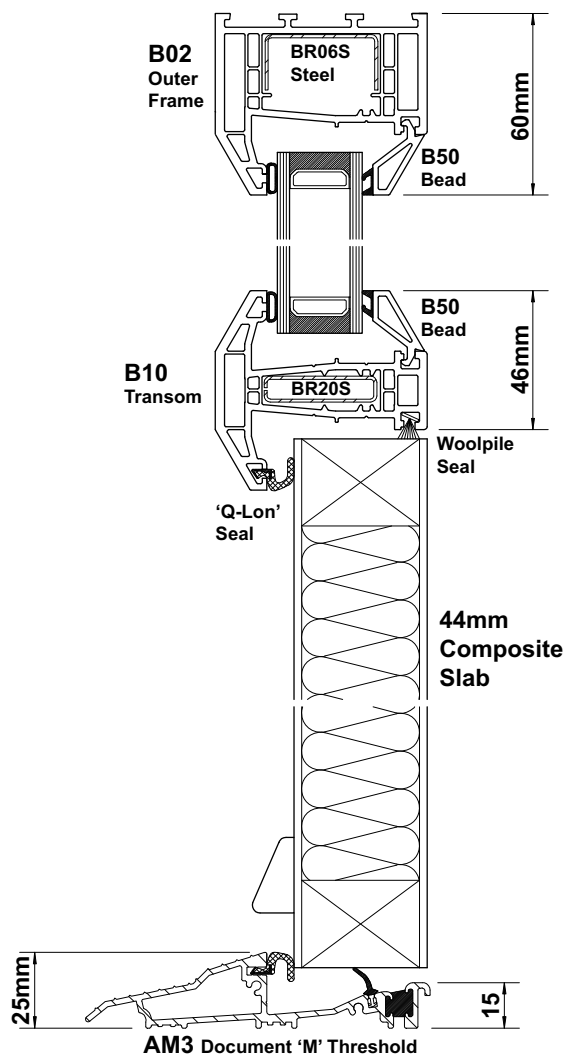
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	COMPOSITE DOOR

ELITE 70 Bevelled 70mm

-  Fully Bevelled
-  28mm Double Glazing
-  Internally Glazed Bevelled Bead
-  'Q-Lon' Weatherseal
-  Woolpile Seal



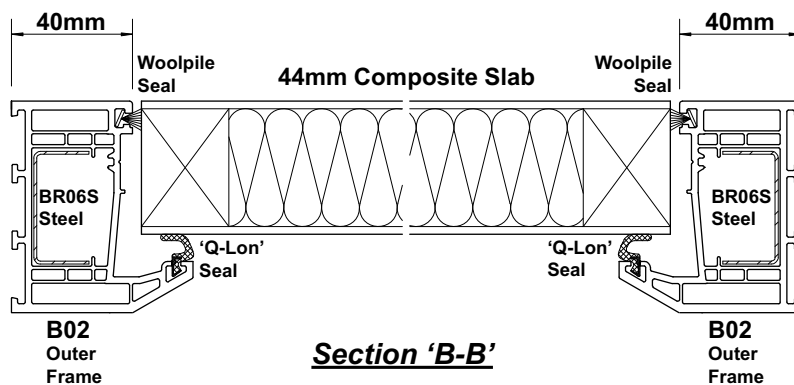
Viewed from Outside



Section 'A-A'

Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.

Note: Coupling mullion options shown on page 49.



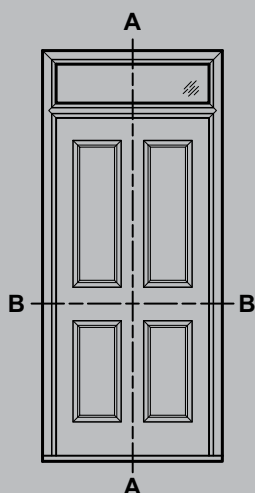
Section 'B-B'

Ovolo 70mm Composite Door (Open-in) With 44mm Panel

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	COMPOSITE DOOR

ELITE 70 Ovolo 70mm

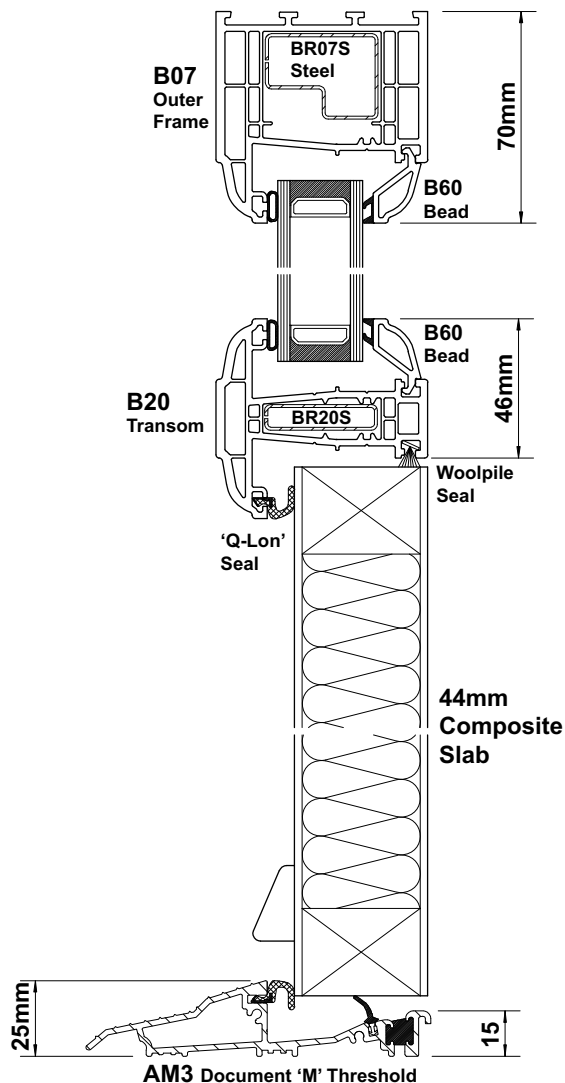
-  Fully Ovolo
-  28mm Double Glazing
-  Internally Glazed
Ovolo Bead
-  'Q-Lon' Weatherseal
-  Woolpile Seal



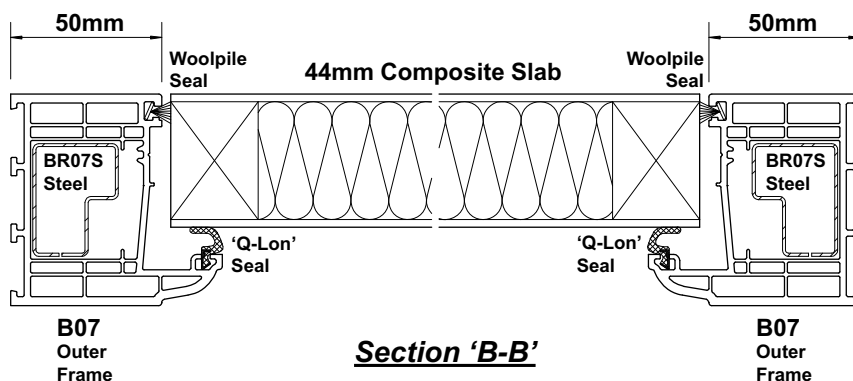
Viewed from Outside

Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Elite 70 Technical Manuals.

Note: Coupling mullion options shown on page 49.



Section 'A-A'



Section 'B-B'

Door Styles

Ride Over Patio Door



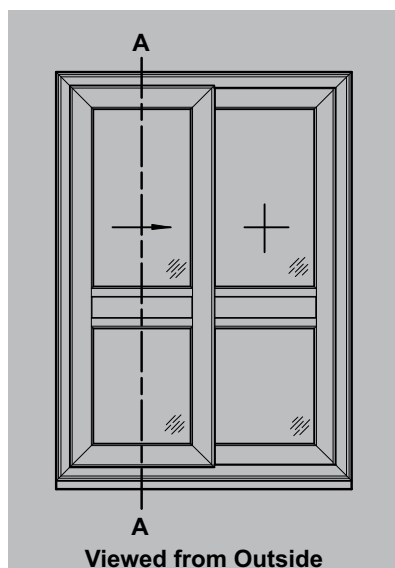
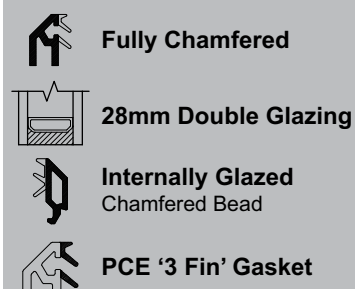
**Ride Over
Patio**

70mm Sliding Patio

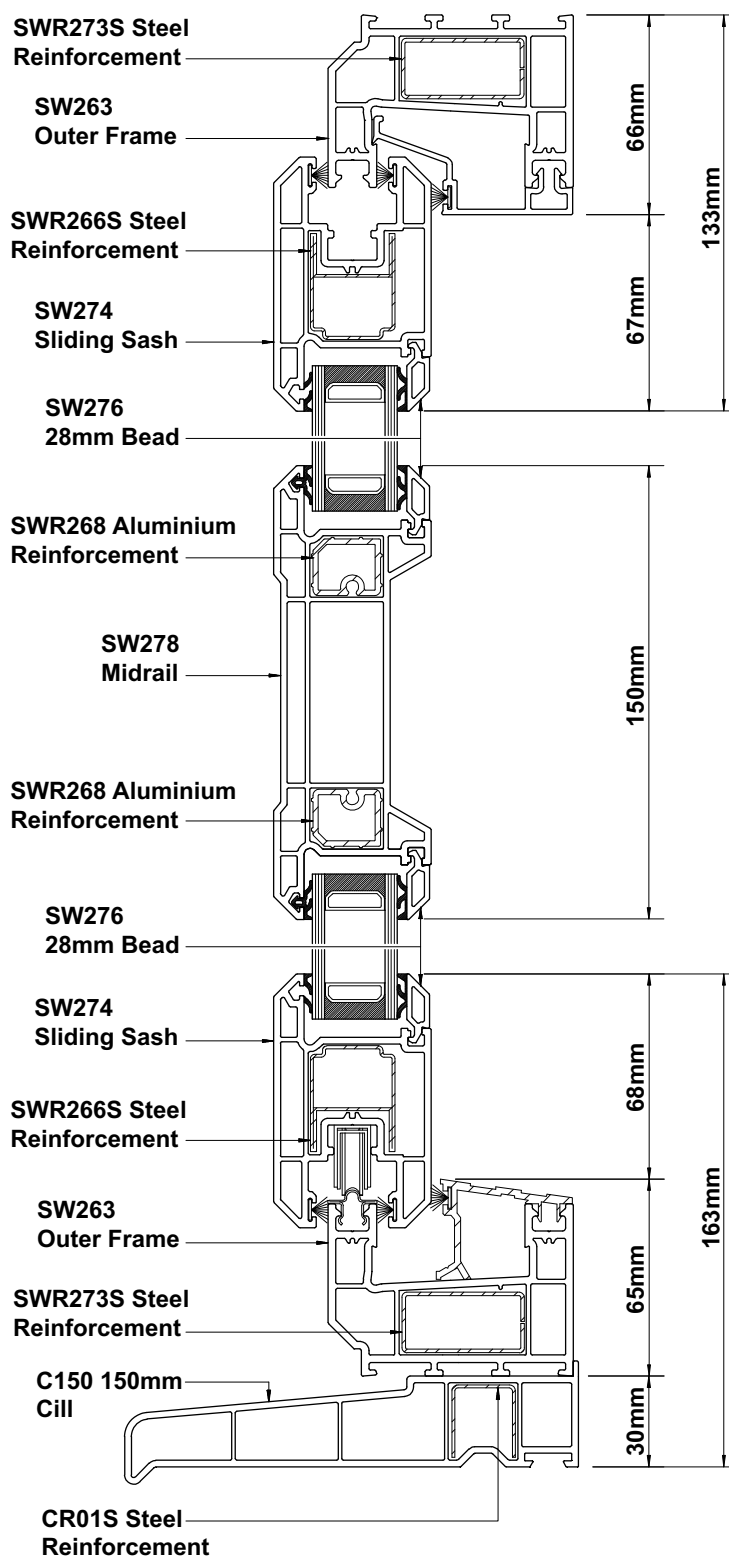
Internal Glazing - Vertical Section

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	SLIDING PATIO DOOR

Ride Over Patio



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Ride Over Patio Technical Manual.



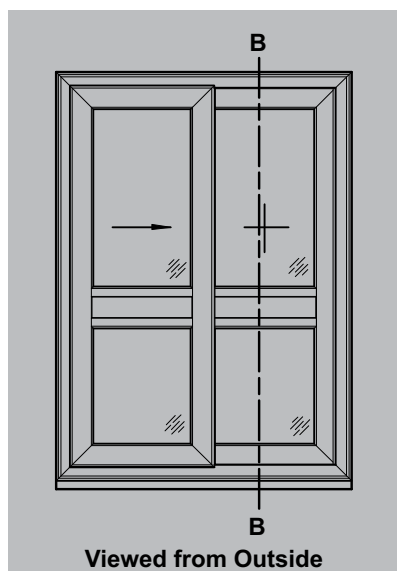
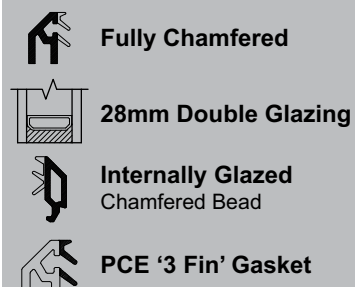
Section 'A-A'

70mm Sliding Patio

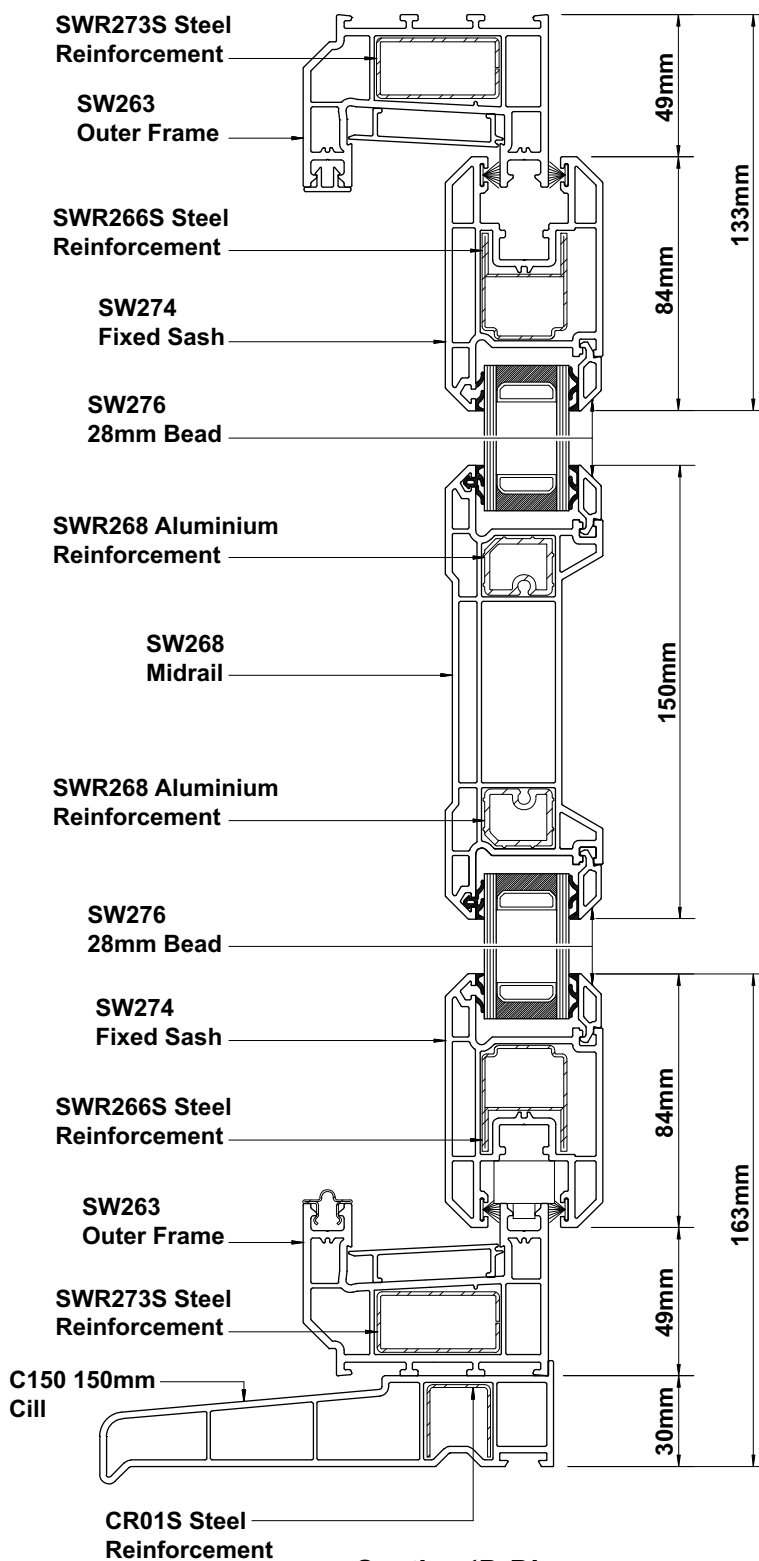
Internal Glazing - Vertical Section

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	SLIDING PATIO DOOR

Ride Over Patio



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Ride Over Patio Technical Manual.



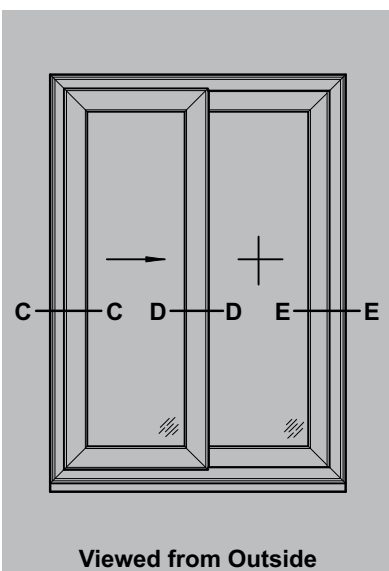
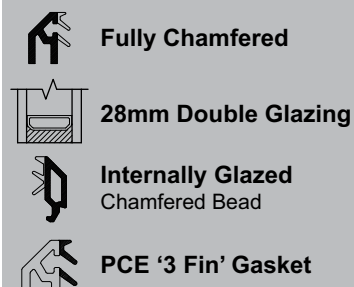
Section 'B-B'

70mm Sliding Patio

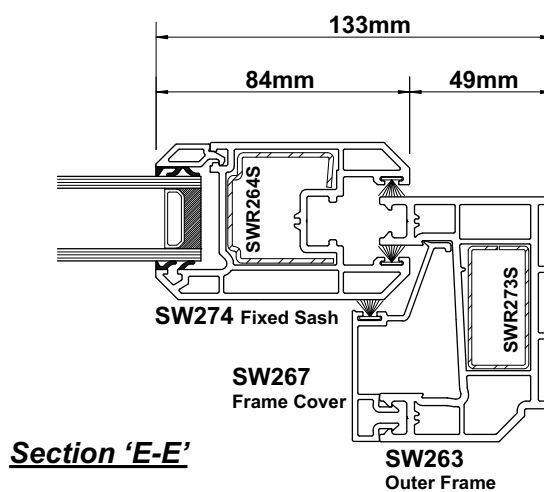
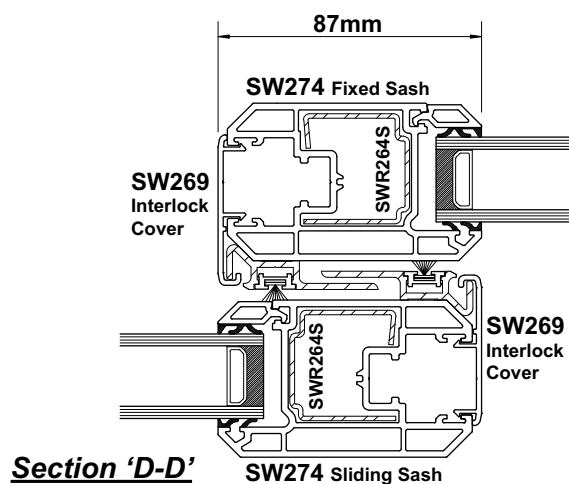
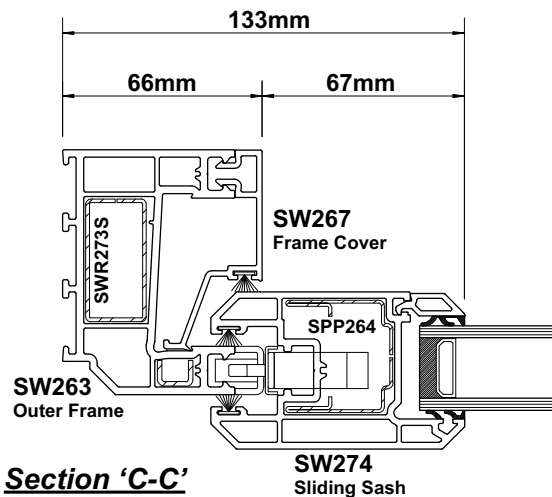
Internal Glazing - Horizontal Section

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	SLIDING PATIO DOOR

Ride Over Patio



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Ride Over Patio Technical Manual.



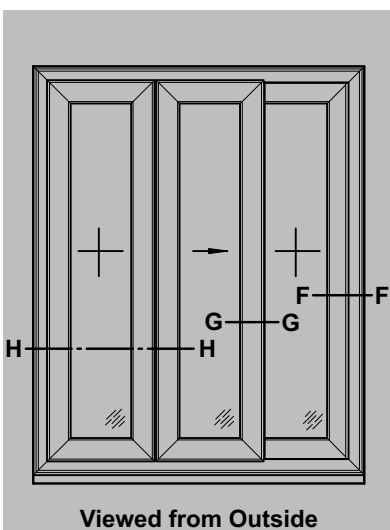
70mm Sliding Patio

Internal Glazing - Horizontal Section

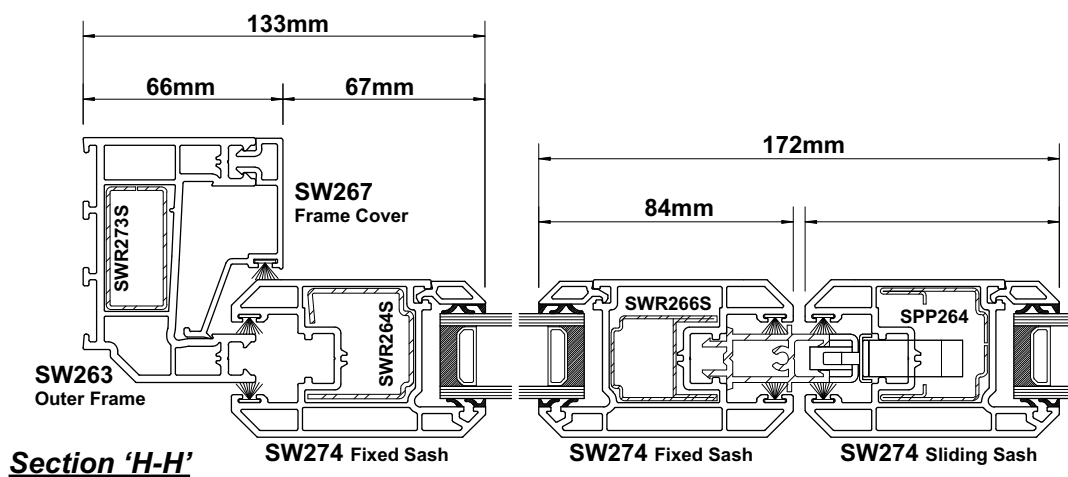
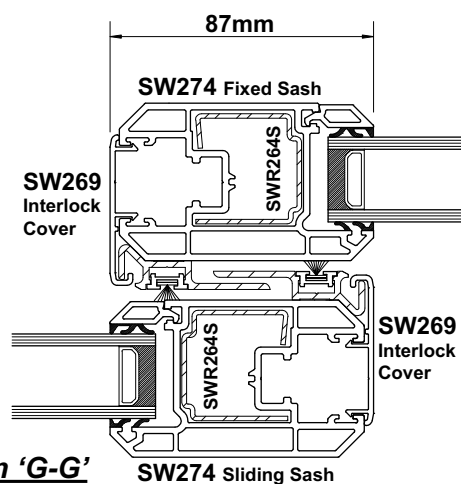
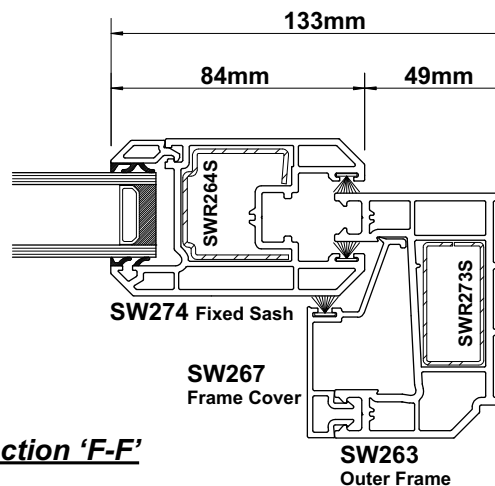
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	SLIDING PATIO DOOR

Ride Over Patio

-  Fully Chamfered
-  28mm Double Glazing
-  Internally Glazed Chamfered Bead
-  PCE '3 Fin' Gasket



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Ride Over Patio Technical Manual.



