

TECHNICAL GUIDE



WELCOME TO THE REAL ALUMINIUM TECHNICAL GUIDE

This technical guide contains all the details and information you need to easily specify REAL Aluminium.

As part of Customade Group and as a leading fabricator of Smart Architectural Aluminium, REAL Aluminium offer a complete range of high-end aluminium windows and doors for the trade. All REAL Aluminium products can be specified to Part Q if required and our in-house team are always on hand to provide help and advice with your products.



GET IN TOUCH

For further technical advice and enquiries regarding the REAL Aluminium range, please contact us on:

Telephone: 01642 309576

Email: enquiries@gfdhomes.co.uk

Website: <https://www.gfdhomes.co.uk/>

CASEMENT WINDOW

ASSEMBLY DRAWINGS

| | |
|--|--------|
| Alitherm 400x – Contemporary Frame – Slim Sash | Page 4 |
| Alitherm 400i – Contemporary Frame – Medium Sash | Page 5 |
| Alitherm 400 Tilt and Turn | Page 8 |
| Alitherm 400 Flush Sash | Page 9 |

MAIN PROFILES

| | |
|-------------------------------------|----------|
| Alitherm 400 Window Systems i and x | Page 6-7 |
|-------------------------------------|----------|

ANCILLARIES

| | |
|--------------------------|---------|
| Alitherm 400 Ancillaries | Page 10 |
|--------------------------|---------|

RESIDENTIAL OR FRENCH DOOR

ASSEMBLY DRAWINGS

| | |
|---------------------------------|------------|
| Alitherm 400 Quick-Glaze System | Page 12-14 |
| Alitherm 400 Couplers | Page 15 |

MAIN PROFILES

| | |
|--------------------------|---------|
| Alitherm 400 Door System | Page 11 |
|--------------------------|---------|

HERITAGE RANGE

ASSEMBLY DRAWINGS

| | |
|-----------------|------------|
| Heritage Window | Page 16 |
| Heritage Door | Page 18-10 |

MAIN PROFILES

| | |
|-----------------|---------|
| Heritage Window | Page 17 |
| Heritage Door | Page 20 |

COMPOSITE OR BI-FOLDING DOOR

ASSEMBLY DRAWINGS

| | |
|--|---------|
| New Visofold SLIM 1000 Quickglaze Bi-folding Door - Jamb & Mullion Details | Page 21 |
| New Visofold SLIM 1000 Quickglaze Bi-folding Door - Head & Threshold Details | Page 22 |

MAIN PROFILES

| | |
|-------------------------------|---------|
| Visofold SLIM 1000 Quickglaze | Page 23 |
|-------------------------------|---------|

SLIDING DOOR

ASSEMBLY DRAWINGS

| | |
|---|---------|
| Visoglide Plus (Two Track) - Jamb Details | Page 24 |
| Visoglide Plus (Three Track) - Trickle Vent, Head & Threshold Details – With Standard Frame | Page 25 |
| Visoglide Plus (Three Track) - Head & Threshold Details – With Internal Upstand Frame | Page 26 |
| Visoglide Plus - Mullion Details | Page 27 |
| Visoglide Plus - Reinforced Mullion Details | Page 28 |
| Visoglide Plus - Flush Stacking | Page 29 |
| Visoglide Plus - Slim Interlock Details | Page 30 |

MAIN PROFILES

| | |
|----------------|---------|
| Visoglide Plus | Page 31 |
|----------------|---------|

OTHER TECHNICAL INFORMATION

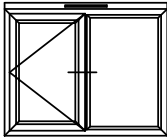
| | |
|--|--------------|
| Non-Stock Colour Options | Page 32 - 34 |
| Stock Colour Options | Page 34 |
| Part L and Part F Building Regulations | Page 35 |
| Replacement on Existing Dwellings or Extensions (Energy Ratings) | Page 36 |
| Extensions U Values (Limiting U Value 1.4 W/m ² k) | Page 37 |
| New Build U Values with Double Glazing (Limiting U Value 1.6 W/m ² k) | Page 38 |
| New Build U Values with Triple Glazing Notional Method (Target U Value 1.2 W/m ² k) | Page 39 |
| AD L: Energy Efficiency - New Dwellings | Page 40 |
| Fresher, Cleaner Indoor Air (PART F) | Page 41 |
| Building Regulation Compliance, Window Energy Ratings (WER) and Doorset Energy Ratings (DSER) | Page 42 |
| Product Specifications | Page 43 |

Casement Window Assembly Drawings

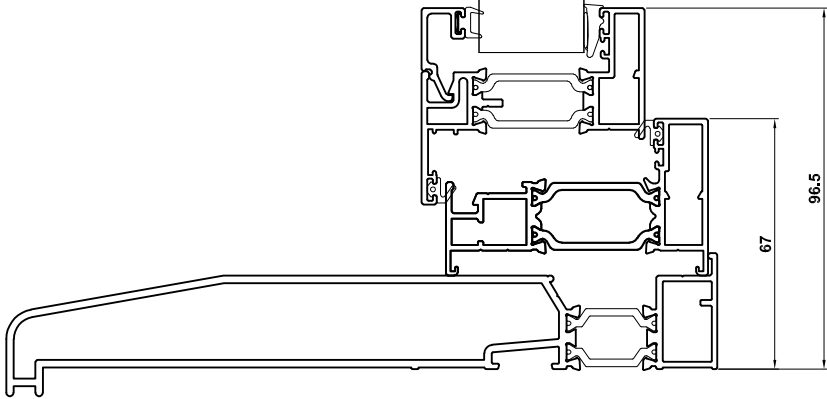
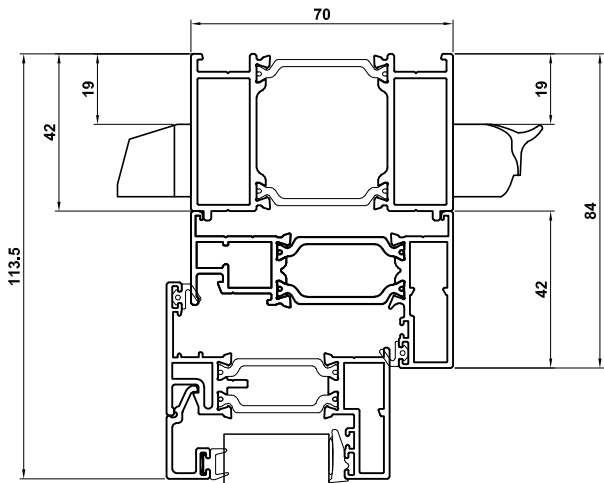
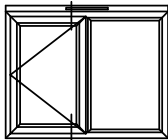
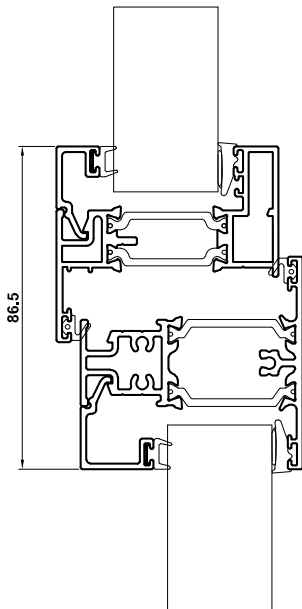
Alitherm 400x

Contemporary Frame | Externally Glazed | Flat Sash

Note: Wedge gasket is standard on externally glazed windows



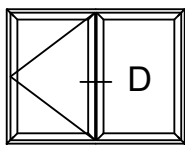
- ETC4110 - Outer Frame
- ETC4120 - Z-Sash
- ETC4130 - T-Transom/Mullion
- ETC4179G - 28mm Glazing Z sash
- UN3160G - 28mm Glazing
- ETC458 - 190mm Sill
- UN3042 - Outer Frame Extension