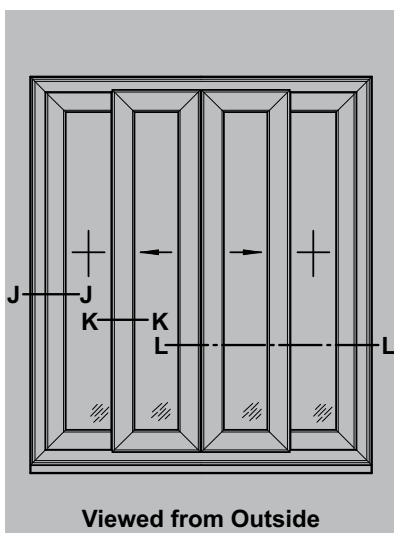
70mm Sliding Patio

Internal Glazing - Horizontal Section

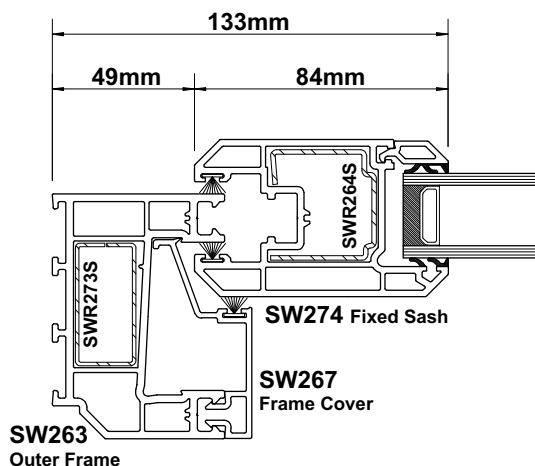
CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	SLIDING PATIO DOOR

Ride Over Patio

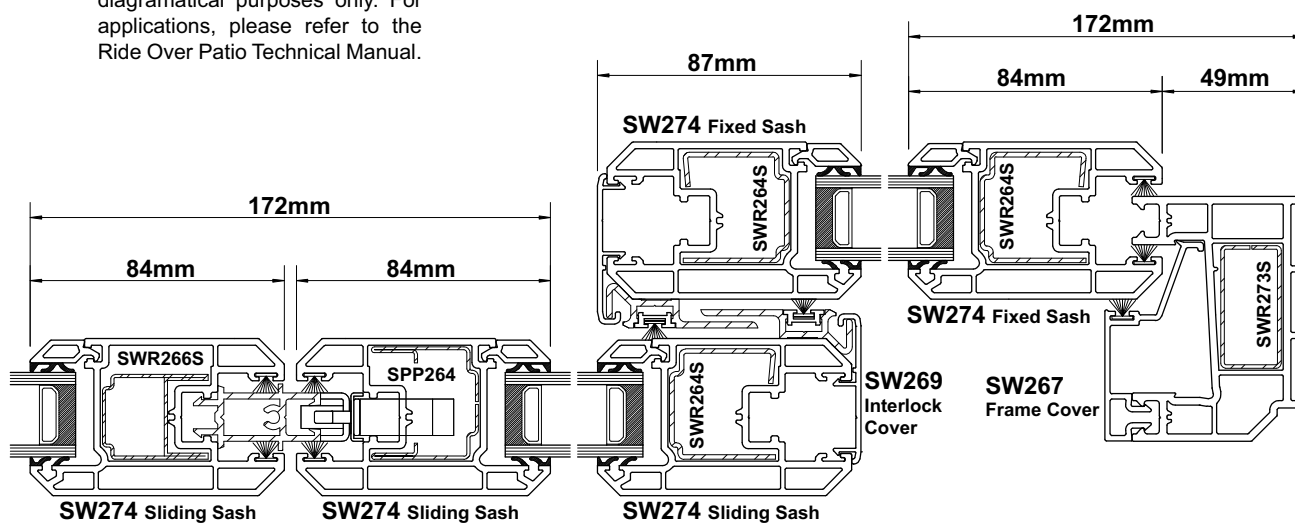
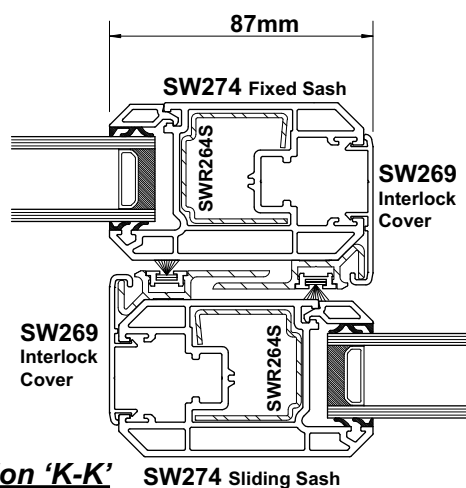
-  Fully Chamfered
-  28mm Double Glazing
-  Internally Glazed Chamfered Bead
-  PCE '3 Fin' Gasket



Note: All reinforcements are shown for diagrammatical purposes only. For applications, please refer to the Ride Over Patio Technical Manual.



Section 'K-K'

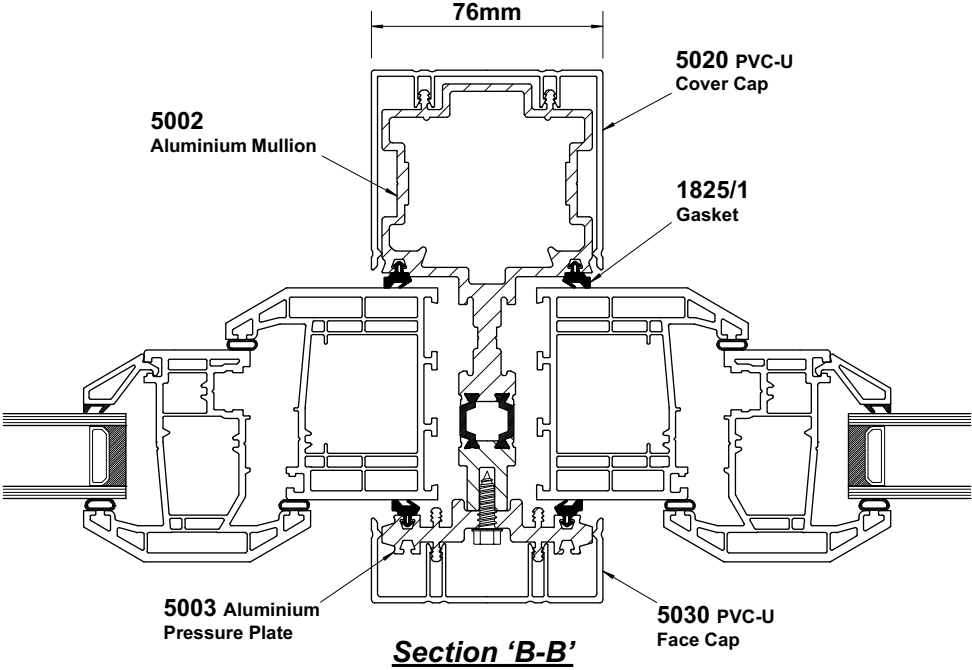
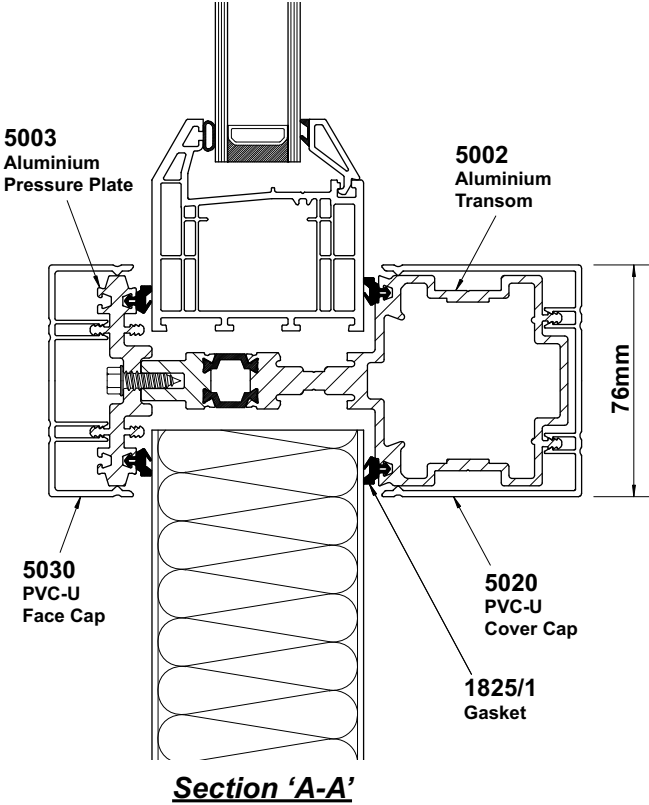
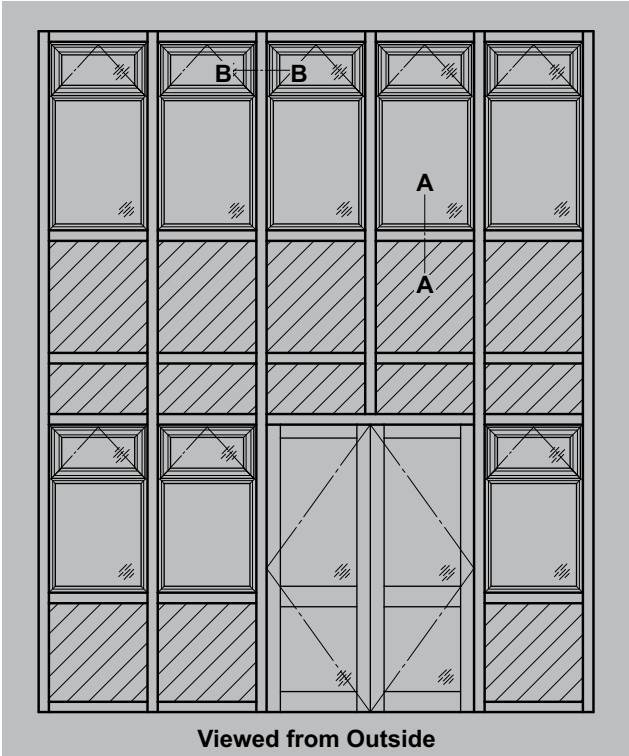


Curtain Wall



CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CURTAIN WALL

Curtain Wall



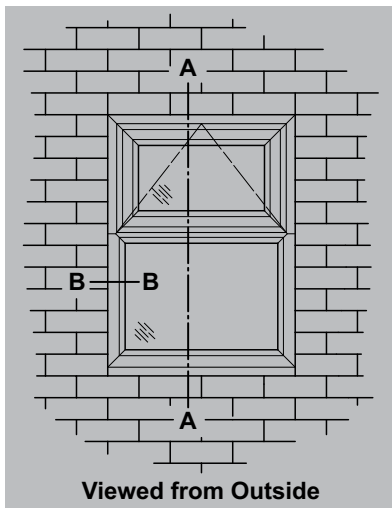
Cavity Closer



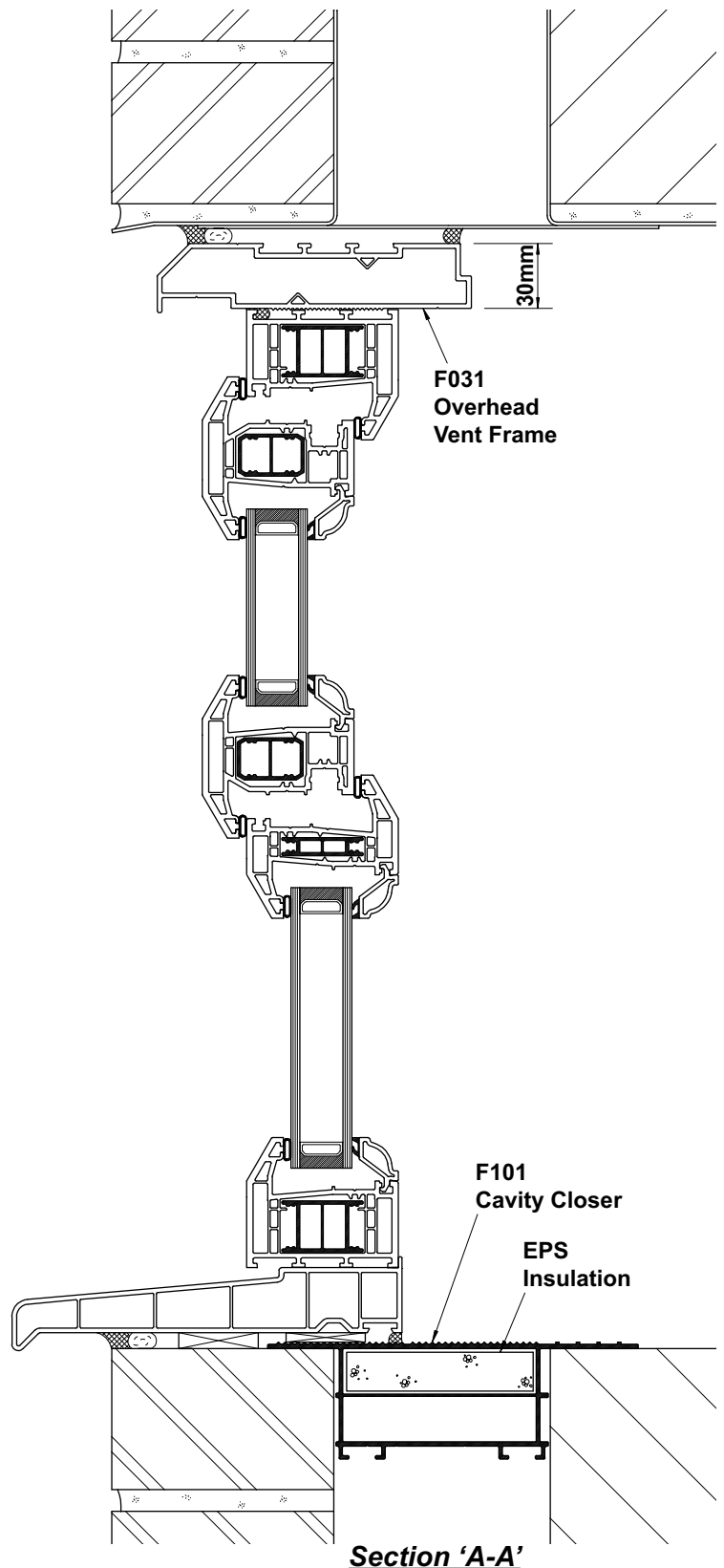
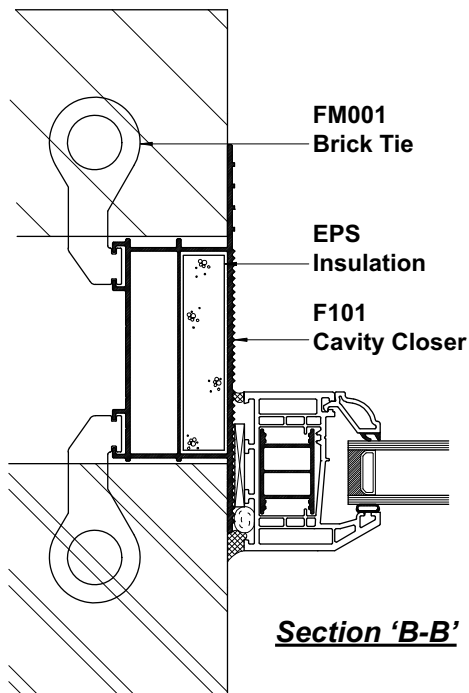
Spectus[®]
FORMER

100mm Cavity Closer - Flush Reveal

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CAVITY CLOSER

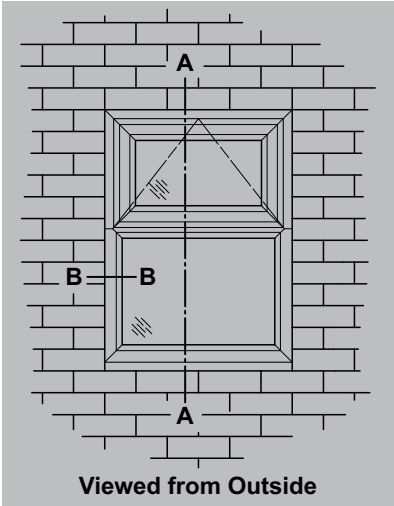


Note: 100mm Cavity width shown, additional cavity sizes are shown on page 83.

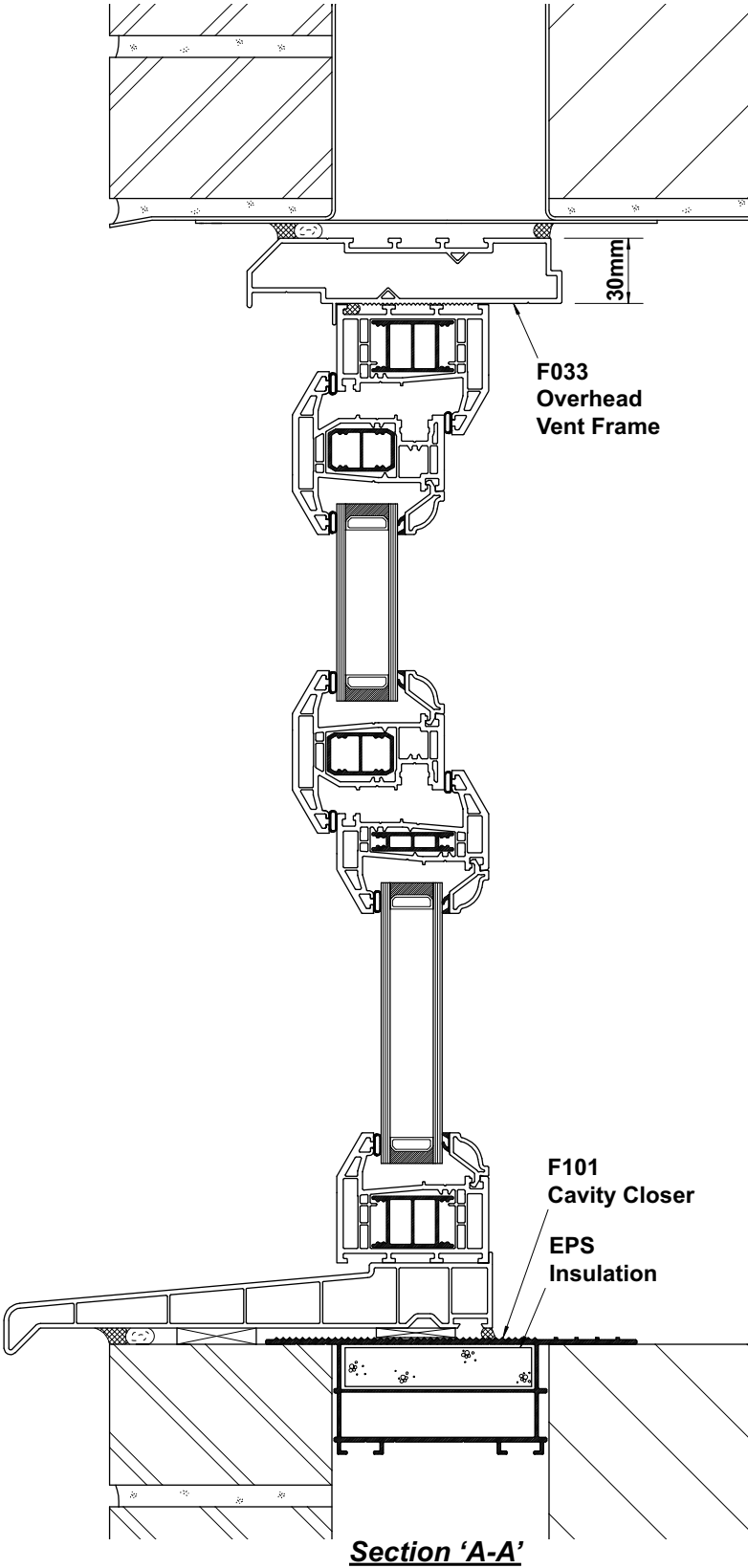
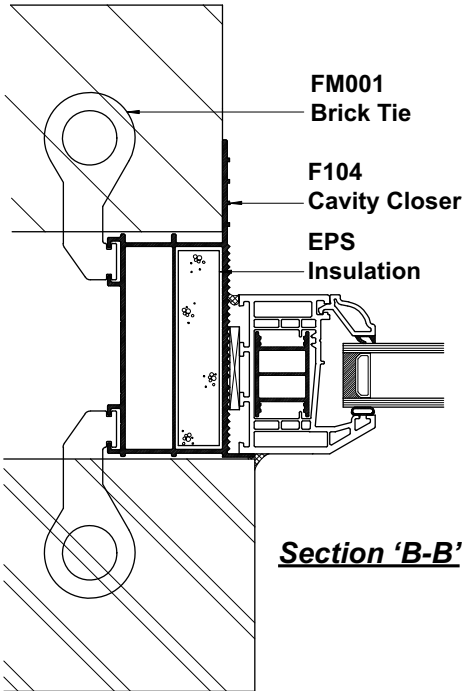


100mm Cavity Closer - Check Reveal

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CAVITY CLOSER

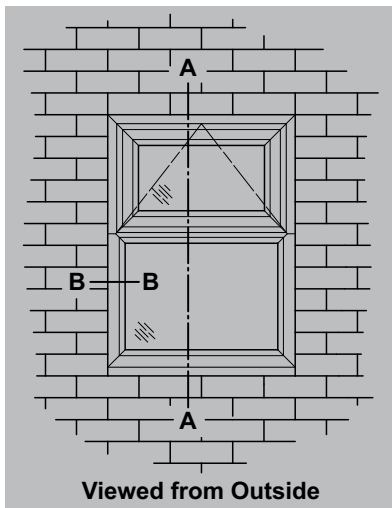


Note: 100mm Cavity width shown, additional cavity sizes are shown on page 83.