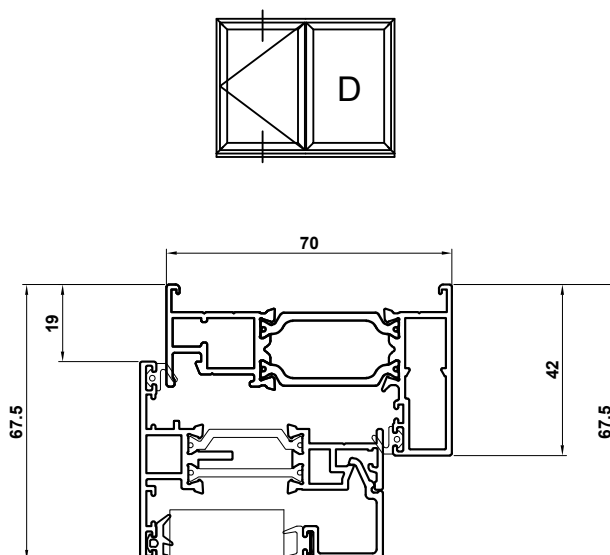
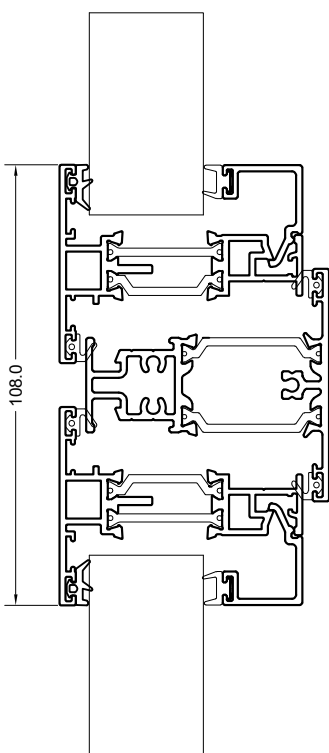
Casement Window Assembly Drawings

Alitherm 400i Quick-Glaze System

Contemporary Frame | Internally Glazed | Flat Sash | Quickglaze Bead

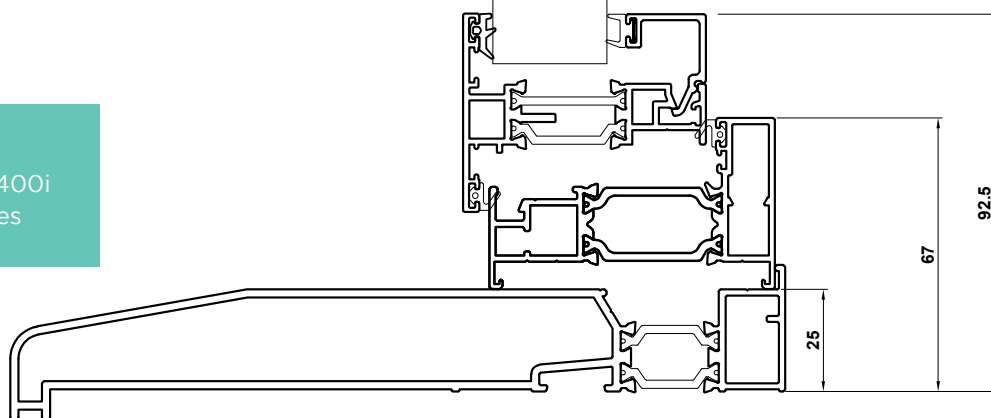


- ETC4110 - Outer Frame
- ETC4124 - Slim T-Sash
- ETC4130 - T-Transom/Mullion
- UN3160G - 28mm Glazing
- ETC458 - 190mm Sill



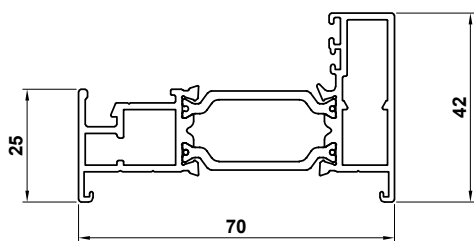
Note:

Fixed panes on Alitherm 400i always have dummy sashes

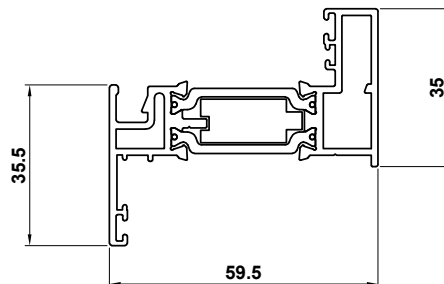


Casement Window Main Profile

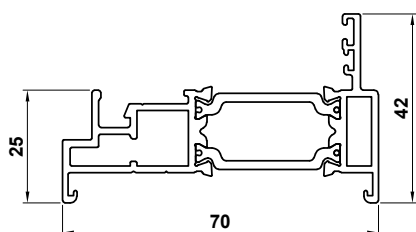
Alitherm 400 Window Systems i and x



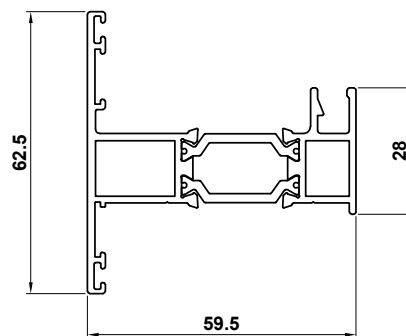
ETC4110
Square Outer Frame



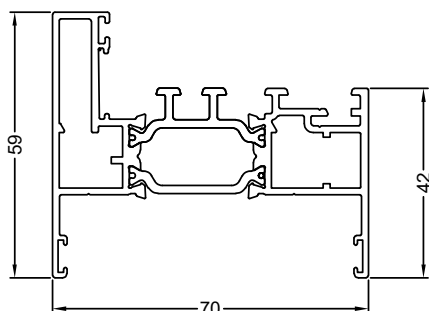
ETC4120
Externally Beaded Z Sash
(Crimp Only)