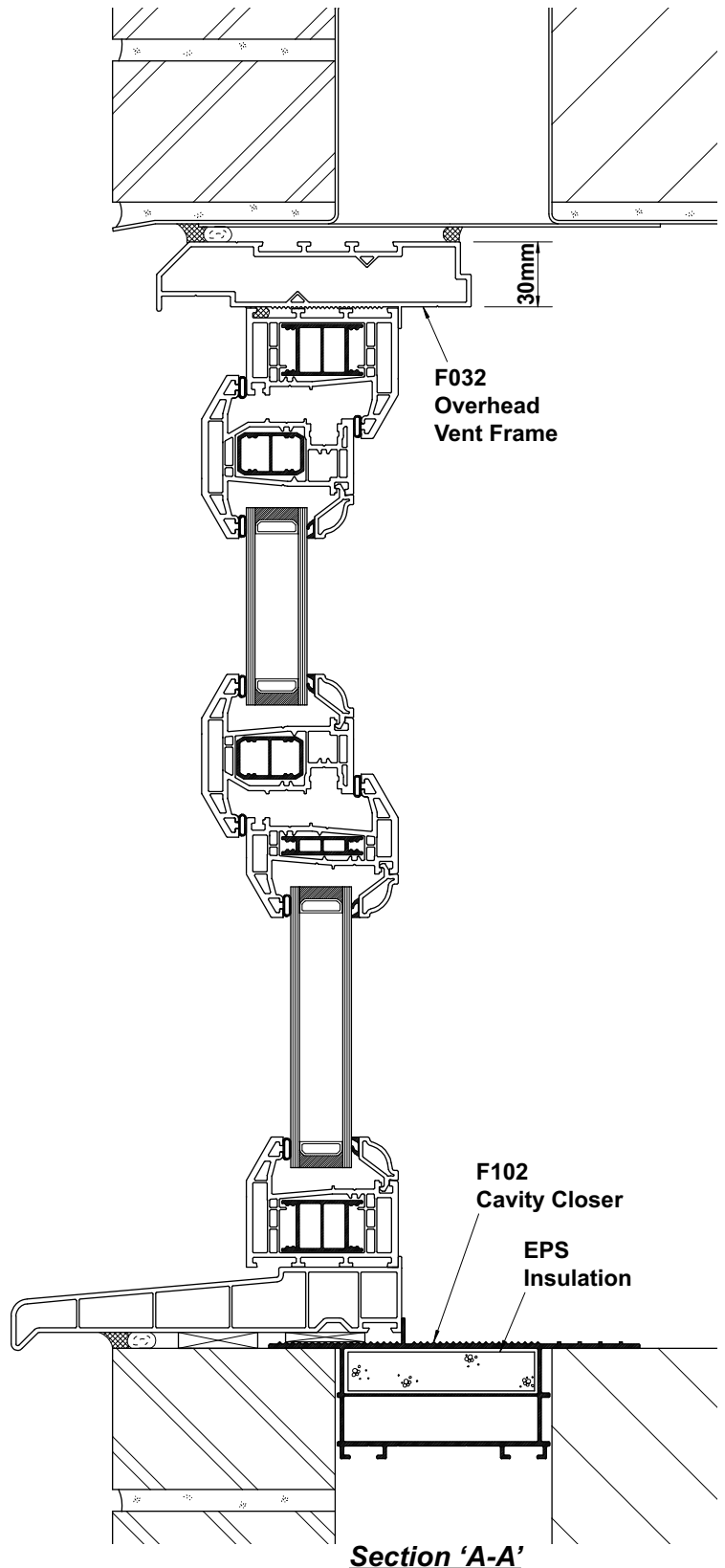
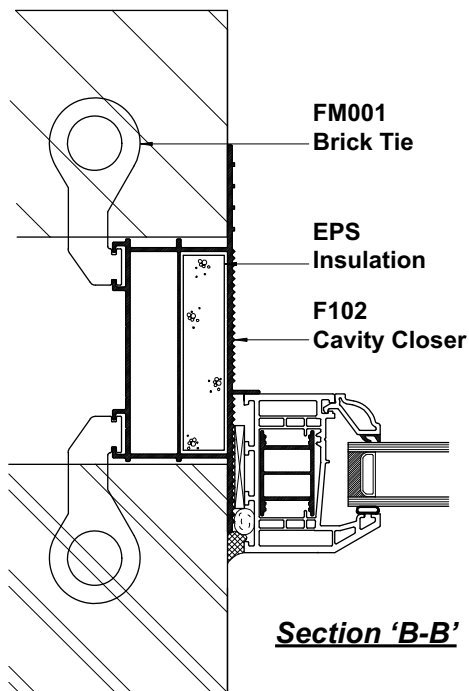


100mm Cavity Closer - Outside Window Fit

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CAVITY CLOSER

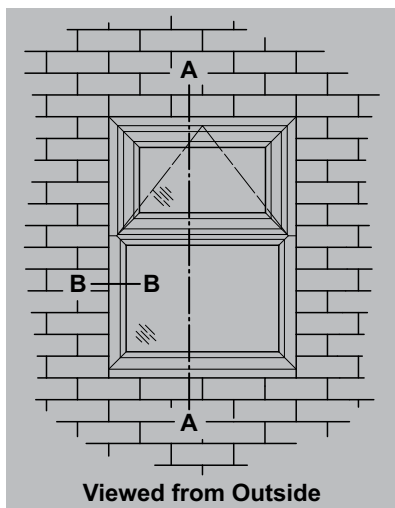


Note: 100mm Cavity width shown, additional cavity sizes are shown on page 83.

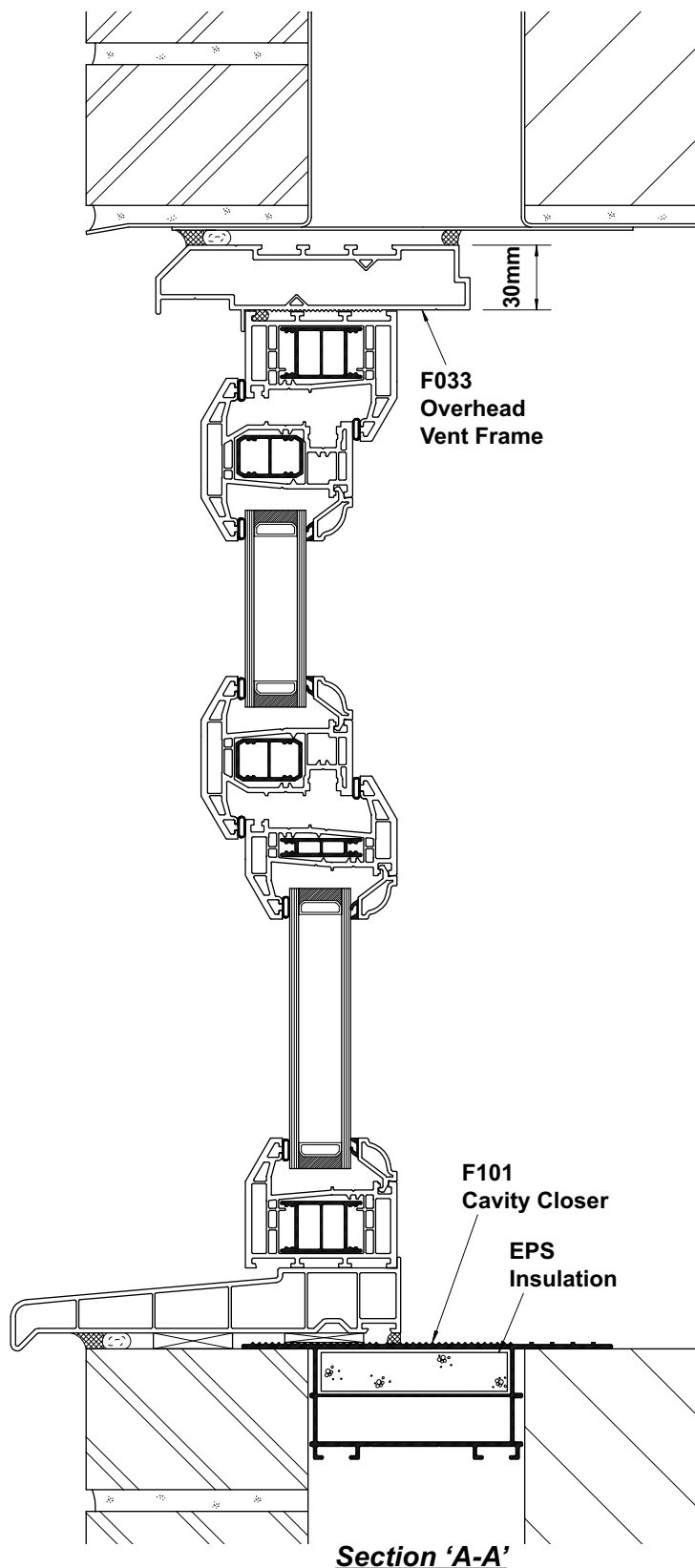
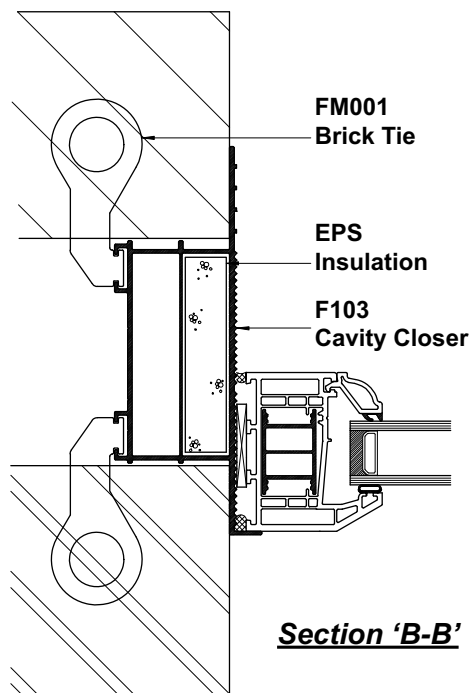


100mm Cavity Closer - Inside Window Fit

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CAVITY CLOSER

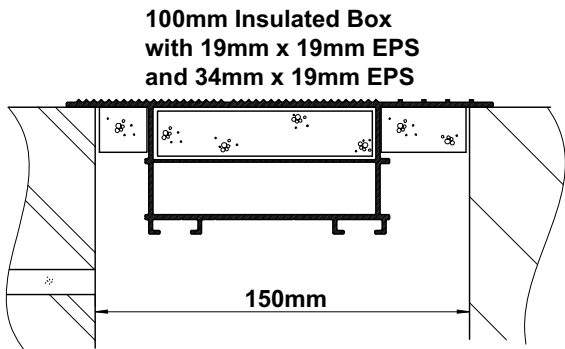
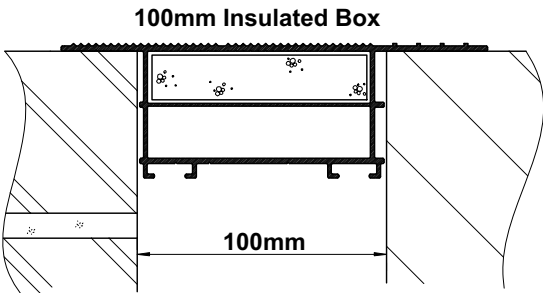
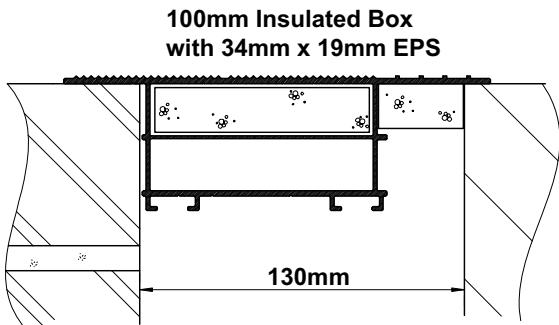
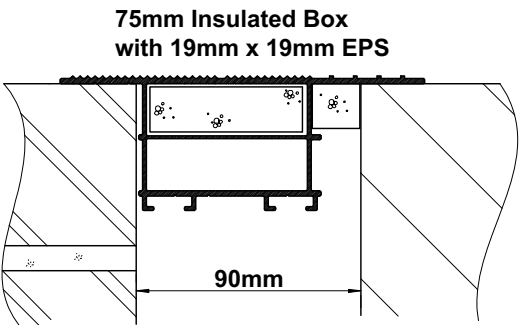
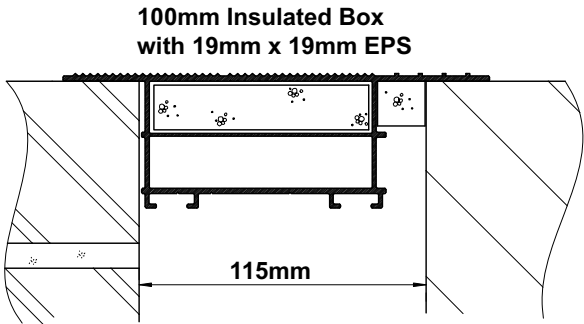
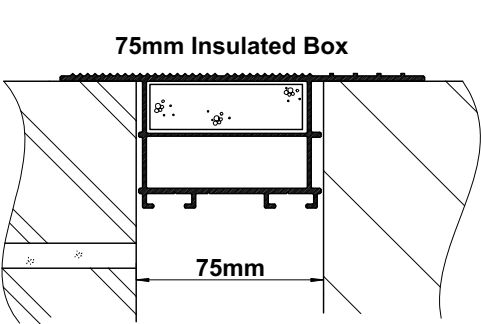


Note: 100mm Cavity width shown, additional cavity sizes are shown on page 83.



Cavity Closer - Cavity Widths

CATEGORY	DESCRIPTION	STYLE
PRODUCT	ASSEMBLIES	CAVITY CLOSER



2 Product Characteristics

Performance
Building Regulations
Glass
Maximum Size Limits
Product Care

Performance



CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PERFORMANCE

Acceptable levels of window performance are vital to achieve required standards, eliminate costly corrective action, maintain customer confidence and uphold the reputation of the manufacturing company.

Profile and reinforcement choice, window size and configuration will all effect window performance.

Standards require that doors and windows meet the specification of BS 6375-1, for air permeability, watertightness and wind resistance, as shown in the table below.

For the exposure category specified, the units tested shall achieve at least the values indicated for air permeability and water tightness. The resistance to windload values are:

- P1 applied pressure to measure deflection
- P2 pulsating pressure applied for 50 cycles to assess performance under repeated windloads
- P3 applied pressure to assess the safety of the specimen under extreme conditions

To select the appropriate exposure category, the windload must be known. Once the windload is known, the exposure category is selected from the table below, equal to or exceeding the determined windload.

To calculate the windload, the following standards may be used:

BS 6375-1 may be used to determine wind loads for low rise buildings (below 15m).

For any building height, the more detailed method in BS EN 1991-1-4 should be used.

Note: Page 87 has a useful comparison table showing values in pascals, against a number of more familiar units.

Exposure categories and classifications to BS 6375-1

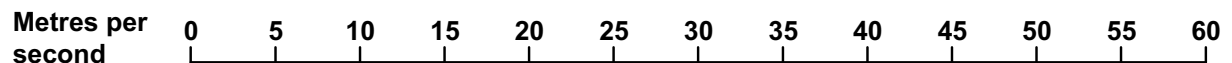
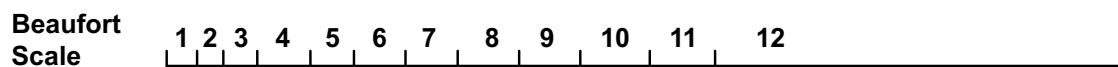
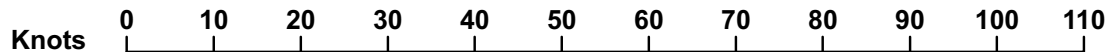
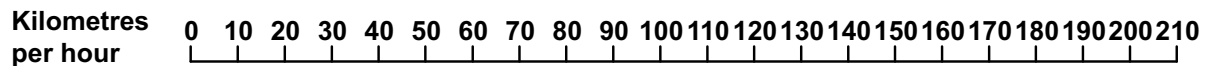
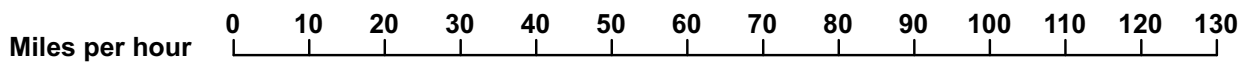
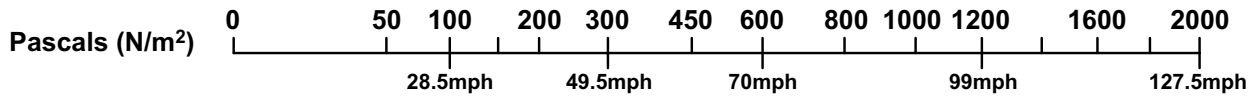
Exposure Category	Air Permeability	Watertightness	Resistance to Windload			
			Class	P1	P2	P3
Doorsets						
800 U	Class 0 No test	Class 0 No test	Class A2	800 Pa	400 Pa	1200 Pa
800 X	Class 1 150 Pa	Class 2A 50 Pa	Class A2	800 Pa	400 Pa	1200 Pa
800	Class 2 300 Pa	Class 3A 100 Pa	Class A2	800 Pa	400 Pa	1200 Pa
1200	Class 2 300 Pa	Class 3A 100 Pa	Class A3	1200 Pa	600 Pa	1800 Pa
Windows						
800	Class 2 300 Pa	Class 3A 100 Pa	Class A2	800 Pa	400 Pa	1200 Pa
1200	Class 2 300 Pa	Class 3A 100 Pa	Class A3	1200 Pa	600 Pa	1800 Pa
1600	Class 2 300 Pa	Class 5A 200 Pa	Class A4	1600 Pa	800 Pa	2400 Pa
2000	Class 2 300 Pa	Class 5A 200 Pa	Class A5	2000 Pa	1000 Pa	3000 Pa
2000+	Class 2 300 Pa	Class 7A 300 Pa	Class AE	(xxxx)	(xxxx) x 0.5	(xxxx) x 1.5

Note: Specimens tested above 2000, are classified Class Exxxx - where xxxx is the actual test pressure (P1)

Doorsets designed to meet the disabled access requirements of approved document m, are unlikely to exceed 800 X

Weather Performance - Load Comparison Chart

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PERFORMANCE



CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PERFORMANCE

In recent years the media have projected the image that all plastics ignite readily and then burn furiously. Whilst this carries some degree of truth it is clearly not true for all plastics materials. Burning PVC, for example rapidly forms a surface char that inhibits further combustion.

It is also claimed, quite correctly, that burning plastics generate toxic gases and fumes. However almost any material which burns will give off toxic gases and fumes similar in nature to those arising from plastics materials, of greater significance is the rate at which they are generated.

The major toxic constituent of the gases, and the one causing most fire deaths, is carbon monoxide. This is produced not only when most plastics burn but also when wood, wool, cotton and practically every other naturally occurring combustible material is alight, particularly when the oxygen supply is restricted as it so often is in fully developed fire situations.

A fundamental misunderstanding surrounding the subject of toxicity and fire is the belief that toxicity equates to toxic hazard. Many hold that just because a material gives off toxic fumes when burning then it must present a serious hazard. This is not necessarily true. Fire safety experts agree that the toxicity of the combustion products alone is insufficient to define the toxic hazard associated with a burning material. Obviously the presence of a material which is difficult to ignite will reduce the probability of a fire starting and hence present a lower risk of toxic emission than one which ignites easily. Similarly the relative toxicity of the combustion products of each material may become of little importance once relative burning rates are taken into account.

The best way to reduce the toxic hazard in fires, as well, as the general hazard, is to reduce the risk of the fire starting in the first place and, if it has already commenced, to reduce its rate of growth.

This objective can be achieved by several means. Reducing the number of potential ignition sources is an obvious first step, but more directly the ignitability of a building's contents can be reduced as can their rate of combustion if a fire does start. If there is no fire then there is no toxic hazard. If a fire starts but then burns slowly, its slow spread and slow build-up of toxic fumes permits a longer escape time and reduces both the toxic hazard and the overall fire hazard.

PVC, its compounds and the products made from them, in general score highly on both counts. Unplasticised PVC, as for example used in window frames, is extremely difficult to ignite. Even in a large fire situation it will burn very slowly and will not sustain combustion once the ignition source has been removed or has gone out.

Window Frames - The use of PVC-U in window frame construction has long since been well established in Germany and is now a rapidly growing application in Britain. UK Building Regulations do not stipulate any fire performance standards for the materials used in window frames. Whilst no degree of fire resistance as defined by BS476 Parts 20 - 23 can be achieved by PVC-U window units, work carried out at the Fire Research Station has shown the fire performance of PVC is equivalent to that of traditional wood frames under the conditions of test (BS476-7 and BS476-12).

Summary of PVC Combustion Properties

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PERFORMANCE
IGNITABILITY	PVC is very difficult to ignite using common ignition sources.
HEAT RELEASE	Burning materials release heat and the rate of release affects the severity of the fire; this, in association with ignitability, largely determines the rate of frame spread. Both the rate of heat release and the total heat of combustion of PVC are significantly lower than those of other common thermoplastics.
SPREAD OF FLAME AND RESISTANCE TO STANDARD COMBUSTION	PVC has limited spread of flame characteristics and achieves high classification in national building fire tests. PVC tends to form a protective carbonaceous layer (or char). This insulates the material below and excludes the oxygen necessary for combustion. The hydrogen chloride emitted acts as a combustion inhibitor.
SMOKE DENSITY	Smoke densities are similar to wood under smouldering conditions but greater under flaming conditions.
CORROSIVITY OF COMBUSTION GASES	Metallic materials may suffer from some corrosion by hydrogen chloride but restoration is normally possible. Fears of the effects on structural elements of buildings have been shown to be unfounded.
TOXICITY OF COMBUSTION GASES	Although hydrogen chloride is a main gaseous product of the combustion of PVC the toxic potency of the combustion gases of PVC is similar to and certainly not significantly worse than those from many natural and synthetic materials. The build up of toxic fumes will be slow when compared with rapidly burning materials of a similar toxic potency.
OVERALL	Resistance to ignition and how well flame is supported and spread are the most significant properties which contribute to fire safety. PVC is particularly good in this respect and this is recognised in the UK Building Regulations. The toxic potency of PVC decomposition products is similar to that of most other materials. Overall therefore PVC is a widely acceptable material which does not represent a greater fire hazard than other synthetic or natural organic materials.

Condensation - Cause & Effect

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PERFORMANCE
Condensation is a relatively new phenomenon resulting mainly from changes in lifestyle and our desire to keep heating costs as low as possible. Condensation is related to the way we heat, ventilate and insulate our homes. In days gone by, most homes had one or two chimneys; allowing up to four air changes per hour. Doors and windows were generally less well fitting than they are today. This natural ventilation was the very process which prevented condensation. To cope with increased fuel costs came the trend to insulate. This resulted in loft insulation, cavity wall insulation and double glazing. However, it is also a fact that energy-efficient homes are more likely to suffer condensation because	anything that keeps warm air in will also keep fresh air out, creating the ideal conditions for condensation to form. Before we tackle the problem, we have to understand exactly what condensation is, then find the best way to deal with it. Condensation is merely the air's natural moisture content settling on cool surfaces. The amount of moisture in the air is called relative humidity. If the humidity level rises above 70% mould and mildew will be encouraged to grow. Astonishingly, the average family created up to 20 pints of moisture every day, simply by washing, cooking and breathing. This moisture must go somewhere and be dealt with to avoid condensation.
WHAT IS CONDENSATION?	Condensation is water vapour suspended in air.
WHERE DOES MOST WATER VAPOUR COME FROM?	The most common sources of water vapour are cooking, drying clothes on radiators, washing up, in-house plants, moisture in newly-built properties and extensions and from the breath we exhale. Due to the thermal currents within a house, condensation can occur in a number of places, usually at cold spots, i.e. an unheated room or a conservatory without any form of adequate heating.
WHERE CAN CONDENSATION OCCUR?	Condensation forming on the room side surface of a sealed unit indicated a high water vapour content present and that the temperature of the room side glass surface is inadequate. Condensation within the airspace of the sealed unit indicated the unit has broken down. STATEMENT: 'I did not have condensation before my new windows were installed. There must be something wrong with them.' This is a common assumption but, unfortunately, it is also incorrect. Windows cannot and will not produce any water. This 'water' is produced by our normal living activities. Therefore we, the householder, have created the problem.
HOW DO I KNOW IF I HAVE CONDENSATION?	Condensation will take many forms, the most common being steaming windows and puddles of water on the windowsills. In extreme cases, dark spots of mould will appear around the windows, wall coverings and mastic seals throughout the house. If you have a non-condensing tumble dryer, make sure it is properly vented to the outside of your home. Remember, tumble dryers can create 16 pints of water vapour during one cycle.
HOW CAN DOUBLE GLAZING HELP?	Sealed unit replacement windows act as an insulator which will reduce heat loss which under normal circumstances, would be conducted from the inside of the room to the outside. Please remember that sealed units act as an insulator and are not a source of heat, therefore all rooms should be adequately heated – especially conservatories. The likelihood of condensation forming on a warm surface is therefore reduced.

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PERFORMANCE
HOW DO I REDUCE CONDENSATION?	Condensation can be controlled by providing natural ventilation to change air on a regular basis and by maintaining an even temperature. This is achieved through ventilation units which are controlled by humidistats, an airbrick, or by opening a window. Please remember that an airbrick must be open to achieve good results. An effective way of controlling condensation would be to install a dehumidifier. This cost would be avoided if the problem is one of ventilation, by installing an airbrick thereby creating ventilation or controlling those causes of moisture, that result in a build-up of moisture in the air.
BREATHING	Two sleeping adults exude two pints of moisture in eight hours, which is absorbed as water vapour by the atmosphere.
NEW PROPERTY	The bricks, timber, concrete and other materials in an average three bedroom house absorb 1,500 gallons of water. The same principle will apply to a conservatory base and the construction materials used. As with any new building work, please allow a period of drying out to ensure problems are not encountered in the future.
DOUBLE GLAZING CANNOT CAUSE CONDENSATION	By acting as a heat barrier and providing an inner pane which is considerably warmer than the outer pane, the likelihood of condensation forming is reduced.
CONCLUSION	Condensation is a result of the build-up of moisture caused by our normal lifestyle and the continual improvement and modernisation of our homes. Replacement windows cannot produce condensation. Double glazing will act as an insulator if there is sufficient heat within the house in the beginning. Therefore it is wise to attempt to control the amount of water vapour displaced within the household and to provide controlled ventilation to dispel this moisture before the problem arises.
BATHROOMS & KITCHENS	Prevent water vapour finding its way into the other rooms of your house by closing the adjoining door and leaving a window open after cooking or showering to allow a change of air. Extractor fans and cooker hoods work well for this purpose. If you find dark mould spots forming, treat the affected areas immediately with a solution of household bleach or Milton fluid. This will kill the mould spores and prevent them from spreading to other areas. All new houses with improved insulation and replacement windows are likely to trap moisture build-up. This can be identified and dealt with, as long as all the rooms are heated throughout the house, and the air is changed on a regular basis.
	REMEMBER IT IS FAR EASIER TO TREAT THE CAUSE THAN THE EFFECT

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PERFORMANCE

Moisture proofing serves the general comfort of human beings and provides protection against structural damage. Apart from the fact that dampness from the outside must be prevented, the actual use of a building can cause condensation to occur on the inner surfaces or in the interior of a structure. When thermally insulating a structure, one must always take care that moisture proof materials on the warm side and moisture-pervious materials on the cold side are fitted.

RELATIVE AIR HUMIDITY is the ratio expressed as a percentage of the quantity of evaporated water in kilogrammes contained in the air at temperature, to the maximum possible quantity of evaporation at the same temperature. For example at 20°C atmospheric temperature, the air is saturated at - 17.3g/m³ absolute humidity (= 100% relative humidity)

TEMPERATURE OF DEW POINT t. If the point of absolute humidity reaches saturation point while the temperature is falling, the dew-fall begins to take place. The following factors influence the formation of condensation on the inner surface on aluminium or PVC-U windows.

1) The Inner Surface temperature - this is dependent on the difference between the outside temperature and room temperature, the thermal resistance of the profiles fitted, and of the glass pane and wall connection, the shape of the profile, the actual interior and exterior heat transmission coefficients (movements of air, surface design, thermal radiation).

2) The relative air humidity on the room.

Room Air Temperature °C	Max. Humidity g/m³	Permissible cooling of the air in degrees up to the formation of dew at a relative air humidity in percent														
		30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	
-20	0.90	-	10.70	9.10	8.00	7.00	6.00	5.20	4.40	3.70	3.00	2.40	1.70	1.10	0.60	
-15	1.40	12.40	10.90	9.60	8.40	7.40	6.40	5.50	4.60	3.80	3.10	2.40	1.80	1.10	0.60	
-10	2.14	12.90	11.30	9.90	8.70	7.60	6.50	5.60	4.70	3.90	3.20	2.50	1.80	1.20	0.60	
-8	2.54	13.10	11.50	10.10	8.80	7.70	6.60	5.70	4.80	4.00	3.20	2.50	1.90	1.20	0.60	
-6	2.99	13.30	11.70	10.20	8.90	7.80	6.80	5.80	4.90	4.10	3.30	2.60	1.90	1.20	0.60	
-4	3.51	13.50	11.80	10.40	9.10	7.90	6.90	5.90	5.00	4.20	3.40	2.60	1.90	1.20	0.60	
-2	4.13	13.70	12.00	10.50	9.20	8.10	7.00	6.00	5.10	4.20	3.40	2.60	1.90	1.30	0.60	
0	4.80	13.80	12.20	10.70	9.40	8.20	7.10	6.00	5.10	4.30	3.40	2.70	2.00	1.30	0.70	
2	5.60	14.30	12.60	11.10	9.70	8.50	7.40	6.40	5.40	4.60	3.70	3.00	2.20	1.50	0.70	
4	6.40	14.70	13.00	11.50	10.10	8.80	7.70	6.70	5.80	4.90	4.00	3.20	2.30	1.50	0.70	
6	7.30	15.10	13.40	11.80	10.40	9.20	8.10	7.10	6.10	5.10	4.10	3.20	2.30	1.50	0.70	
8	8.30	15.60	13.80	12.20	10.80	9.60	8.40	7.30	6.20	5.10	4.20	3.20	2.40	1.60	0.80	
10	9.40	16.00	14.20	12.60	11.20	9.90	8.60	7.40	6.30	5.20	4.20	3.30	2.40	1.60	0.80	
12	10.70	16.40	14.60	13.10	11.60	10.10	8.80	7.50	6.40	5.30	4.30	3.40	2.50	1.60	0.80	
14	12.10	16.90	15.10	13.40	11.70	10.30	8.90	7.60	6.50	5.40	4.40	3.40	2.50	1.60	0.80	
16	13.90	17.40	15.50	13.60	11.90	10.40	9.00	7.80	6.60	5.50	4.40	3.50	2.50	1.70	0.80	
18	15.40	17.80	15.70	13.80	12.10	10.60	9.20	7.90	6.70	5.60	4.50	3.50	2.60	1.70	0.80	
20	17.30	18.10	15.90	14.00	12.30	10.70	9.30	8.00	6.80	5.60	4.60	3.60	2.60	1.70	0.80	
22	19.40	18.40	16.20	14.20	12.50	10.90	9.50	8.10	6.90	5.70	4.60	3.60	2.60	1.70	0.90	
24	21.80	18.60	16.40	14.40	12.70	11.10	9.60	8.30	7.00	5.80	4.70	3.70	2.70	1.80	0.90	
26	24.40	18.90	16.70	14.70	12.90	11.20	9.70	8.40	7.10	5.90	4.80	3.70	2.70	1.80	0.90	
28	27.20	19.20	16.90	14.90	13.00	11.40	9.90	8.50	7.20	6.00	4.90	3.80	2.80	1.80	0.90	
30	30.30	19.50	17.10	15.10	13.20	11.60	10.00	8.60	7.30	6.10	4.90	3.80	2.80	1.80	0.90	
35	39.40	20.20	17.80	15.60	13.70	12.00	10.40	8.90	7.60	6.30	5.10	4.00	2.90	1.90	0.90	
40	50.70	20.90	18.40	16.20	14.20	12.40	10.80	9.30	7.90	6.50	5.30	4.10	3.00	2.00	1.00	
45	64.50	21.60	19.60	16.80	14.70	12.90	11.20	9.60	8.10	6.80	5.50	4.30	3.10	2.00	1.00	
50	82.30	22.40	19.70	17.40	15.20	13.30	11.60	9.90	8.40	7.00	5.70	4.40	3.20	2.10	1.00	

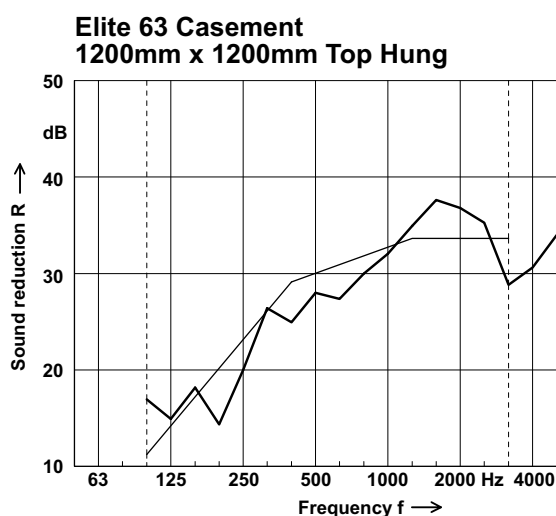
CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PERFORMANCE

TYPICAL OUTSIDE NOISE LEVEL	INSIDE NOISE LEVEL NOT TO BE EXCEEDED		RECOMMENDED dBA VALUE OF WINDOW	SUGGESTED GLAZING
60 dBA = Normal living and environment noise. Conversation at 1m distance.	Bedroom, children's room.	25-30 dBA	30-34 dBA	Standard DG unit
	Living room, play room.	30-35 dBA	25-29 dBA	Standard DG unit
	Kitchen, utility room.	35-40 dBA	Up to 24 dBA	Standard DG unit
	Office, hall, reception.	40-50 dBA	Up to 24 dBA	Standard DG unit
70 dBA = Noisy environment and traffic sound. Cars at 5m distance.	Bedroom, children's room.	25-30 dBA	40-44 dBA	44-47 dBA unit
	Living room, play room.	30-35 dBA	36-29 dBA	40-42 dBA unit
	Kitchen, utility room.	35-40 dBA	30-34 dBA	Standard DG unit
	Office, hall, reception.	40-50 dBA	25-29 dBA	Standard DG unit
80 dBA = Street noise during heavy traffic. Main road continuous traffic.	Bedroom, children's room.	25-30 dBA	45-49 dBA	Double window
	Living room, play room.	30-35 dBA	45-49 dBA	Double window
	Kitchen, utility room.	35-40 dBA	40-44 dBA	44-47 dBA unit
	Office, hall, reception.	40-50 dBA	30-34 dBA	Standard DG unit
Over 80 dBA = Very heavy traffic noise, car horns, factory noise.	Bedroom, children's room.	25-30 dBA	Over 50 dBA	Double window
	Living room, play room.	30-35 dBA	Over 50 dBA	Double window
	Kitchen, utility room.	35-40 dBA	45-49 dBA	Double window
	Office, hall, reception.	40-50 dBA	35-39 dBA	40-42 dBA unit

Testing

Results of sound insulation tests carried out on Spectus casement windows (to BS EN ISO 140 Part 3:1995) are shown below.

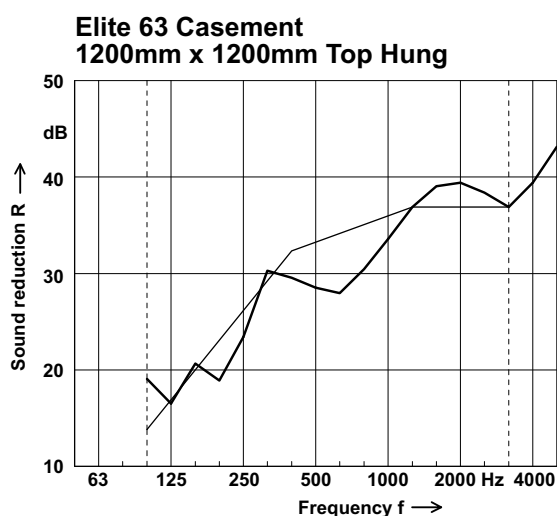
R_w is the weighted sound reduction index value calculated in accordance with BS EN ISO 717-1:1997.



Glass specification 4/20/4 (28mm)

R_w = 30dB

—:R
---:Shifted ref. curve (ISO 717)



Glass specification 4/17/7 Audioscreen (28mm)

R_w = 33dB

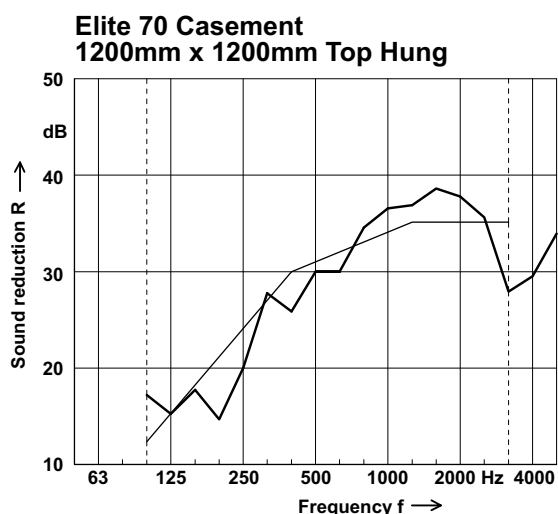
CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PERFORMANCE

Testing

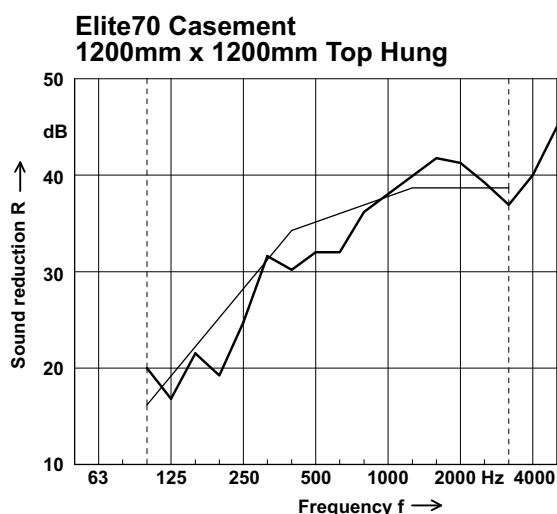
Results of sound insulation tests carried out on Spectus casement windows (to BS EN ISO 140 Part 3:1995) are shown below.

R_w is the weighted sound reduction index value calculated in accordance with BS EN ISO 717-1:1997.

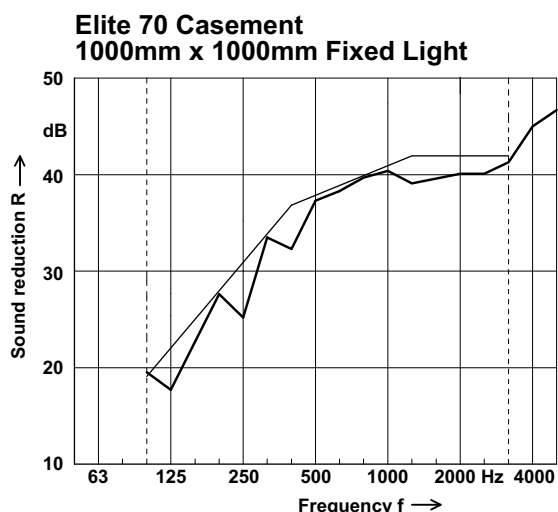
—:R
—:Shifted ref. curve (ISO 717)



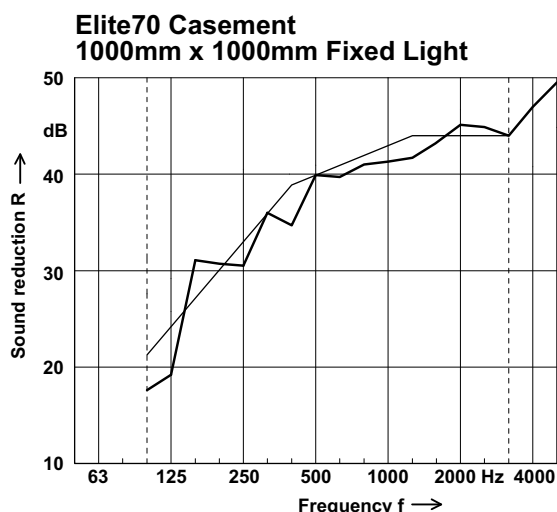
Glass specification 4/20/4 (28mm)
R_w = 31dB



Glass specification 4/17/7 Audioscreen (28mm)
R_w = 35dB



Glass specification 10/20/6.4 Laminated (28.4mm)
R_w = 38dB



Glass specification 10/20/8.8 44.2-Stratophone (38.8mm)
R_w = 40dB

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PERFORMANCE

Approved Document L of the building regulations for England and Wales

The regulations allow for different methods of proving compliance. This depends upon whether the building is a dwelling or not, and whether the building is new or existing.

The four methods of compliance are :-

- Whole Window U Value
- CO₂ emissions
- Window Energy Rating (WER)
- Glass centre pane U value

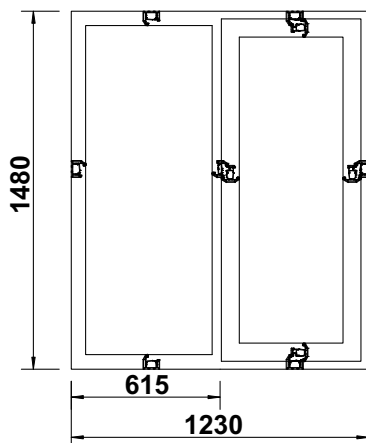
• Whole Window U Values

The thermal transmission of the whole window can be derived using the simplified calculation method in BS EN 10077.1 as shown below:-

$$U_w = \frac{A_g \cdot U_g + A_f \cdot U_f + l_g \cdot \Psi_g}{A_g + A_f}$$

Example: Elite 70

(Intermediate Outer Frame, Soft Coat & Argon)



Where :-

$A_g = 1.252$ (area of glass)

$U_g = 1.219$ (thermal transmittance of glass)

$A_f = 0.568$ (area of frame)

$U_f = 1.440$ (thermal transmittance of frame)

$l_g = 7.151$ (Total perimeter of glazing)

$\Psi_g = 0.06$ (linear thermal transmittance of frame/
glazing junction)

$$U_w = 1.5 \text{ W/(m}^2\text{K)}$$

The simplified method is generally used to provide U-value calculations for specific windows.

Whole window U-values are affected by:-

Size and configuration of window

The example shown uses the standard window size and configuration (1230mm x 1480mm sash next to fixed). This is from Annex E of BS EN 14351-1. Different windows will produce a different whole window U-value.

U_g - Thermal transmittance of glass

The example shown uses a thermal transmittance of glass (U_g) of 1.2. This figure varies according to the make-up of the double glazed unit (glass type, argon fill, etc) This information should be available from glass suppliers.

U_f - Thermal transmittance of frame

The example shown uses a thermal transmittance of frame (U_f) of 1.440. This figure is typical for the Elite 70 window system and has been extrapolated from testing carried out at the National Physics Laboratory.

Ψ_g - Thermal transmittance of frame/glazing

The example shown uses a linear thermal transmittance of frame/glazing junction (Ψ_g) of 0.06. This is a typical figure for an aluminium spacer bar. Using warm edge spacer bars will produce a different figure.

• CO₂ emissions

These will be calculated for the whole building by the architect/engineer. The CO₂ emissions calculation methods are :-

- Target CO₂ Emissions Rating (TER)
- Standard Assessment Procedure (SAP)
- Standard Buildings Emission Method (SBEM)

Target CO₂ Emissions Rating (TER)

This only applies to new dwellings and the maximum U-value allowed is 2.0 for windows & doors.

Standard Assessment Procedure (SAP)

This is the governments standard assessment procedure for energy rating of dwellings.

Standard Buildings Emission Method (SBEM)

This only applies to non-dwellings and for most projects a U-value of 2.0 will be assumed for windows.

Thermal - Window Energy Rating (WER)

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PERFORMANCE

Window Energy Rating (WER)

Windows lose heat through the various parts of the window and through a range of heat transfer methods. Window energy rating is a method of assessing the complete window and producing a single number to rate the energy efficiency of a specific type of window.

Windows are rated by three types of energy flow:

- Solar heat gain (g-value) - Positive
- Thermal Transmittance (U-value) - Negative
- Air Leakage (L-value) - Negative

Each type of energy flow has an effect on the overall energy efficiency of the product.

Solar heat gain (g-value)

Solar heat is reflected, absorbed and transmitted through the glass. The solar heat gain (g-value) measures the amount of solar heat gained by the inside as a percentage of the solar heat from outside. E.g. If the solar radiation outside is taken as 100%, and the solar radiation inside measures 40%, then $g = 0.40$

Thermal transmittance (U-value)

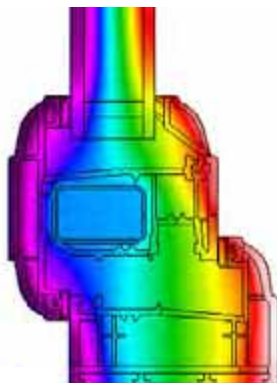
The U-value measures the amount of thermal transmittance lost through the window through convection, conduction and radiation. Lower U-values are better than higher U-values. E.g. Typical single glazing gives a U-value of $6.0 \text{ W/m}^2\text{k}$, whereas typical double glazing with a low-E coating gives a U-value of $1.7 \text{ W/m}^2\text{k}$.

Air Leakage (L-value)

The L-value measures the warm air loss from inside to outside. This occurs at the joint between the opening sashes and frame members and the joint between the frame/bead and the glass.

WER Modelling Process

Specific window cross section drawings are imported into modelling software along with the known thermal conductivity of each element. The software then calculates the WER and can also generate graphical representations of temperature gradients of the cross-section drawing.

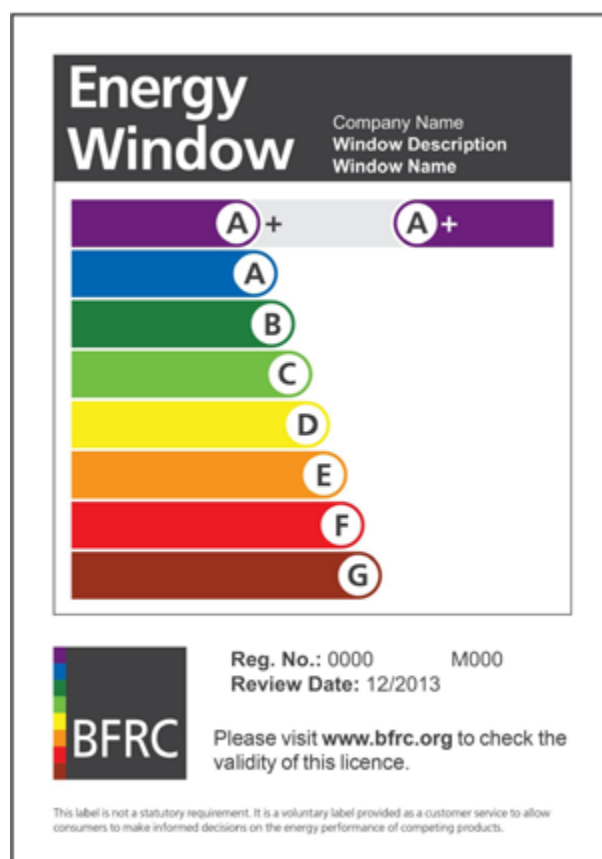


British Fenestration Rating Council (BFRC)

The British Fenestration Rating Council (BFRC) is an independent body that controls energy rating of windows in the UK, as part of the European Window Energy Rating scheme.

BFRC Labelling

Windows can now carry energy ratings or labels, similar to those already seen on household appliances such as refrigerators and washing machines. Windows are rated using a familiar A to G scale on the basis of their total energy efficiency, where an A-rated window is more energy efficient than a G-rated window. When windows have the same letter, the Energy Index ($\text{kWh/m}^2\text{/year}$) can be used for comparison. This gives details of the energy consumption or gain for the sample window.



Note: Example label only

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PERFORMANCE

Door Set Energy Rating (DSER)

In September 2011 the BFRC extended the current Window Energy Rating scheme to cover doorsets of various types.

Doorsets are rated by three types of energy flow:

- Solar gain (g-value) - Positive
- Thermal Transmittance (U-value) - Negative
- Air Leakage (L-value) - Negative

Each type of energy flow has an affect on the overall energy efficiency of the product.

Unlike the Window Energy Rating scheme, doors are split into different classifications for the purpose of rating them. This is due to the different requirements with regard to the inclusion of solar gain as part of the rating equation.

Classifications

1. External Pedestrian Doorsets:

These are basic entrance/exit doors. There are three categories dependant on glass area. No solar gain is applicable to this door type and so the formula & band cut-offs, for calculating the Energy Rating, are different to that for windows.