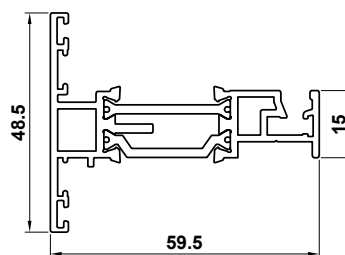
ETC4115
Flush sash outer frame



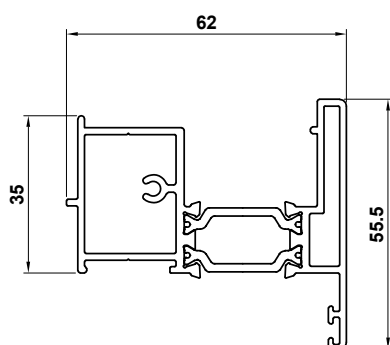
ETC4129
Internally Bead T Sash



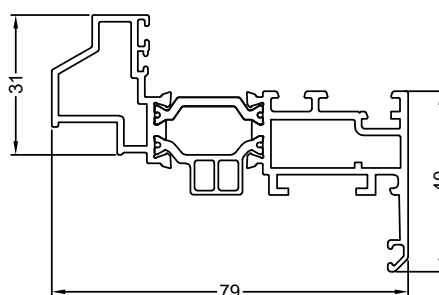
ETC4014
Tilt & Turn Outer Frame



ETC4124
Internally Bead Slim T Sash



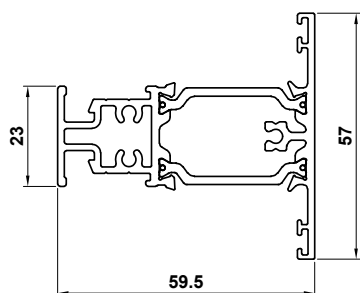
ETC4138
French Casement Mullion



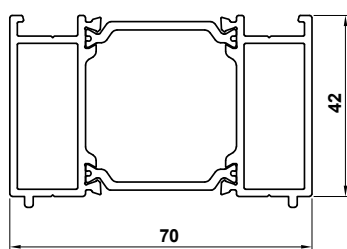
ETC4021
Tilt & Turn Sash

Casement Window Main Profile

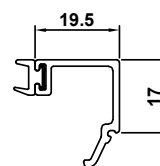
Alitherm 400 Window Systems i and x



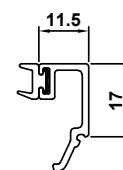
ETC4130
Transom/Mullion



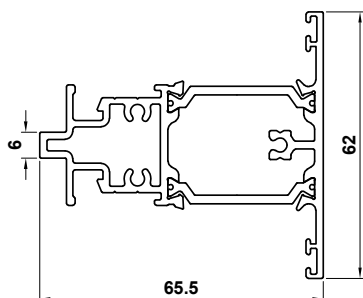
UN3042
70mm x 42mm Head Extension



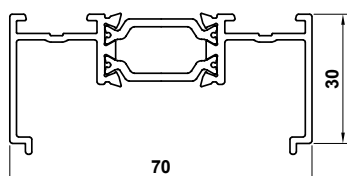
UN3160G
28mm Glazing Bead
with Gasket



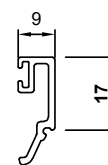
ETC4179G
28mm Glazing Z sash
Bead



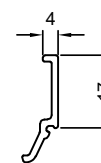
ETC4135
Flush sash Transom / Mullion



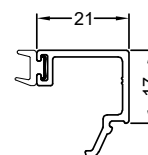
UN3370
70mm x 30mm Frame Extension



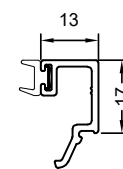
UN3166
40mm Glazing Bead



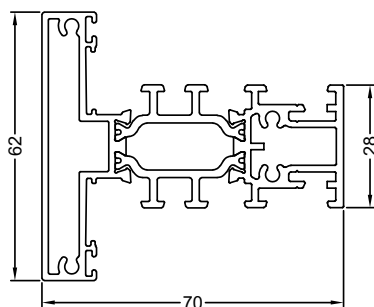
UN3168
44mm Glazing Bead



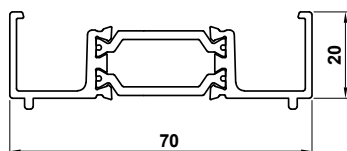
ETC4067G
Tilt & Turn
28mm Glazing Bead



ETC4061G
Tilt & Turn
36mm Glazing Bead



ETC4031
Tilt & Turn T-transom / mullion



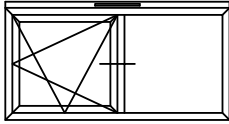
UN3020
70mm x 20mm Frame Extension

Tilt and Turn Window Assembly Drawings

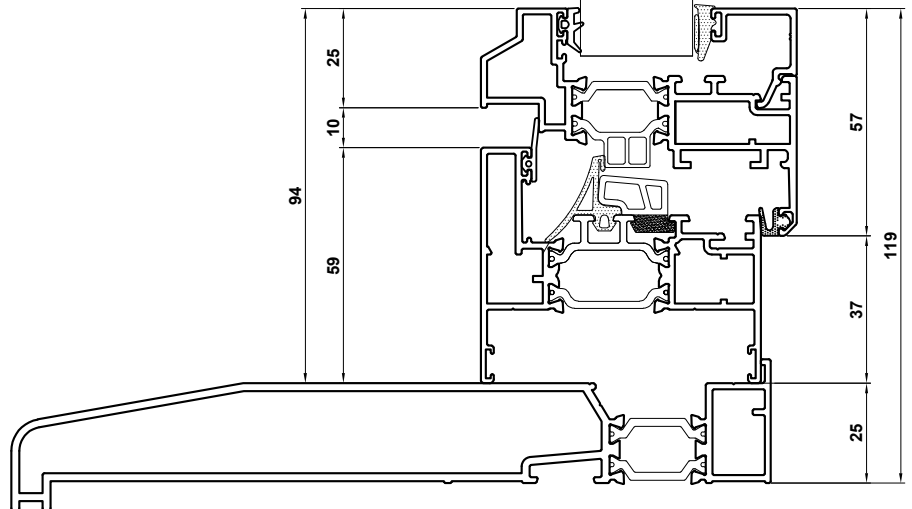
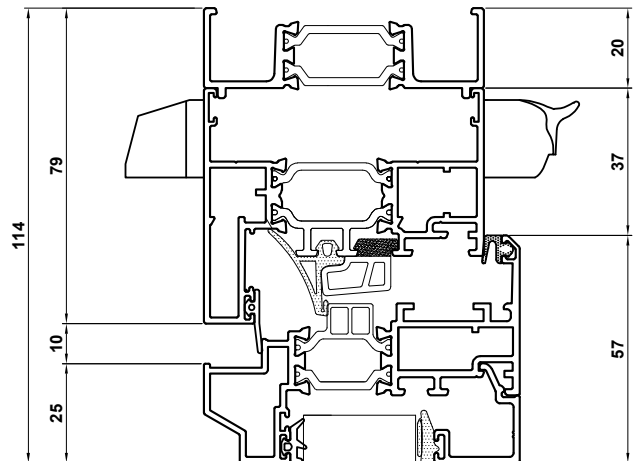
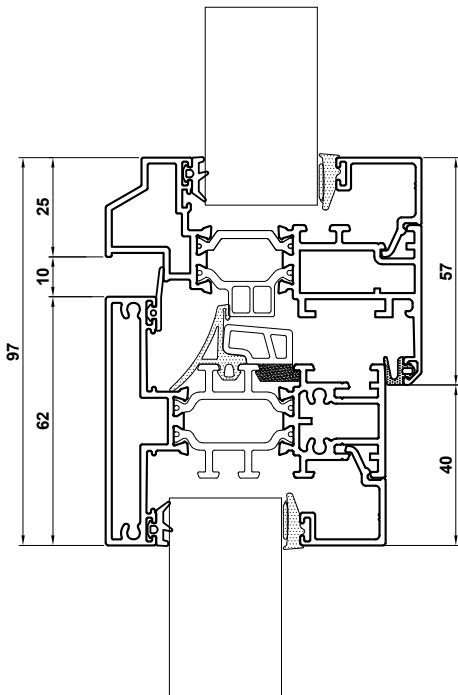
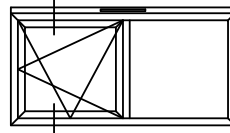
Alitherm 400