2. Sliding Patio & French Doorsets:

Both of these types of doorset will include solar gain and will use the Window Energy Rating formula and band cut-offs to calculate the Energy Rating.

3. Sliding Folding (Bi-Fold) Doorsets:

This type of doorset will include solar gain and will use the Window Energy Rating formula and band cut-offs to calculate the Energy Rating.



U-COMPLY

The U-Comply N calculator allows you to demonstrate compliance on any number of window and door specifications. As well as eliminating the significant costs in testing different specifications of windows and doors, you can also use U-Comply N to demonstrate compliance with the new regulations. U-Comply N has been independently audited by BSI, BFRC and CERTASS therefore allowing fabricators to show compliance with Document 'L' of the Building Regulations using either U-values or WERs/DSERs.

BSI have also given U-Comply N its European Notified Body Approval, therefore Window/Door U Values can be used by Fabricators/Installers for their CE Marking Declaration of Thermal Transmittance.

Building Regulations



CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	BUILDING REGULATIONS

Approved Documents and Building Regulations publications.

Practical guidance on ways to comply with the functional requirements in the Building Regulations is outlined in a series of 'Approved Documents' published by the Department for Communities and Local Government. Each Document contains:

- general guidance on the performance expected of materials and building work in order to comply with each of the requirements of the building regulations; and
- practical examples and solutions on how to achieve compliance for some of the more common building situations.

All of the latest 'Approved Documents' can be downloaded free on the Planning Portal at:

www.planningportal.gov.uk/approveddocuments

Due to the rate of change of the requirements of the Building Regulations it is recommended that the current version is referred to in all instances.

Relevant Approved Documents

Part B (Fire safety)

This section covers the technical guidance contained in Part B of schedule 1 of the Building Regulations concerned with the requirements with respect to fire safety.

The main area of interest with regard to windows and doors is ensuring that there are a sufficient number of adequate escape routes suitably located to enable persons to escape to a place of safety in the event of a fire.

Part E (Resistance to sound)

This section covers the technical guidance contained in Part E of schedule 1 of the Building Regulations, with the requirements with respect to resistance to sound.

Part F (Ventilation)

This section covers the technical guidance contained in Part F of schedule 1 of the Building Regulations concerned with the requirements with respect to ventilation.

Part K (Protection from falling, collision and impact)

This section covers the technical guidance that supports Part K of schedule 1 of the Building Regulations, with the requirements with respect to protection from falling.

Part L (Conservation of fuel and power)

This section covers the technical guidance contained in Part L of schedule 1 of the Building Regulations concerned with the requirements with respect to Conservation of fuel and power.

Approved Document is split into four parts:

Approved Document L1A:

This covers New Dwellings.

Approved Document L1B:

This covers Existing Dwellings.

Approved Document L2A:

This covers New Buildings other than Dwellings.

Approved Document L2B:

This covers Existing Buildings other than Dwellings.

The main area of interest with regard to windows and doors is the performance with regard to thermal transmittance (U value) and/or Energy Rating. The actual performance criteria required will depend on the building type and the calculation method being used.

Part M (Access to and use of buildings)

This section covers the technical guidance contained in Part M of schedule 1 of the Building Regulations concerned with the requirements with respect to access to and use of buildings.

Compliance

All Spectus Window Systems products are able to meet the relevant requirements of the Building Regulations.

2 Product Characteristics

Glass



Glass - Maximum Glass Sizes

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	GLASS

CLEAR GLASS

(Annealed, Toughened or Laminated) is obtainable in very large sizes, but the maximum width or height should not exceed 2500mm.

The maximum glass area is dependent on the type of glazing and the situation of the installation:-

The table below is extracted from BS6262 and is based on a Design Wind Pressure of 1200 pa

SAFETY GLASS

All glazing must conform to BS6262 'British Standard Code of Practice for Glazing for buildings'.

The following basic information on safety glazing is provided for general guidance only.

Annealed Glass = Float, polished plate and patterned glass.

Safety Glass = Toughened or laminated glass.

GLAZING OPTIONS			
THICKNESS	ANNEALED	LAMINATED	TOUGHENED
4mm	2m ²	N/A	3m ²
6mm	5m ²	4.5m ²	7m ²
4+4	4m ²	N/A	6m ²
6+6	10m ²	9m ²	7m ²

PATTERNED GLASS

Should not exceed a maximum size of 1320mm x 2140mm

Glass Weight

Single Glaze 4mm thick = 10 Kg/m²
 6mm thick = 15 Kg/m²

Double Glaze 4-20-4 = 20 Kg/m²
 6-16-6 = 30 Kg/m²

Triple Glaze 4-16-4-16-4 = 30 Kg/m²

Glass pane weights can be calculated at 2.5kg/m² per mm thickness.

HANDLING

It should be noted that large units are more prone to damage, due to the difficulty of handling and access limitations (size and weight), probably requiring additional personnel, both in factory and on site.

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	GLASS

TOUGHENED GLASS is produced by subjecting annealed glass to a process of heating and rapid cooling which can increase its strength to four or five times that of annealed glass. However, the wind loading (deflection) will be identical to that of annealed glass.

It should be pointed out that toughened glass is a finished product, and as such cannot be cut or drilled. All such work on the glass must be carried out prior to toughening.

On fracturing, toughened glass will disintegrate into small particles which are unlikely to cause cutting and piercing injuries, which could occur with fractured annealed glass.

LAMINATED GLASS is produced by combining two or more panes of glass with layers of polyvinylbutyral (p.v.b.), or with resin interlayers.

The performance varies with the number and types of glass and interlayers to achieve safety, security, bullet, blast and fire resistance etc.

Laminated glass can be cut to size and supplied from stock by the supplier.

When fractured, the pieces of glass are held together by the interlayers and the danger of injuries are minimised.

Windows

Safety glass must be used for glazing windows that are wholly or partially within 800mm from floor level and other risk areas, such as stairways and landings etc.

In domestic applications, provided the area of the double glazed unit does not exceed 2.5m², then annealed glass may be used. If the area of the glass exceeds 2.5m² then safety glass must be specified.

Doors

It is recommended that safety glass, either toughened or laminated, is used in Residential and Patio doors and side panels.

The information provided is the minimum standard recommended, based on a domestic situation where

few people use the area. These standards are not applicable for public or commercial buildings. When choosing the glazing of risk areas, the following criteria should be considered. These include the type of people using the building and its function. For example, special consideration should be given to areas where young children play or where elderly or infirm people could fall against a window (landing, bottom of stairs etc). Under these circumstances safety glass should be specified.

Where safety glass is required, it is recommended that toughened glass is used as the standard safety glass and laminated glass only supplied when specified.

If any doubt is experienced when considering glass choice for a particular application, you are strongly advised to seek advice from your glass supplier.

Safe breakage is defined in:-

BS 6206 Specification for impact performance requirements for flat safety glass and safety plastics for use in buildings: clause 5.3

And is based on an impact test which requires the result of the impact to be limited to creating:

1. Small clear opening only, with a limit to the size of the detached particles.
2. Disintegration with small detached particles.
3. Breakage resulting in separate pieces that are not sharp or pointed.

Glass - Impact Performance & Breakage Characteristics

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	GLASS

Impact Performance

Glass and plastic materials, which are intended for use as safety glazing materials in critical locations in buildings where human impact can occur, should be classified according to their performance when subjected to a series of pendulum tests.

The impact test utilises a lead shot-filled leather bag weighing 45kg dropped like a pendulum from different heights.

Details of the impact tests are given in BS 6206 'Specification for impact performance requirements for flat safety glass and safety plastics for use in buildings'.

There are three safety glazing classifications: A (the highest), B, and C (the lowest).

- Toughened Glass would always obtain a Class A classification.
- Laminated Glass with a PVB (polyvinylbutyral) or CIP (cast-in-place) interlayer would normally achieve at least a Class B classification depending on the glass and interlayer thickness.
- Wired glass will obtain a Class C classification.

Glasses meeting these requirements and intended for use as safety glasses must be permanently marked as conforming to BS 6206.

Please contact your glass supplier for clarification of glass classification.

Breakage Characteristics

To assist designers and specifiers in selecting the most appropriate glazing, the breakage characteristics of the following materials are described.

ANNEALED GLASS

Annealed glass is the basic glass (e.g. float, patterned) from which the other glasses referred to in this annex are processed. If the annealed glass is broken and pieces are displaced, the resulting glass edges will be sharp.

WIRED GLASS

If wired glass is broken and the pieces are held together by wires, penetration is unlikely. However, if the wires are broken and the material is penetrated, the resulting glass edges will be sharp.

LAMINATED GLASS

The breakage characteristics will be similar to those of the types of glass used in its construction, but the pieces will remain substantially adhered to the interlayer. Depending on the type and thickness of the interlayer, the broken glass is unlikely to be penetrated.

TOUGHENED (TEMPERED) GLASS

Thermally toughened soda-lime glass is difficult to break, but if broken it fragments into small, relatively harmless pieces.

HEAT STRENGTHENED GLASS

If heat strengthened glass is broken the resulting edges will be sharp.

PLASTICS COVERED ANNEALED GLASS

This is annealed glass covered with specially formulated organic materials (e.g. thin applied films) intended to hold the glass together after breakage. If broken it will be difficult to penetrate provided that the covering is applied in accordance with the manufacturer's recommendations.

If in doubt, contact your glass supplier for advice and guidance on all aspects of glass and glazing.

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	GLASS

Manifestation of Glazing

Large areas of transparent glazing used to subdivide a building may not be immediately apparent, particularly under certain lighting conditions. People in passage in or about the building may not be aware of the glazing and may collide with it. The glazed areas referred to include large uninterrupted areas of transparent glazing which form, or are part of, the internal or external walls and doors of shops, showrooms, offices, public and other non-domestic buildings.

Permanent manifestation is only required when other means of indicating the presence of the glazing are not present.

When manifestation is required it should be of a sufficient size to be immediately obvious and should be positioned between 600 and 1500mm above floor level and preferably be permanent and durable.

Exceptions

There are some exceptions to the requirements for safety glass, these are based on the robustness of annealed glass:

1. Panes having the smaller dimension less than 250mm and of area less than 0.5m² may be minimum 6mm thick glass not complying with BS 6206.
2. Panes forming parts of fronts (but not other locations) to shops, showrooms, offices, factories and public buildings, supported on all edges, may be of equivalent robustness not complying with BS 6206. Annealed glass size limitations are as follows:
 - 8mm glass must not exceed 1100 x 1100mm.
 - 10mm glass must not exceed 2250 x 2250mm.
 - 12mm glass must not exceed 3000 x 4500mm.
 - 15mm glass (and thicker) no limit.

2 Product Characteristics

Maximum Size Limits

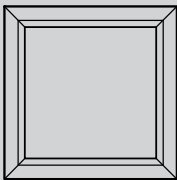
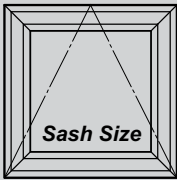
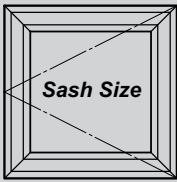
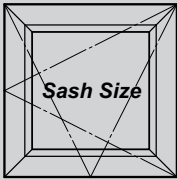
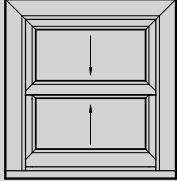


Minimum & Maximum Size Limits

Windows

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	SIZE LIMITS

Minimum and Maximum Window Sizes

Style	Minimum Size (mm)		Maximum Size (mm)	
	Width	Height	Width	Height
Fixed Light 	300	300	3000 <i>*must not exceed a maximum perimeter of 10m</i>	3000 <i>*must not exceed a maximum perimeter of 10m</i>
Top Hung Casement 	300	300	1200	1200
Side Hung Casement 	300	300	700 ————— 1300 or 650 ————— 1400	
Tilt & Turn 	350	550	1500 ————— 1500 or 1000 ————— 2000 <i>*vent width to height ratio must not exceed 1.5</i>	
Fully Reversible 	300	500	1500	1500
Vertical Slider 	350	700	1600	2800

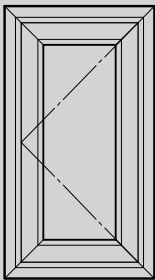
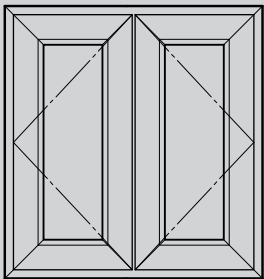
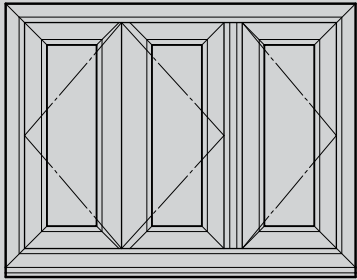
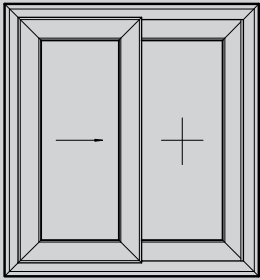
Note: Fixed light minimum size of 300mm, is based on typical welder limitations, smaller sizes can be manufactured if machinery allows it. Maximum sash sizes are generally based on units not exceeding 30kg/m² (2 x 6mm glass for double glazed, or 3 x 4mm for triple). Some high performing accoustic units may exceed this weight, and therefore could reduce the size limits.

Minimum & Maximum Size Limits

Doors

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	SIZE LIMITS

Minimum and Maximum Door Sizes

Style	Minimum Size (mm)		Maximum Size (mm)	
	Width	Height	Width	Height
Single Door 	500	1900	1084 <i>*based on a maximum leaf size of 1000mm</i>	2284 <i>*based on a maximum leaf size of 2200mm</i>
French Door 	1000	1900	2094 <i>*based on a maximum leaf size of 1000mm</i>	2284 <i>*based on a maximum leaf size of 2200mm</i>
Bi-Fold Door 	2 Panel 1268 3 Panel 1878 4 Panel 2462 5 Panel 3046 6 Panel 3630 7 Panel 3895	1900	1868 2778 3662 4546 5430 5995	2334 <i>*based on a maximum leaf size of 2200mm</i>
Ride Over Patio Door 	2 Panel 1490 3 Panel 2230 4 Panel 2890	1400	3000 4400 4600	2400

Note: Fixed light minimum size of 300mm, is based on typical welder limitations, smaller sizes can be manufactured if machinery allows it. Maximum sash sizes are generally based on units not exceeding 30kg/m² (2 x 6mm glass for double glazed, or 3 x 4mm for triple). Some high performing accoustic units may exceed this weight, and therefore could reduce the size limits.

Product Care



Product Care

General Maintenance: Open out Windows

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PRODUCT CARE

ALL PRODUCTS

Maintenance & Lubrication

1. Handles

Clean and lightly oil external moving parts annually.

2. Cleaning of Frames

To remove atmospheric grime, clean every four months with soap and water.

Check drain holes are free from obstruction. If blocked, remove obstruction and flush through with water to ensure correct drainage.

3. Mastic Seal

Check mastic seal, if any signs of cracking or shrinkage are found, remove and replace with new.

4. Recommended Lubricants

Castrol Everyman, E.R. Howard 3 in 1 oil, or equivalent. Use petroleum jelly for all keeps.

5. Service and Maintenance Booklet

This is available for distribution to Tenants and Householders, advising full requirements for Service and Maintenance of PVC-U Window & Door products.

OPEN OUT WINDOWS

1. Maintenance & Lubrication

To attain optimum performance, the hinges will require periodical maintenance and lubrication. The hinges, pivots, sliding shoe and track should be kept free of dirt, debris and obstructions at all times. At time of installation, lubricate all pivot points with light machine oil and wipe away excess. (One drop per pivot is sufficient).

Annually, clean any dirt or debris from the hinges. Apply lubrication as described above.

Check the tightness and security of all fixing screws and rivets.

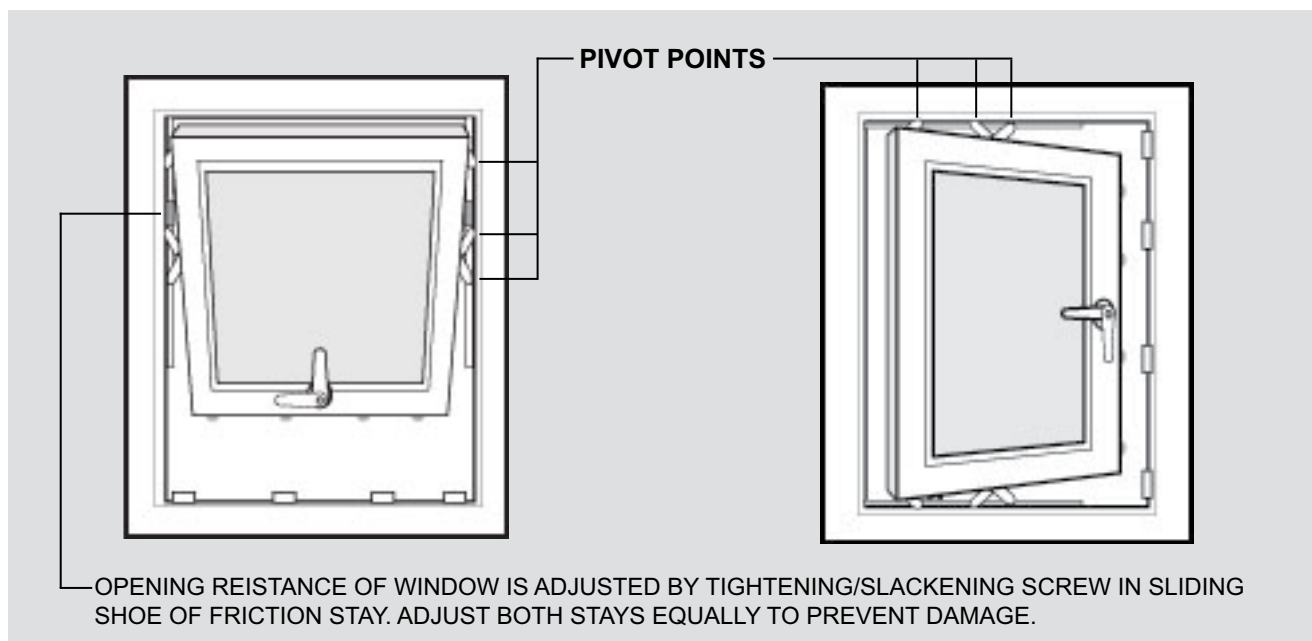
2. Espagnolettes/Shootbolt

Keep sliding mechanisms free from dirt and lubricate annually.

To achieve optimum weathering performance, adjust the locking cams by using a 4mm Allen key.

Product installation should reflect the recommendations laid down in

BS 8213-4 CODE OF PRACTICE FOR THE SURVEY AND INSTALLATION OF WINDOW AND EXTERNAL DOORSETS



Product Care

General Maintenance: Tilt & Turn Windows

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PRODUCT CARE

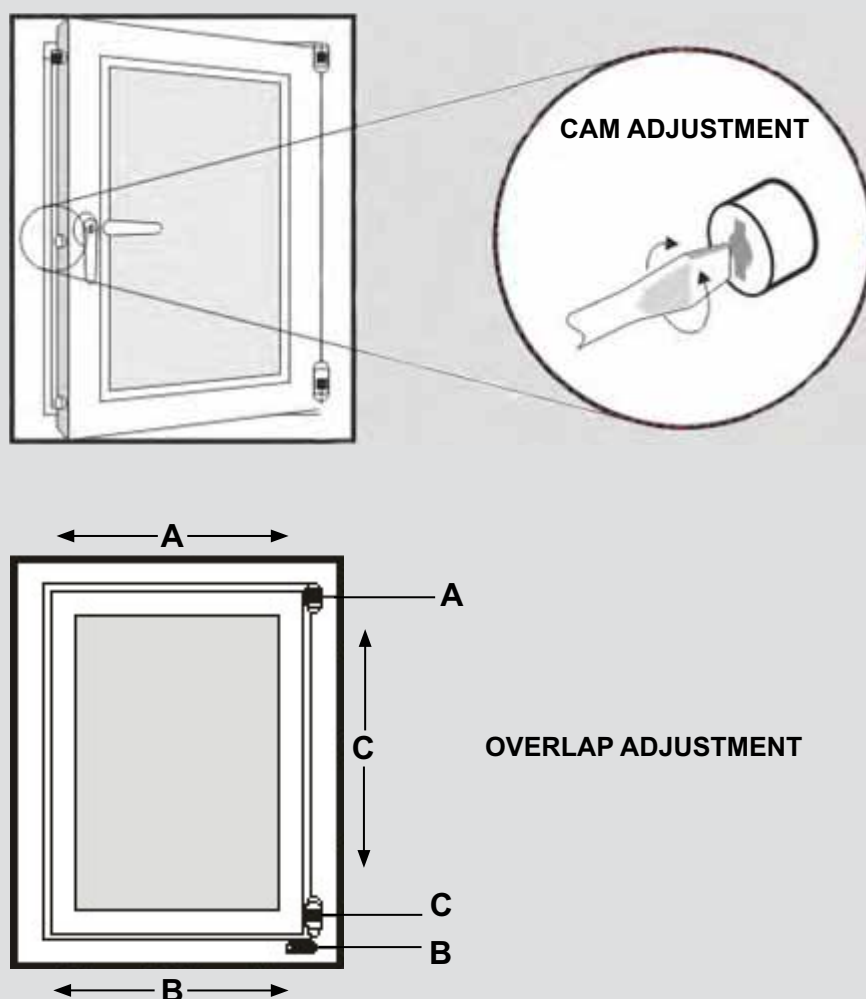
1. Maintenance & Lubrication

To attain optimum performance, hinges and locking points should be kept free from dirt and will require annual lubrication.

2. Adjustment

The sash may be adjusted as follows:-

- A Open sash to expose adjusting screw on end of scissor for horizontal adjustment at top, using 4mm Allen key.
- B Adjust bottom horizontally, using 4mm allen key to adjust floating hinge pin.
- C Adjust vertically using 4mm Allen key on vertical screw in bottom hinge.



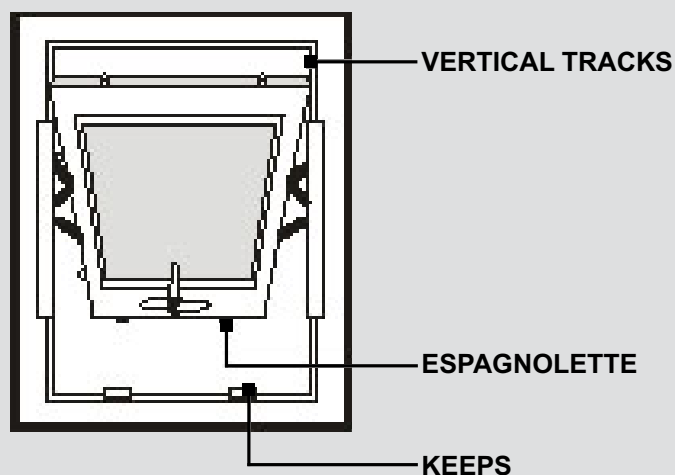
Product Care

General Maintenance: Fully Reversible Windows

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PRODUCT CARE

Maintenance & Lubrication

- 1. Pivot Hinges**
Keep hinges free of dirt and lubricate annually.
- 2. Vertical Tracks**
Lubricate with silicone grease annually.
- 3. Espagnolette**
Keep mechanism and keeps free of dirt and lubricate annually.
To achieve optimum weathering performance adjust the locking cams by using a 4mm Allen key.



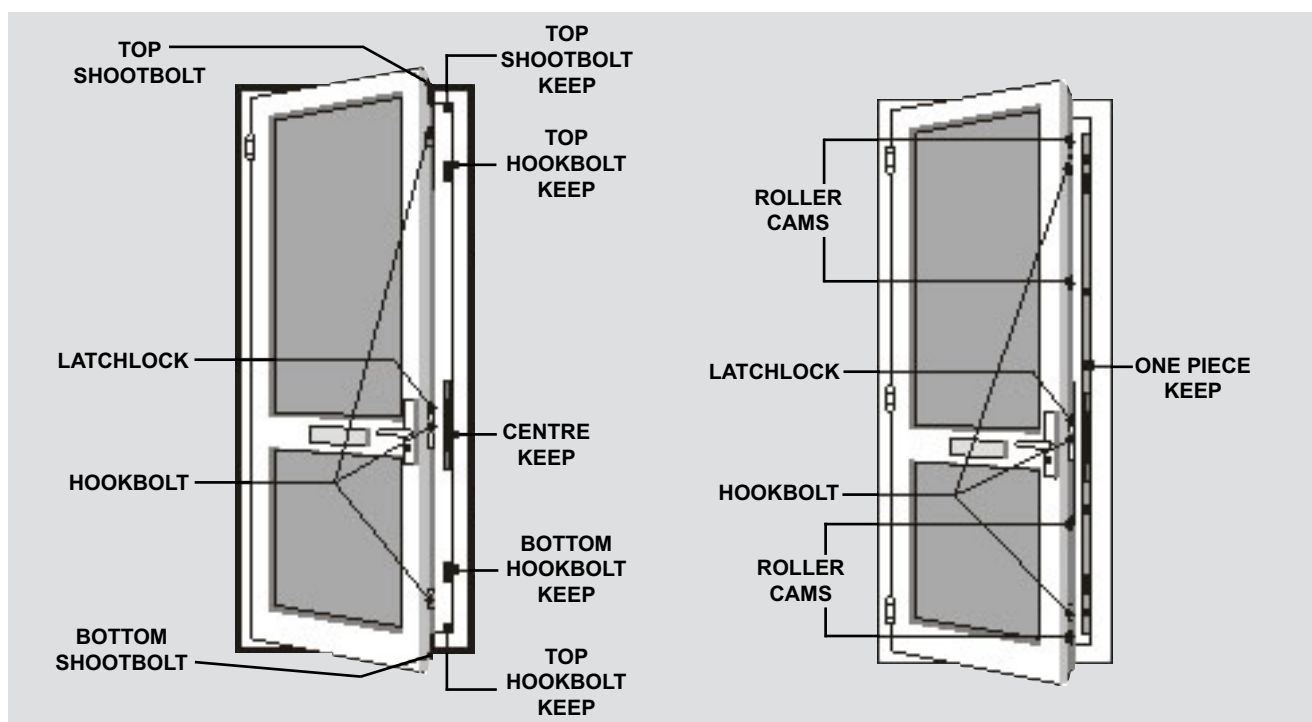
Product Care

General Maintenance: Residential Doors

CATEGORY	DESCRIPTION
PRODUCT CHARACTERISTICS	PRODUCT CARE

Maintenance & Lubrication

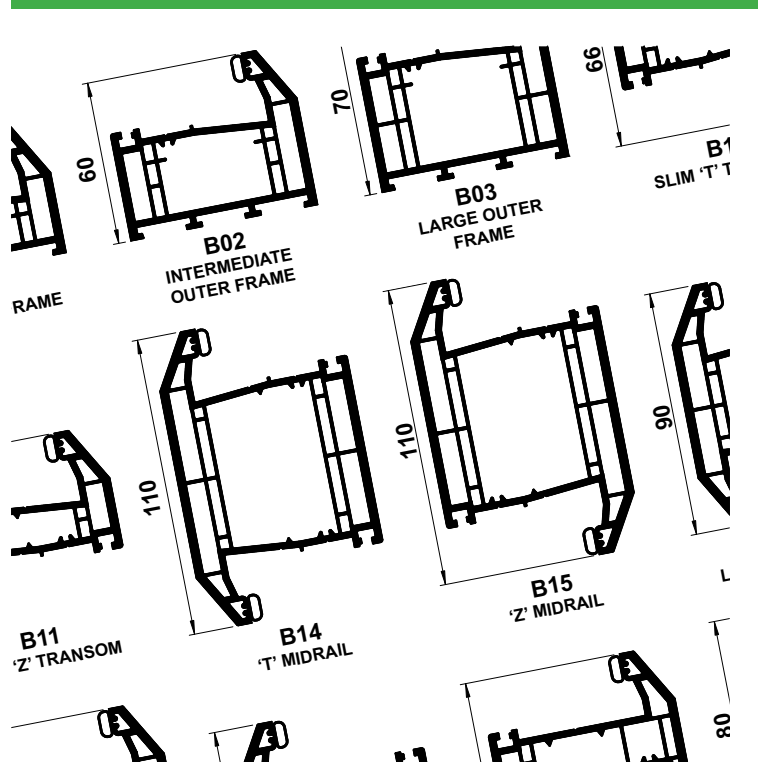
- 1. Adjustment of Springlatch & Hookbolts**
To achieve optimum weathering and acceptable handle operation, adjust the striker plates of the keeps to suit.
- 2. Adjustment of Springlatch, Centre Deadbolt & Cams**
To achieve optimum weathering and acceptable handle operation, adjust the centrelock keep to suit. The roller cams may be adjusted by using a flat bladed screwdriver or a 4mm Allen key.
- 3. Springlatch, Deadbolts, Cams & Keeps**
Clean and lightly grease external moving parts and frame keeps annually.
- 4. Hinges**
Clean and lightly oil hinge pins annually.
- 5. Letterbox**
Lightly oil springs on inside and outside flap annually.
- 6. Cylinder**
DO NOT ATTEMPT TO LUBRICATE LOCKING CYLINDER



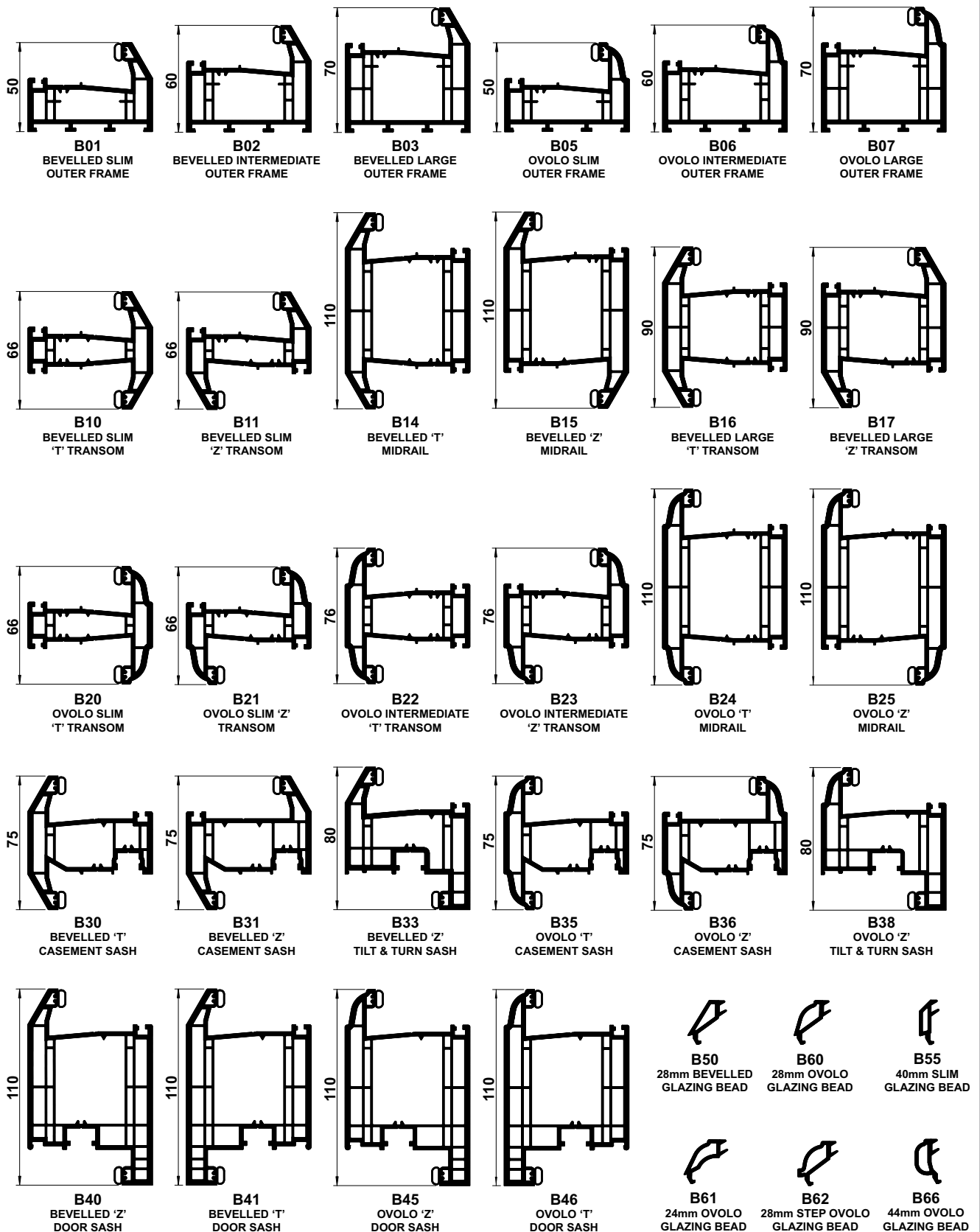
Product Charts
General Information

3 Reference

Product Charts

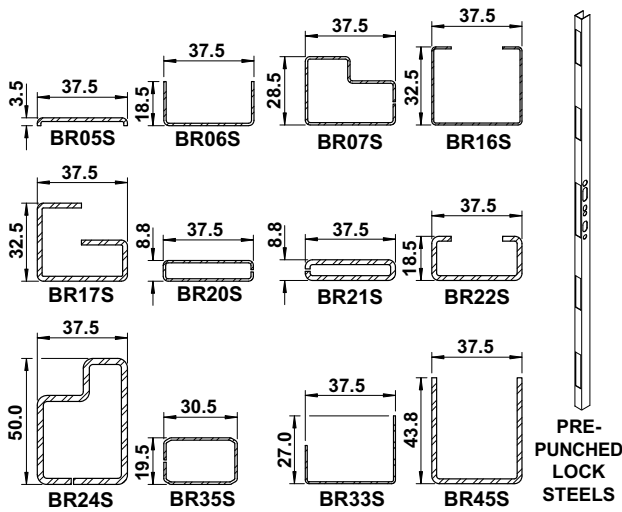


MAIN PROFILES

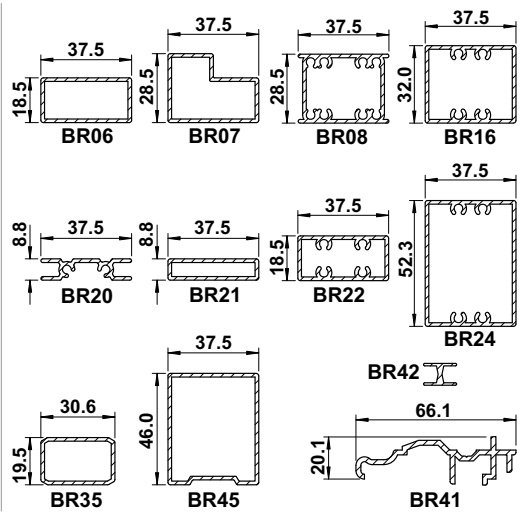


REINFORCEMENTS

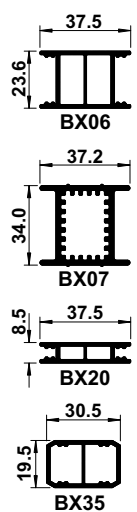
STEEL



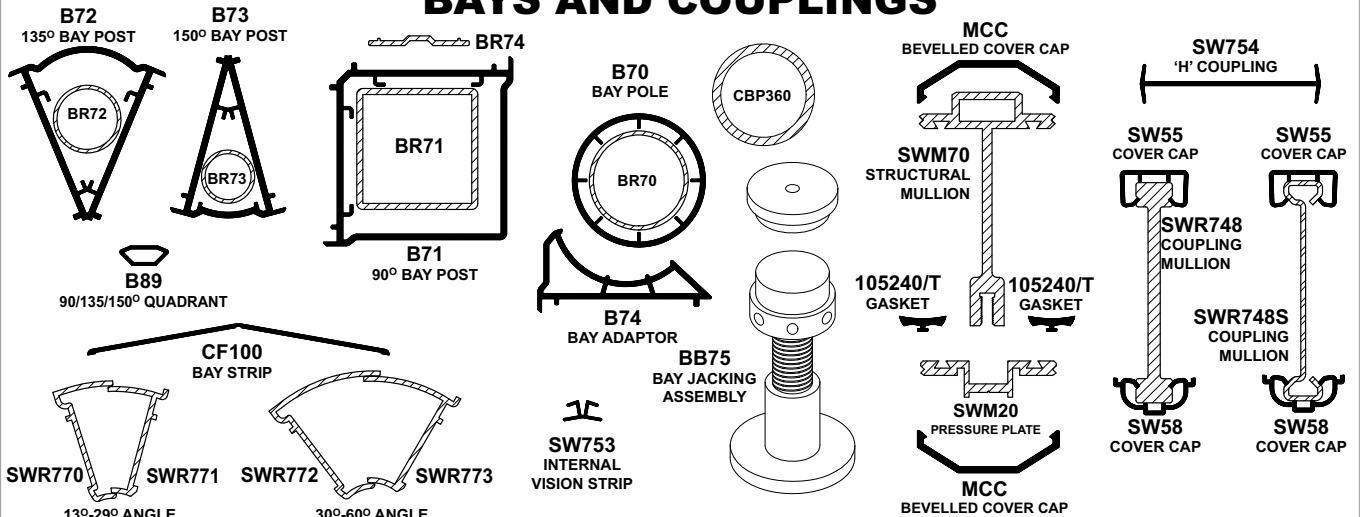
ALUMINIUM



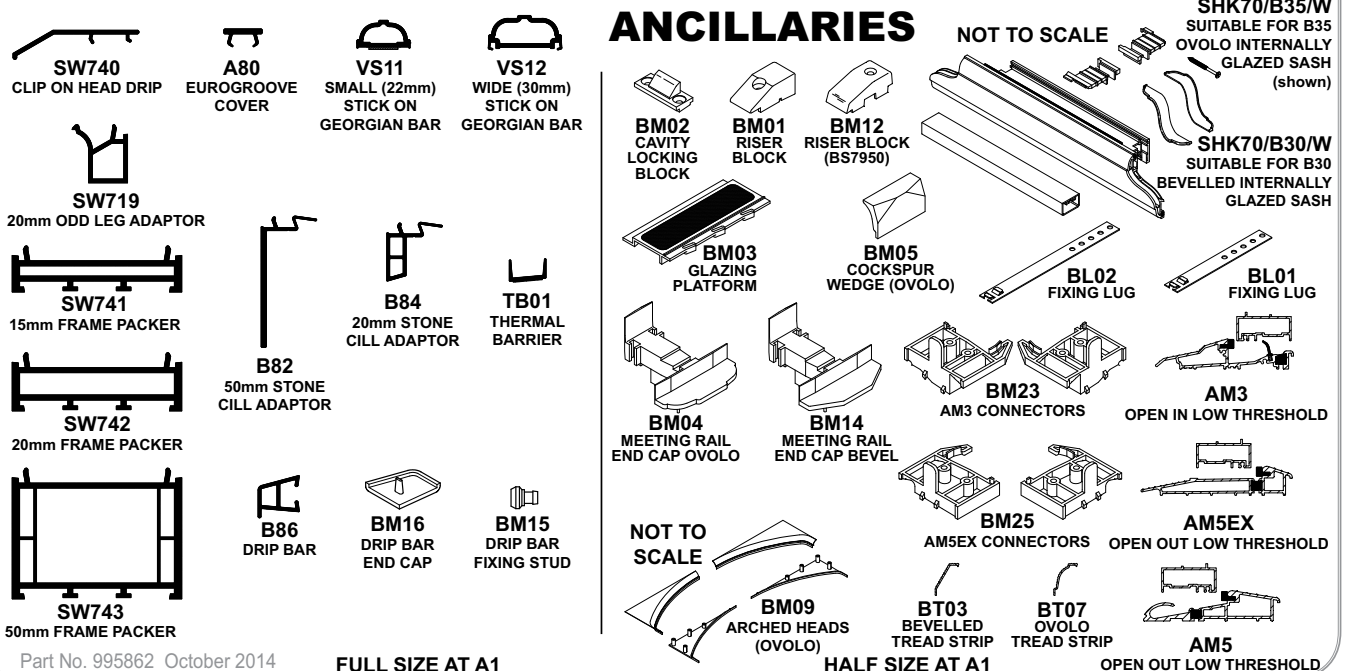
RCM



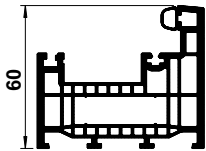
BAYS AND COUPLINGS



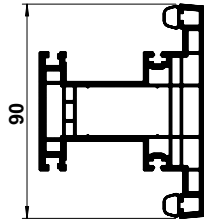
ANCILLARIES



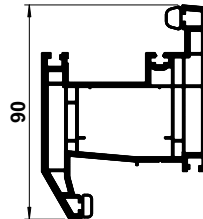
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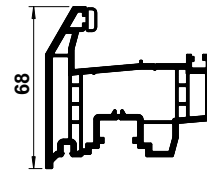
B102
REVERSIBLE
OUTER FRAME



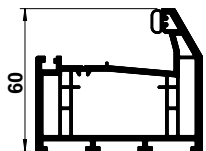
B116
REVERSIBLE
'T' TRANSOM



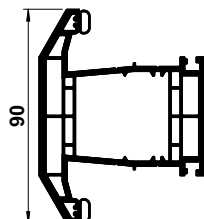
B117
REVERSIBLE
'Z' TRANSOM



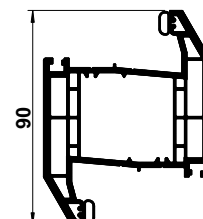
B130
REVERSIBLE
SASH



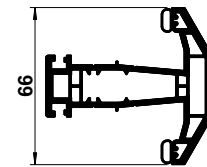
B02
GLAZED INTERMEDIATE
OUTER FRAME



B16
GLAZED
'T' TRANSOM



B17
GLAZED
'Z' TRANSOM



B10
DUMMY
'T' TRANSOM

GLAZING BEADS



B50
28mm BEVELLED
GLAZING BEAD



B55
40mm SLIM
GLAZING BEAD



B60
28mm OVOLO
GLAZING BEAD



B61
24mm OVOLO
GLAZING BEAD



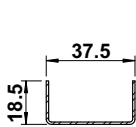
B62
28mm STEP OVOLO
GLAZING BEAD



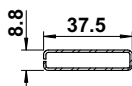
B66
44mm OVOLO
GLAZING BEAD

REINFORCEMENTS

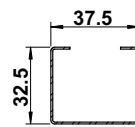
STEEL



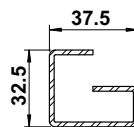
BR06S



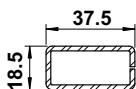
BR20S



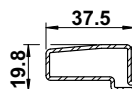
BR16S



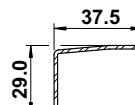
BR17S



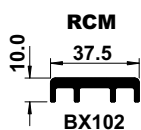
BR116S



BR130S

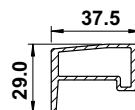


BR131S



BX102

ALUMINIUM



BR130

ANCILLARIES



B93
REVERSIBLE
HEAD DRIP



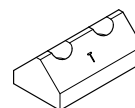
700616
FRINGE
SEAL



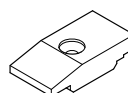
133700
BUBBLE
REPAIR GASKET



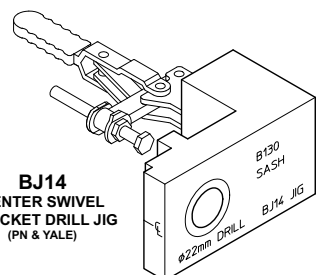
107461/T
BUBBLE
REPAIR WEATHERSEAL



350730
CAVITY
LOCKING BLOCK

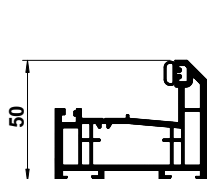


BM20
RISER BLOCK

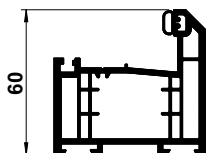


BJ14
CENTER SWIVEL
BRACKET DRILL JIG
(PN & YALE)

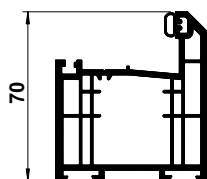
MAIN PROFILES



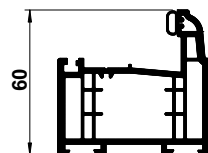
A01
CHAMFERED SLIM
OUTER FRAME



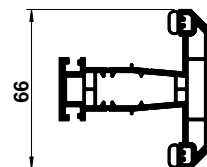
A02
CHAMFERED INTERMEDIATE
OUTER FRAME



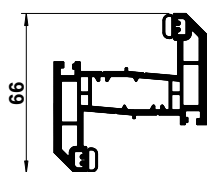
A03
CHAMFERED LARGE
OUTER FRAME



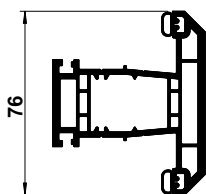
A06
OVOLO INTERMEDIATE
OUTER FRAME



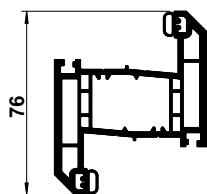
A10
CHAMFERED SLIM
'T' TRANSOM



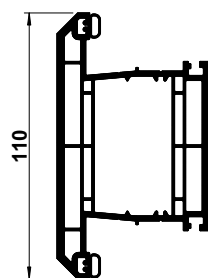
A11
CHAMFERED SLIM
'Z' TRANSOM



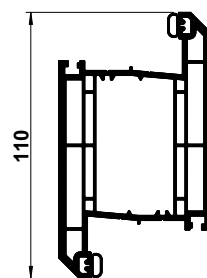
A12
CHAMFERED INTERMEDIATE
'T' TRANSOM



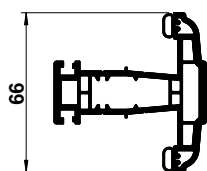
A13
CHAMFERED INTERMEDIATE
'Z' TRANSOM



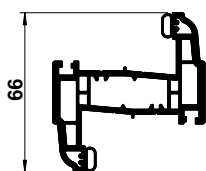
A14
CHAMFERED 'T'
MIDRAIL



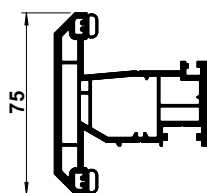
A15
CHAMFERED 'Z'
MIDRAIL



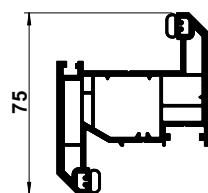
A20
OVOLO SLIM
'T' TRANSOM



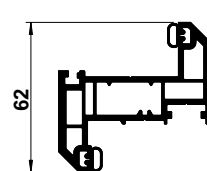
A21
OVOLO SLIM
'Z' TRANSOM



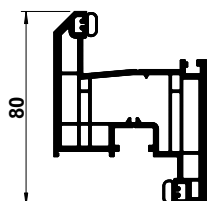
A30
CHAMFERED 'T'
CASEMENT SASH



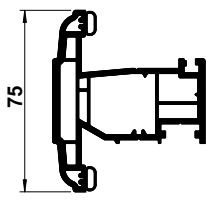
A31
CHAMFERED 'Z'
CASEMENT SASH



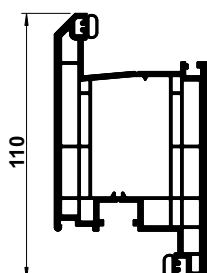
A32
CHAMFERED SLIM 'Z'
CASEMENT SASH



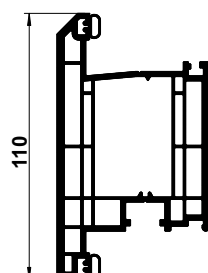
A33
CHAMFERED 'Z'
TILT & TURN SASH



A35
OVOLO 'T'
CASEMENT SASH



A40
CHAMFERED 'Z'
DOOR SASH



A41
CHAMFERED 'T'
DOOR SASH



A50
28mm CHAMFERED
GLAZING BEAD



A51
24mm CHAMFERED
GLAZING BEAD



A55
28mm BEVELLED
GLAZING BEAD



A60
28mm OVOLO
GLAZING BEAD



A61
24mm OVOLO
GLAZING BEAD



A62
24mm STEP OVOLO
GLAZING BEAD



B55
36mm SLIM
GLAZING BEAD

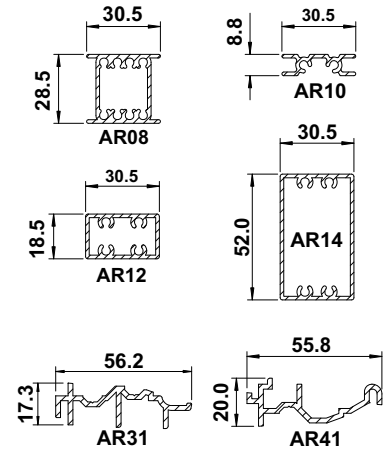
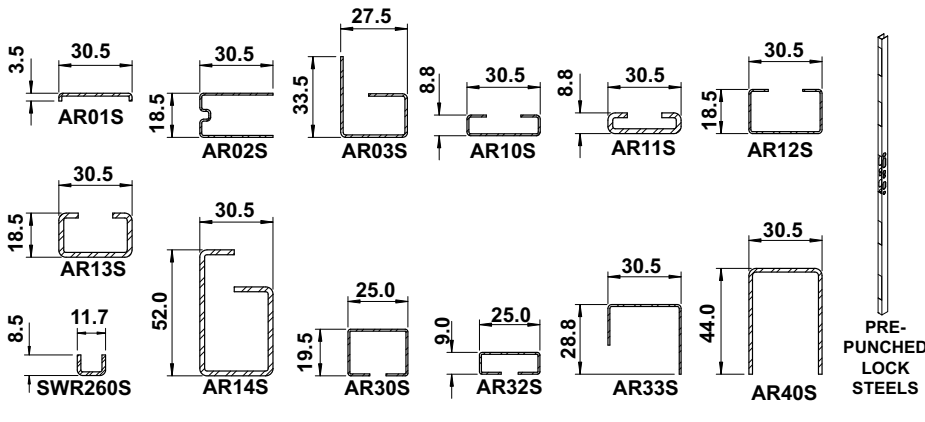