Contemporary Frame | Internally Glazed | Featured Sash

Note: Wedge gasket is standard on internally glazed windows



- ETC4014 - Outer Frame
- ETC4021 - Sash
- ETC4031 - T-Transom/Mullion
- ETC4067 - 28mm Glazing Bead
- ETC458 - 190mm Sill
- UN3020 - Outer Frame Extension

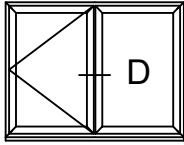


Flush Sash Window Assembly Drawings

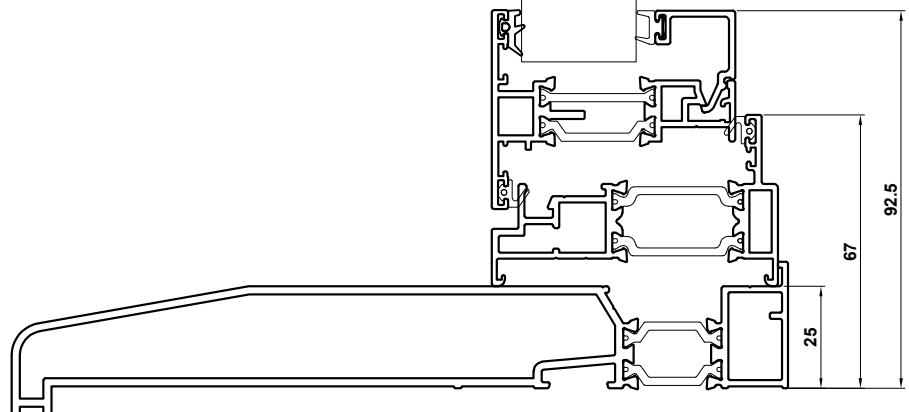
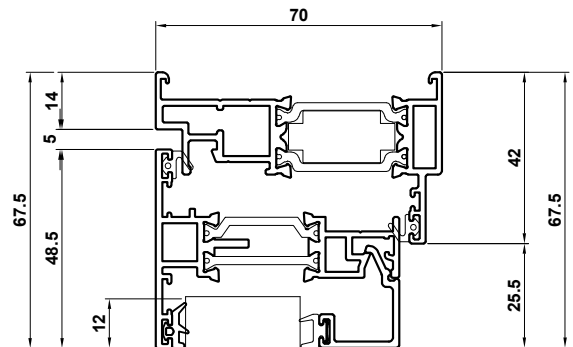
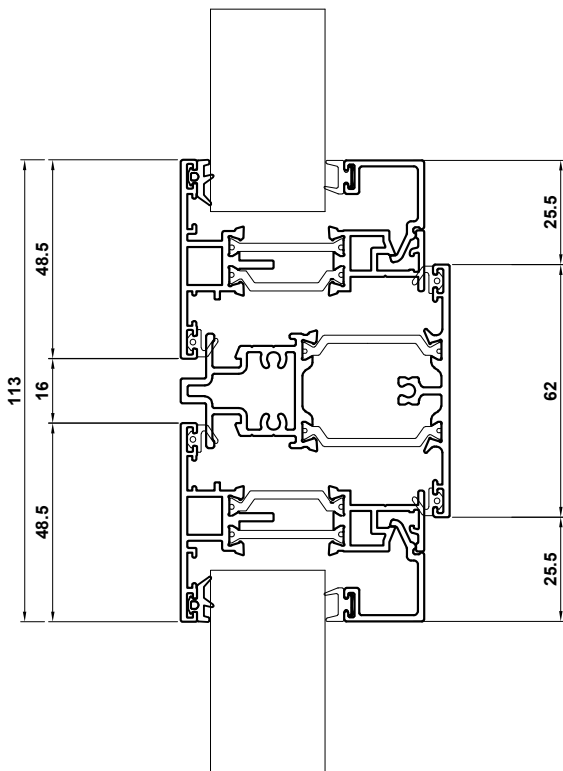
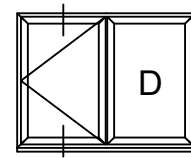
Alitherm 400