B66
40mm OVOLO
GLAZING BEAD

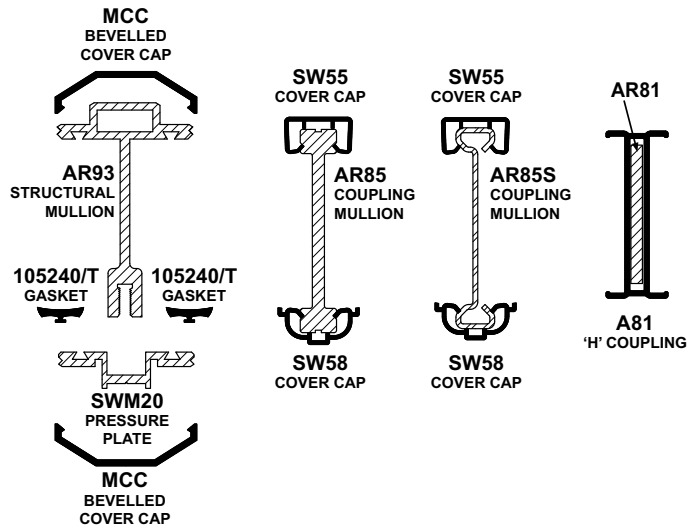
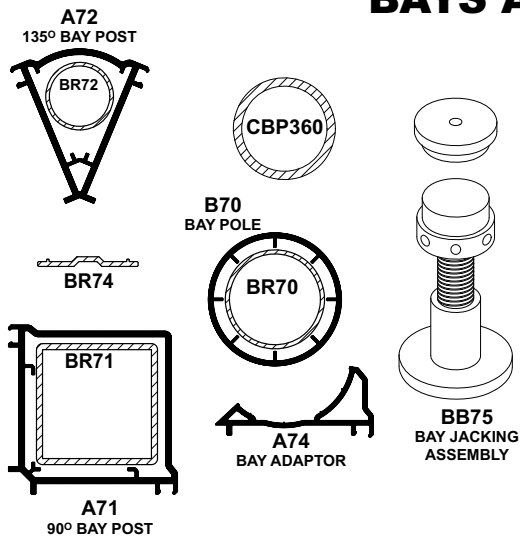
STEEL

REINFORCEMENTS

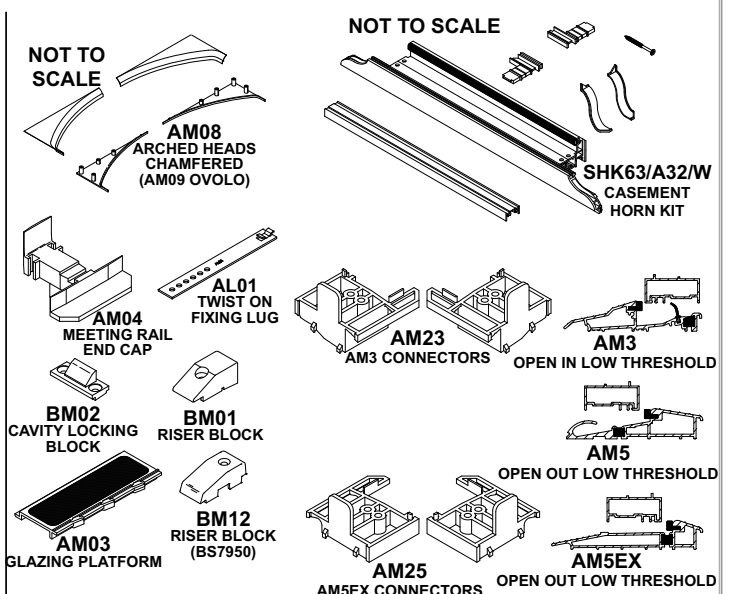
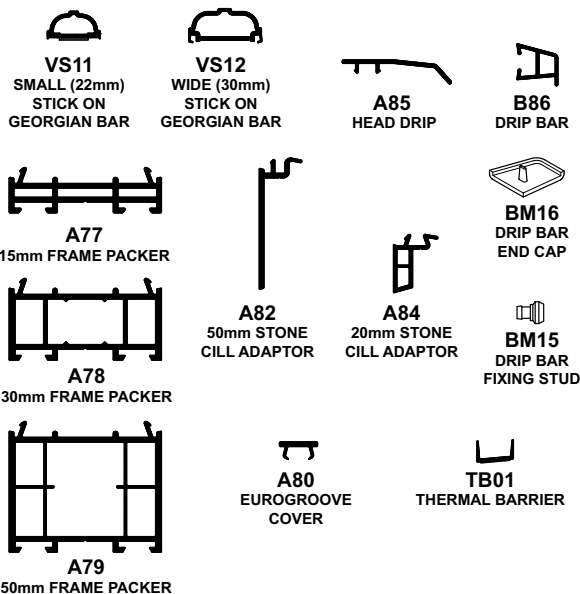
ALUMINIUM



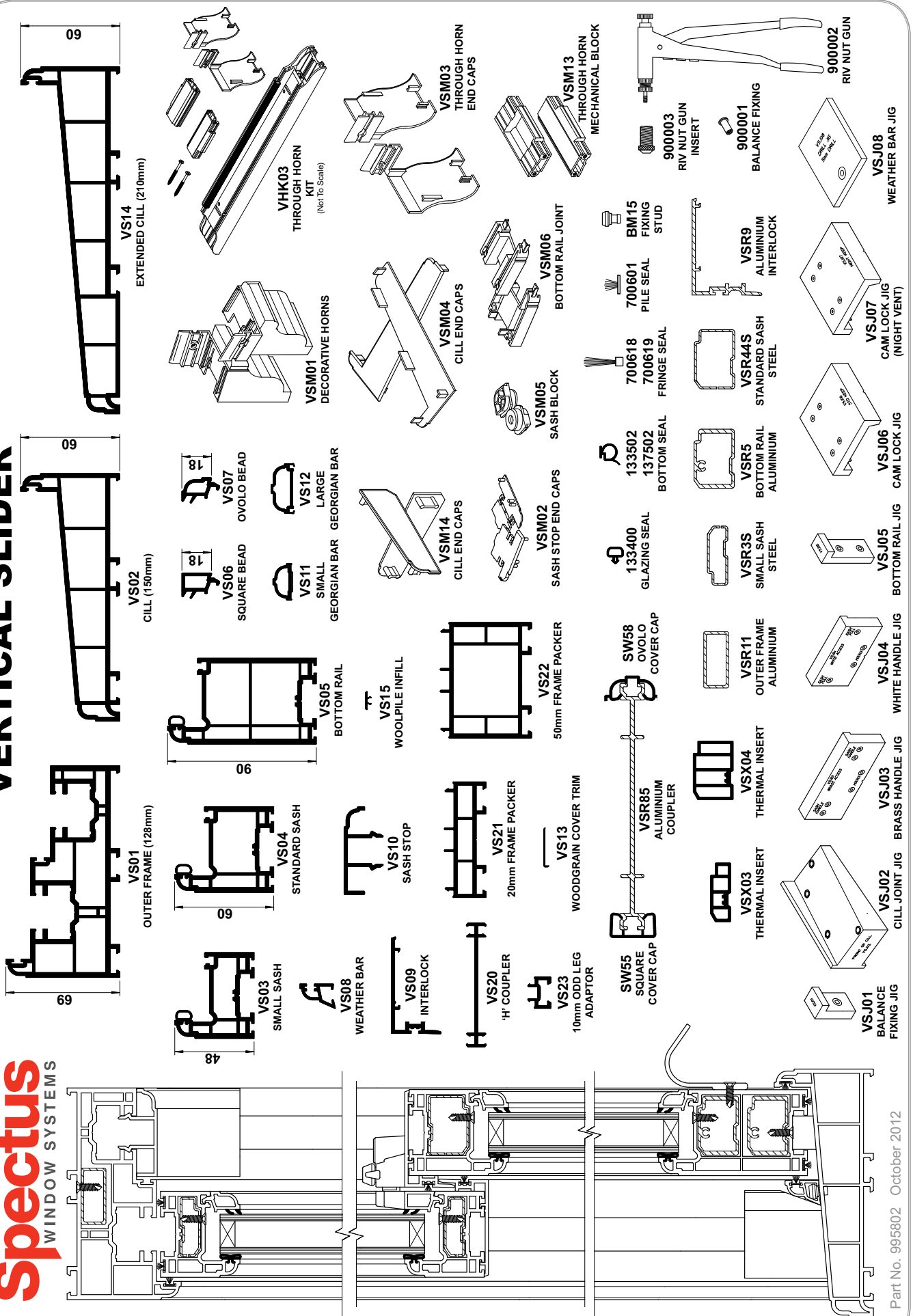
BAYS AND COUPLINGS



ANCILLARIES

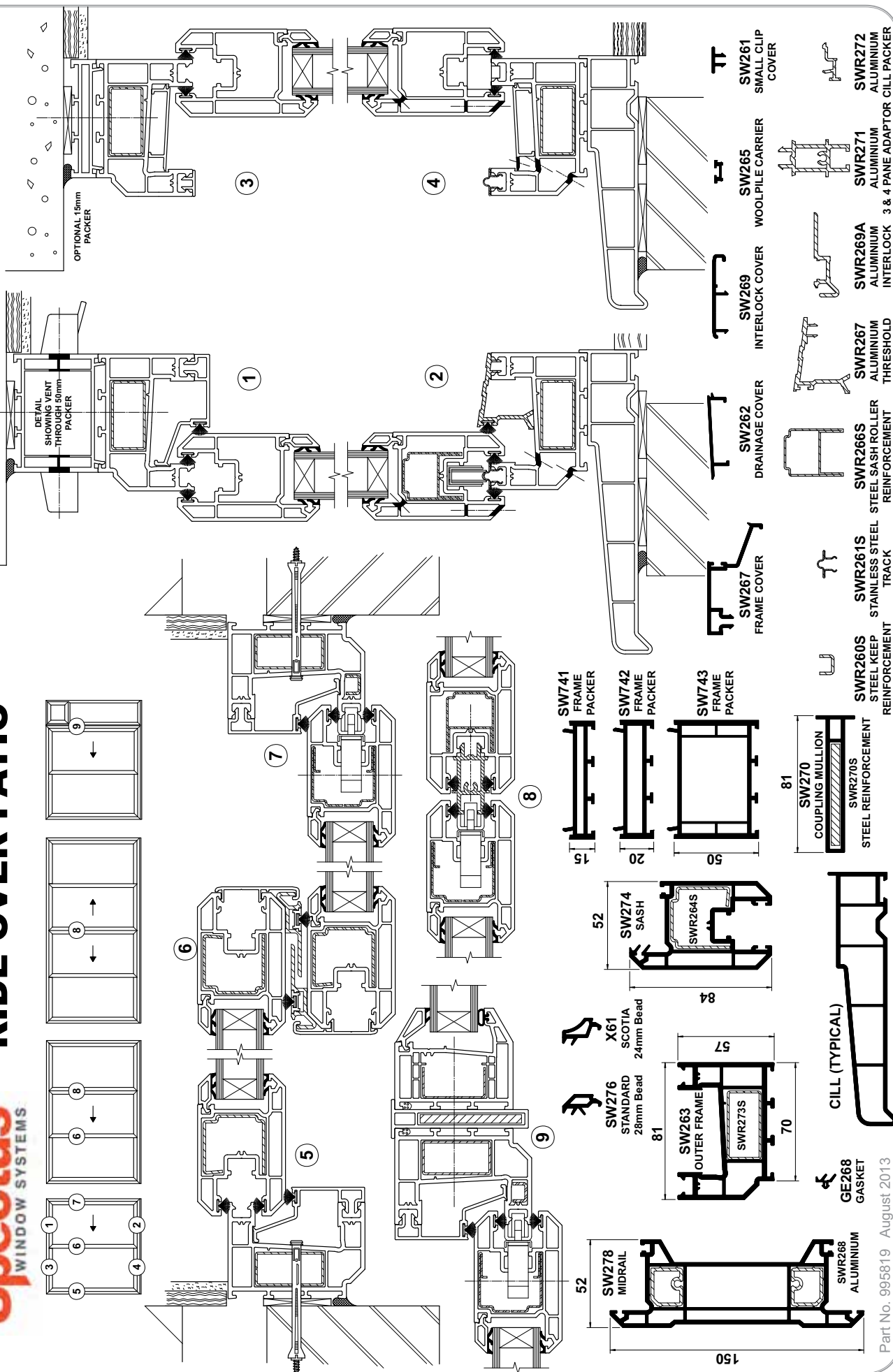


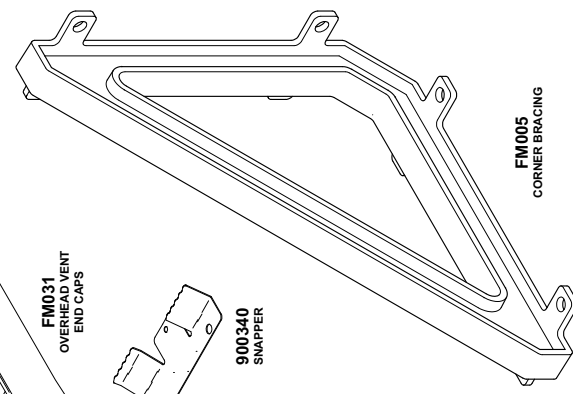
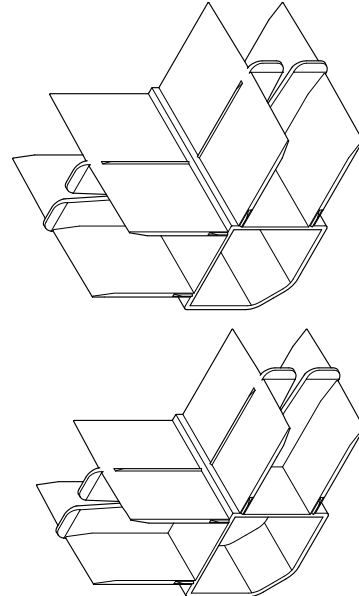
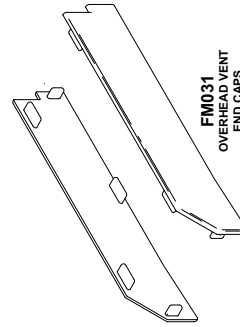
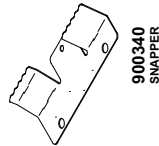
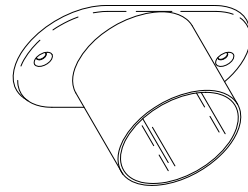
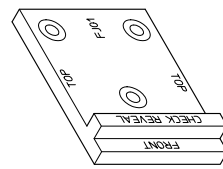
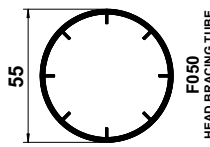
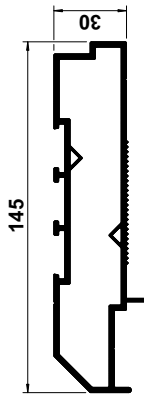
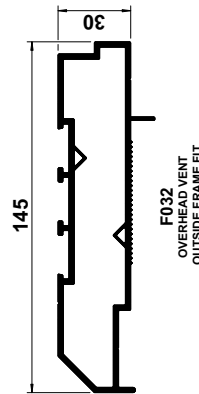
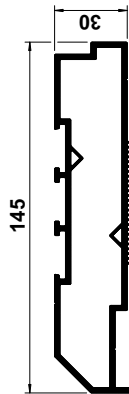
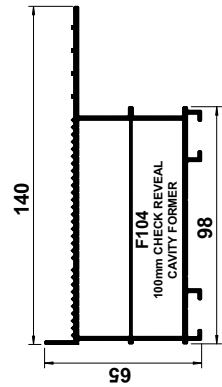
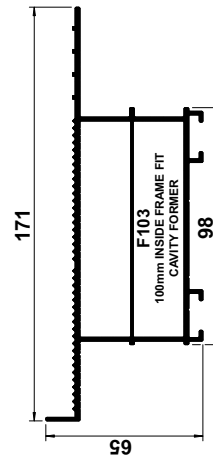
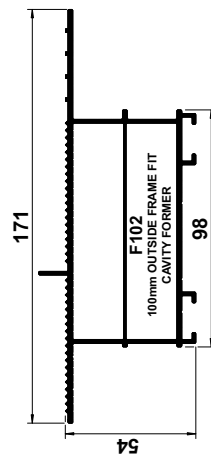
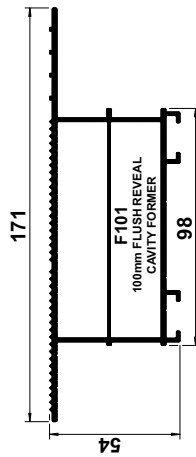
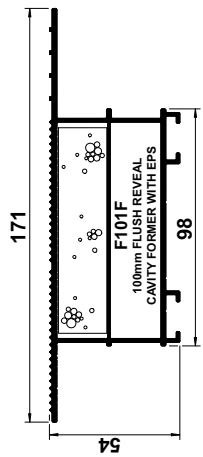
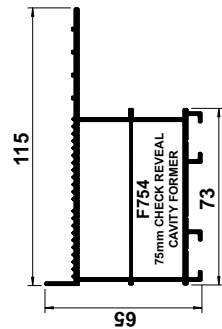
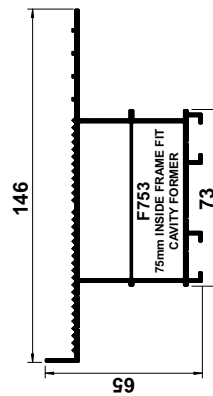
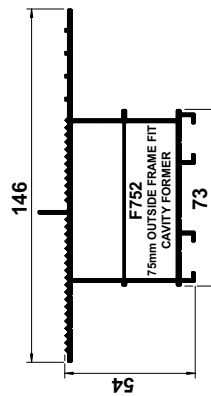
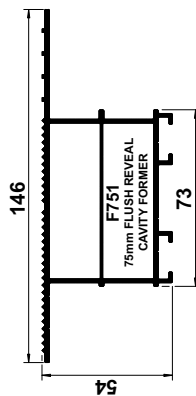
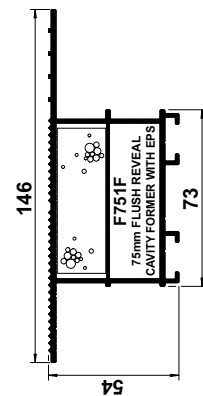
VERTICAL SLIDER