Contemporary Frame | Internally Glazed | Flat Sash

Note: Wedge gasket is standard on internally glazed windows

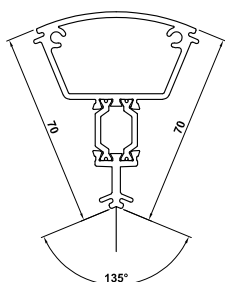


ETC4115 - Outer Frame
ETC4124 - Sash
ETC4135 - T-Transom/Mullion
UN3160G - 28mm Glazing Bead
ETC458 - 190mm Sill



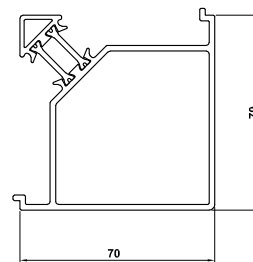
Casement Window Ancillaries

Alitherm 400 Window Systems i and x

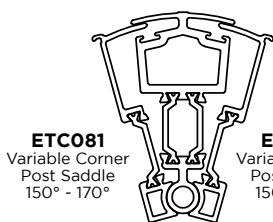


UN3011
135° Corner Post

Note:
All posts are not structural or load bearing.



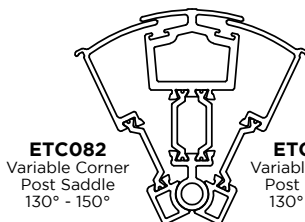
UN3010
70mm Corner Post



ETC081
Variable Corner Post Saddle
150° - 170°



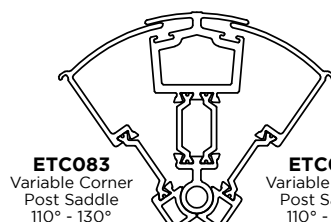
ETC081
Variable Corner Post Saddle
150° - 170°