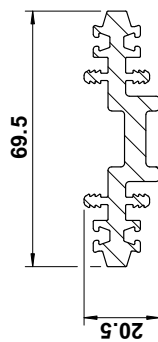
RIDE OVER PATIO

FULL SIZE AT A1

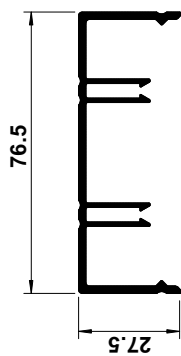




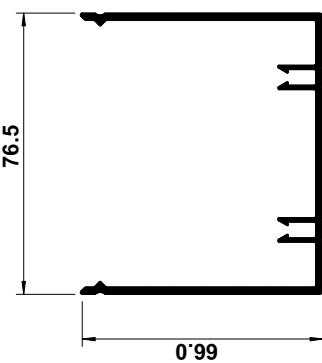
CURTAIN WALLING



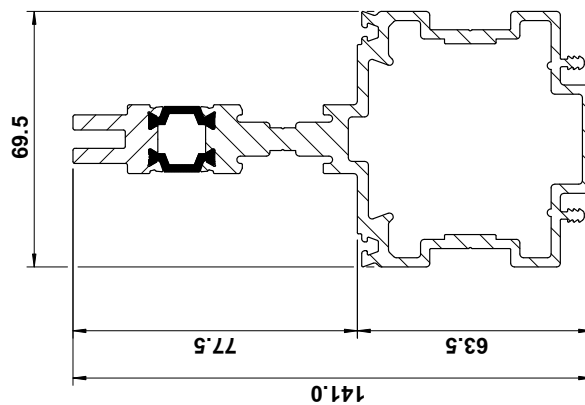
5003
PRESSURE PLATE



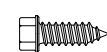
5030
FACE CAP



5020
INTERNAL COVER



5002
MULLION / TRANSOM



F8306319
PRESSURE PLATE
SCREW



1825
GASKET



5052
M10 NUT



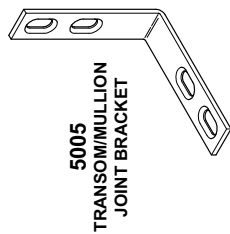
5051
M10 HEX
HEAD BOLT



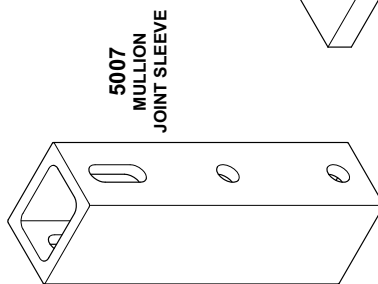
5053
WASHER



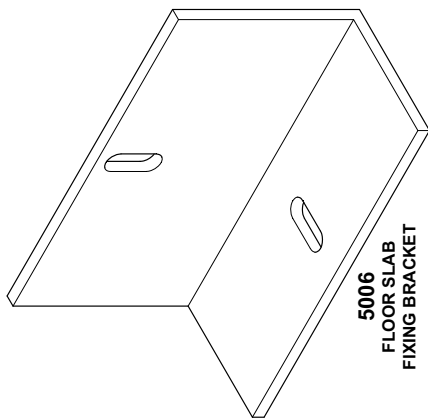
5053
SERRATED
WASHER



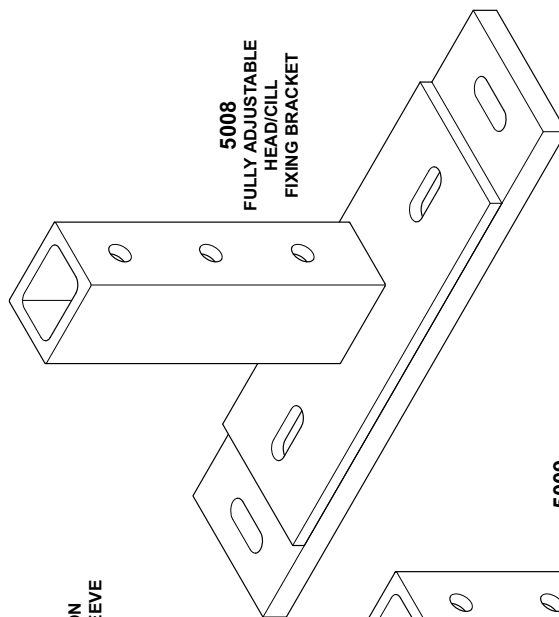
5005
TRANSOM/MULLION
JOINT BRACKET



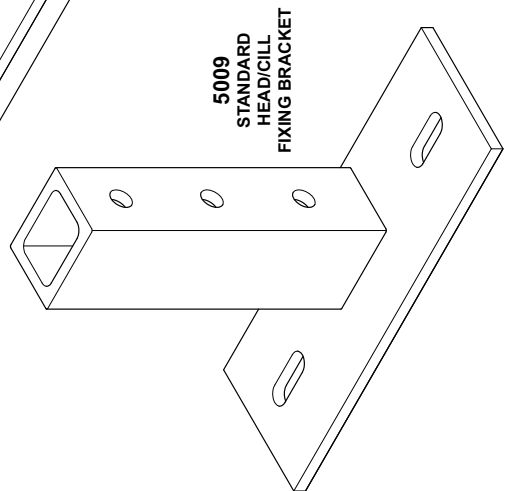
5007
MULLION
JOINT SLEEVE



5006
FLOOR SLAB
FIXING BRACKET



5008
FULLY ADJUSTABLE
HEAD/CILL
FIXING BRACKET

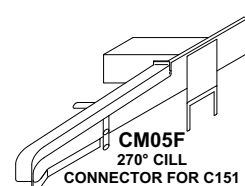
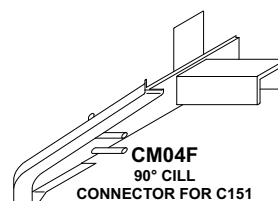
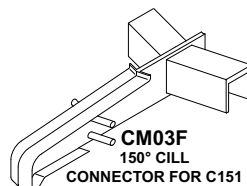
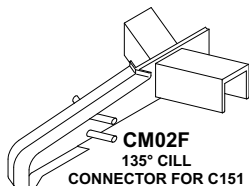
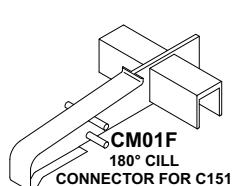
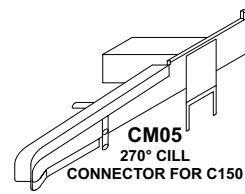
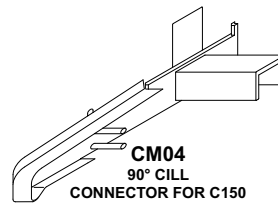
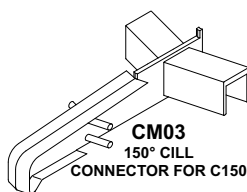
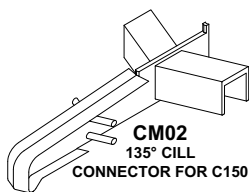
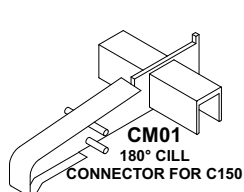
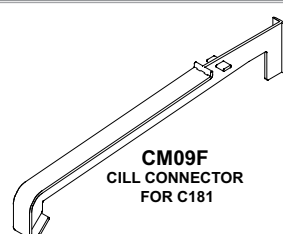
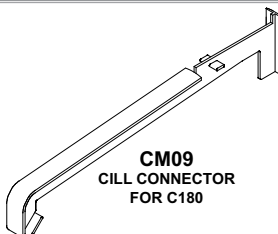
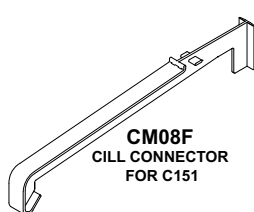
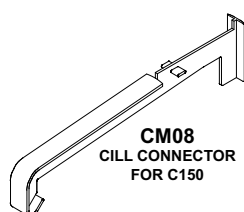
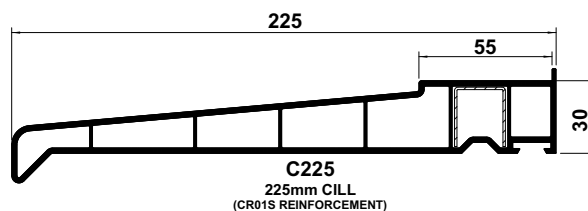
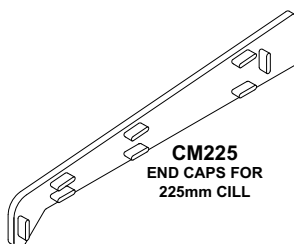
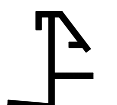
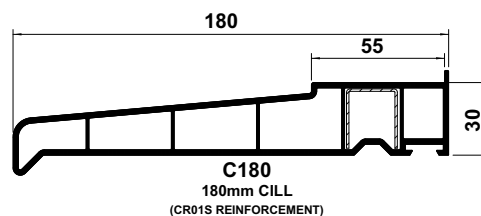
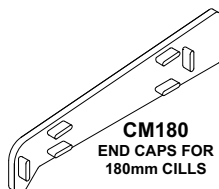
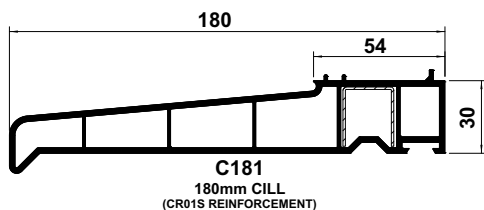
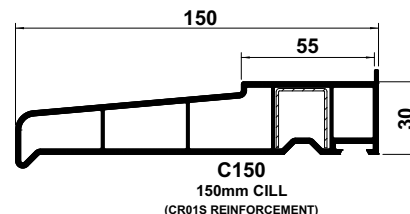
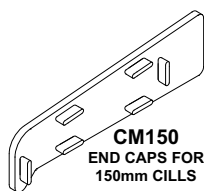
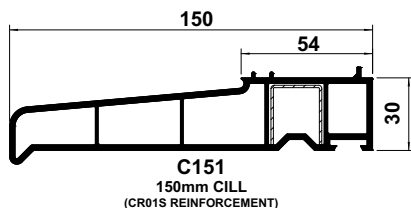
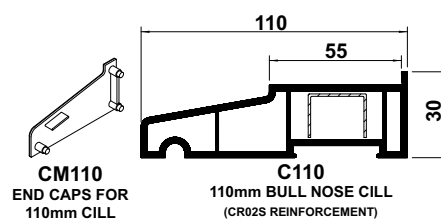
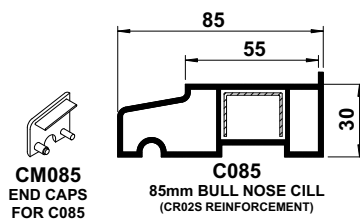
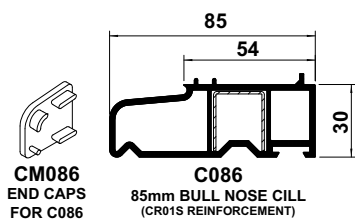


5009
STANDARD
HEAD/CILL
FIXING BRACKET

FULL SIZE AT A2

January 2015

HALF SIZE AT A2



General Information



Glossary of Standards

PVC-U Extruded Hollow Profiles

CATEGORY	DESCRIPTION
REFERENCE	GENERAL INFORMATION

Lead Standard: BS EN 12608 (formerly BS7413)

NORMATIVE REFERENCES:

EN 477, Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors - Determination of the resistance to impact of main profiles by falling mass.

EN 478, Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors - Appearance after exposure at 150°C - Test method.

EN 479, Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors - Determination of heat reversion.

EN 513, Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors - Determination of the resistance to artificial weathering.

EN 514, Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors - Determination of the strength of welded corners and T-joints.

EN ISO 105 - A01, Textiles - Tests for colourfastness - Part A01: General principles of testing (ISO 105 A01).

EN ISO 178, - Plastics - Determination of flexural properties (ISO 178).

EN ISO 179-2, Plastics - Determination of Charpy impact properties - Part 2: Instrumented impact tests (ISO 179-2).

EN ISO 306, Plastics - Thermoplastic materials - Determination of vicat softening temperature (VST) (ISO 306).

EN ISO 8256, Plastics - Determination of tensile-impact strength (ISO 8256).

EN ISO 1163-2, Plastics - Unplasticized polyvinylchloride (PVC-U) moulding and extrusion materials - Part 2: Preparation of test specimens and determination of properties (ISO 1163-2)

CATEGORY	DESCRIPTION
REFERENCE	GENERAL INFORMATION

Lead Standard: BS 7412

GLASS:

BS 952-1, Glass for glazing - Part 1: Classification.

BS 952-2, Glass for glazing - Part 2: Terminology for work on glass.

BS 6262, Code of practice for glazing for buildings.

BS EN 1279, Glass in building. Specification for insulating glass units.

REINFORCEMENT

BPF 323/1 COP for the reinforcement of high impact modified PVC-U windows and doors.

BS EN 10346, Specification for Continuously hot-dip coated steel flat products. Technical delivery conditions.

BS EN 10088-2, Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes.

BS EN 485-2, Aluminium and aluminium alloys - sheet, strip and plate - Part 2: Mechanical properties.

BS EN 515, Aluminium and aluminium alloys. Wrought products. Temper designations.

BS EN 573-3, Aluminium and aluminium alloys. Chemical composition and form of wrought products - Part 3: Chemical composition.

BS EN 755-9, Aluminium and aluminium alloys. Extruded rod/bar, tube and profiles - Part 9: Profiles, tolerances on dimensions and form.

BS EN 12020-1, Aluminium and aluminium alloys. Extruded precision profiles - Part 1: Technical conditions for inspection and delivery.

BS EN 12020-2, Aluminium and aluminium alloys. Extruded precision profiles - Part 2: Tolerances on dimensions and form.

GLAZING GASKETS & WEATHERSTRIPS

BPF 345/2, Materials for gaskets and weather strips for windows, doors, conservatories and curtain walling - Specification and performance requirements.

WINDOW HARDWARE (EXCEPT FASTENINGS)

BS EN 1670, Corrosion resistance.

BS EN ISO 4042, Fasteners - Electroplated coatings.

WINDOW FASTENINGS

BPF W363/1, Guidelines for the selection and application of fasteners for the manufacture of plastic window and doorsets.

INFILL PANELS

BPF 355/1, Infill panels for doors and windows.

SURVEY AND INSTALLATION

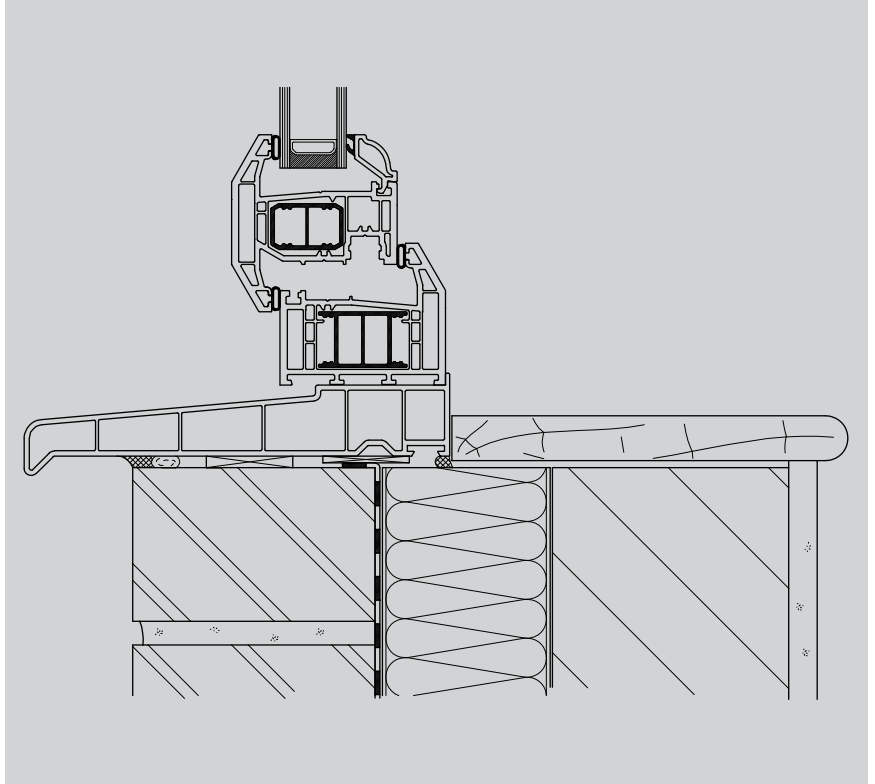
BS 8213-4

Code of practice for the survey and installation of windows and external doorsets.

CATEGORY	DESCRIPTION
REFERENCE	BUILDING DETAILS

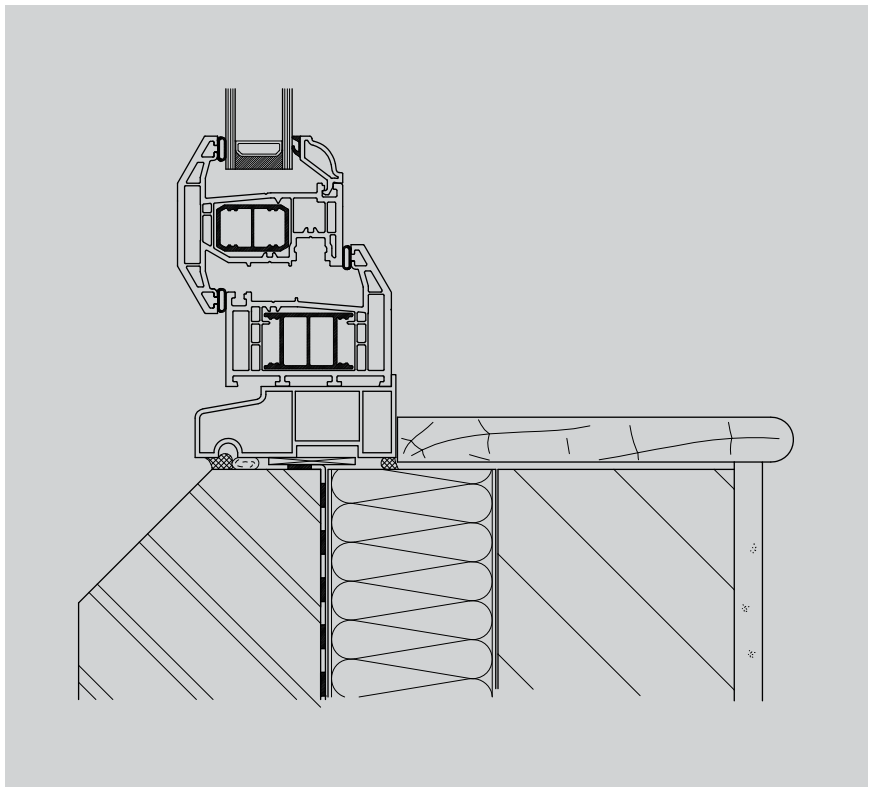
1

- Brick and block construction
- Standard PVC-U cill detail



2

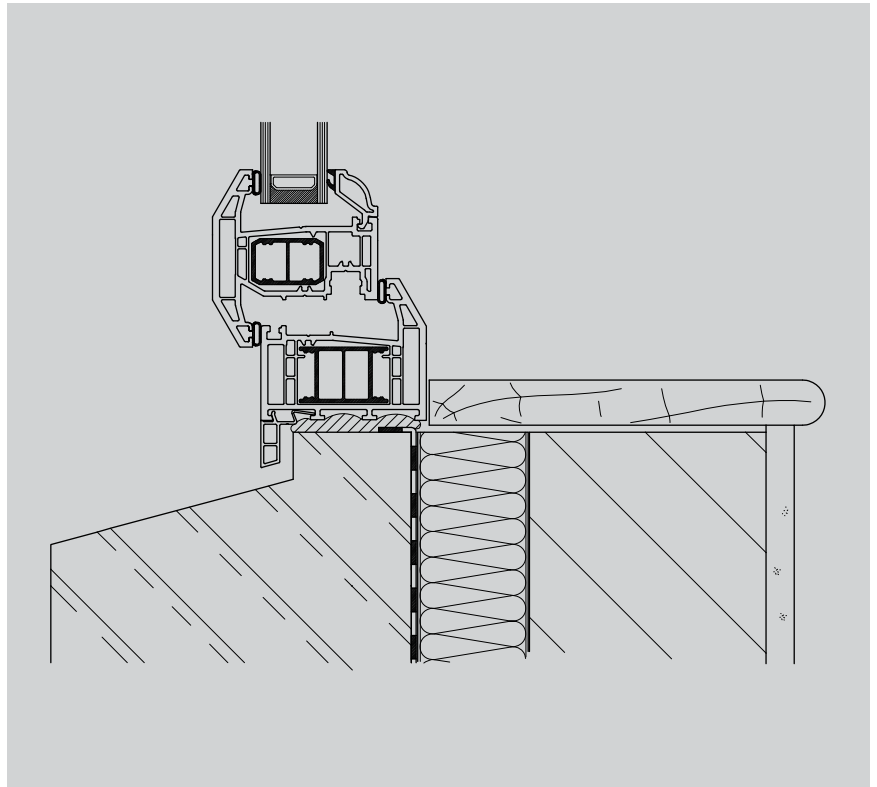
- Cant Brick and block construction
- PVC-U Stub cill detail



CATEGORY	DESCRIPTION
REFERENCE	BUILDING DETAILS

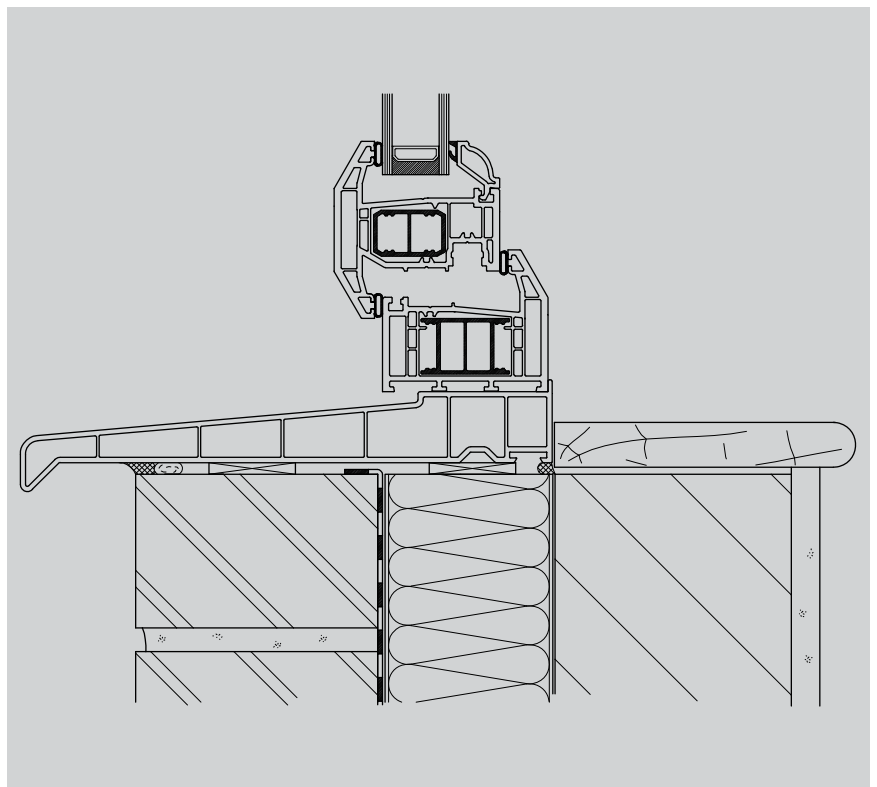
3

- Stone cill and block construction
- No cill with stone cill adaptor



4

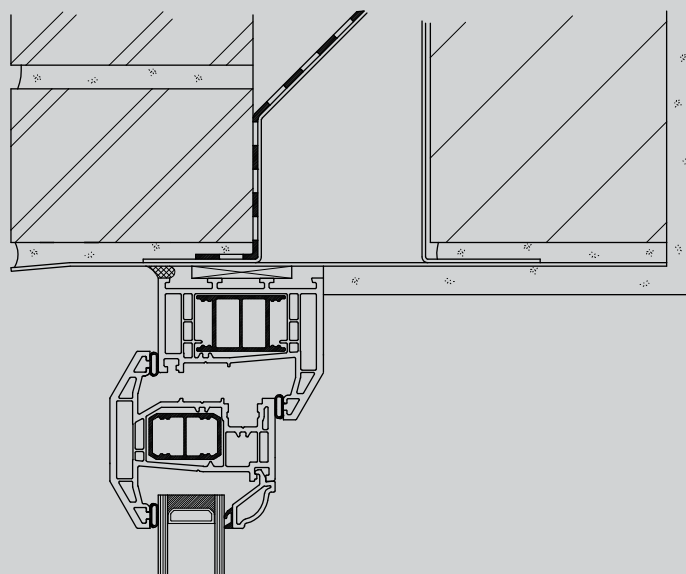
- Brick and block construction
- Check reveal extended PVC-U cill detail



CATEGORY	DESCRIPTION
REFERENCE	BUILDING DETAILS

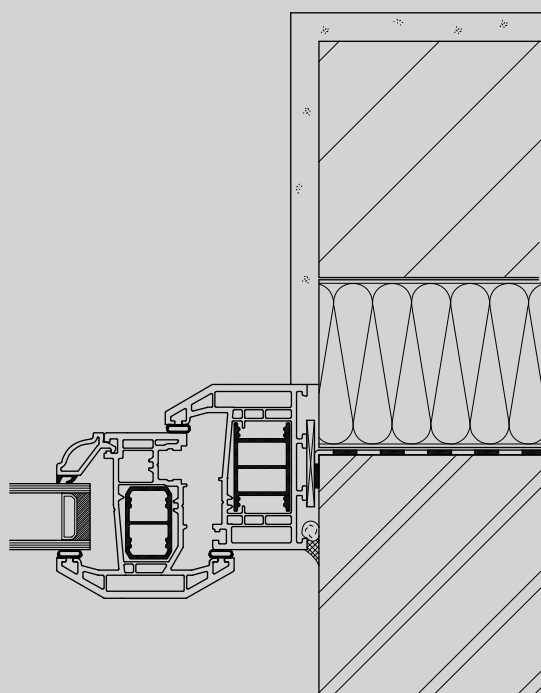
5

- Brick and block construction
- Standard window head



6

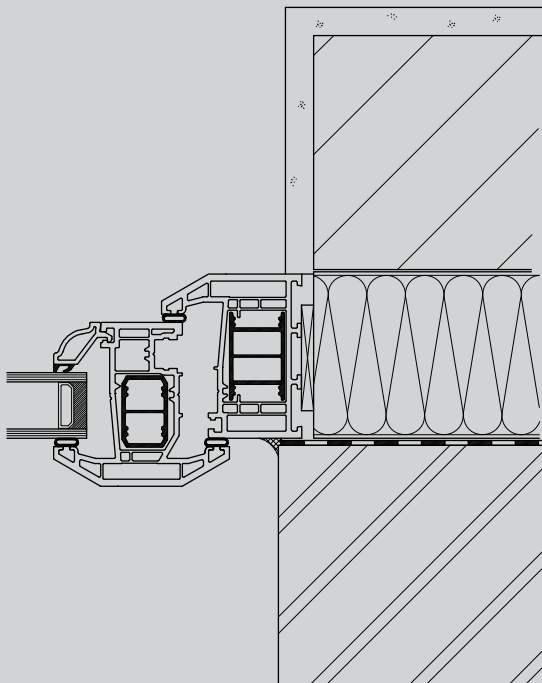
- Brick and block construction
- Standard window jamb



CATEGORY	DESCRIPTION
REFERENCE	BUILDING DETAILS

7

- Brick and block construction
- Check reveal window jamb





Part of the **Epwin Group**

Spectus
WINDOW SYSTEMS

Spectus Window Systems

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