ETC082
Variable Corner Post Saddle
130° - 150°



ETC082
Variable Corner Post Saddle
130° - 150°



ETC083
Variable Corner Post Saddle
110° - 130°

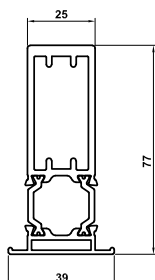


ETC083
Variable Corner Post Saddle
110° - 130°

ETC080
Variable Corner Post Centre

ETC080
Variable Corner Post Centre

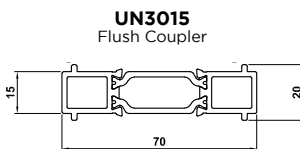
ETC080
Variable Corner Post Centre



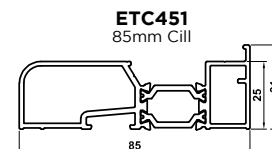
ETC517
Coupler



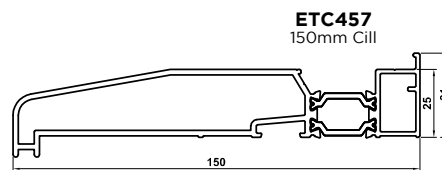
W20165
Astragal Bar



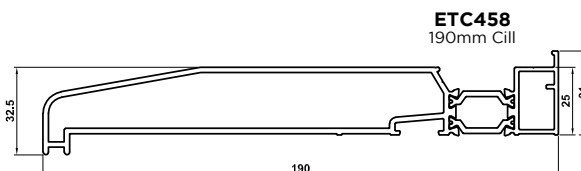
UN3015
Flush Coupler



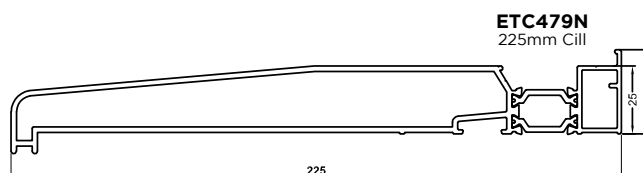
ETC451
85mm Cill



ETC457
150mm Cill



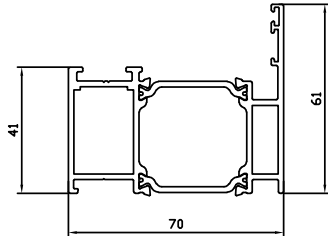
ETC458
190mm Cill



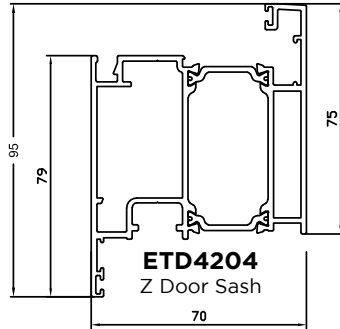
ETC479N
225mm Cill

Residential or French Door Main Profiles

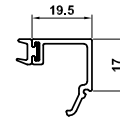
Alitherm 400 Door System



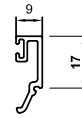
ETD410
Outer Frame



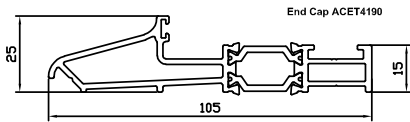
ETD4204
Z Door Sash



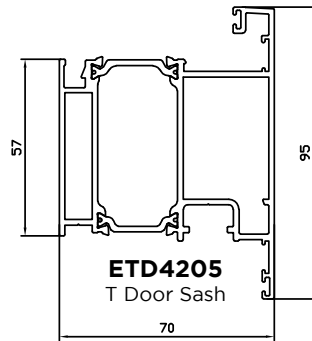
UN3160G
28mm Glazing
Bead with
Gasket



UN3166
40mm Glazing
Bead



ETD490
Low Threshold Open In



ETD4205
T Door Sash

End Cap ACET4197

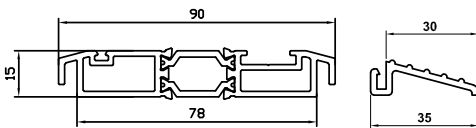


UL297
Sash Adaptor
in Conjunction
with ETD490
and ETD492
Low Threshold



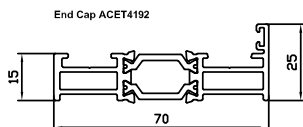
VL72
Weather Drip

End Cap ACVL059
Rivet: ACVL061

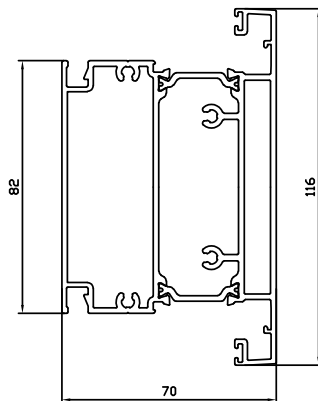


ETD495
Low Threshold Ramp

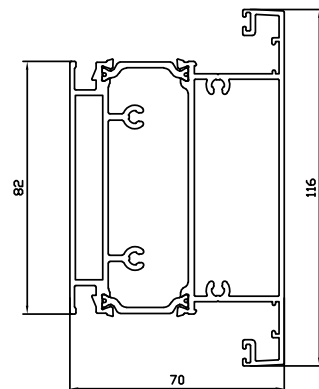
EUD03
Low
Threshold
Ramp



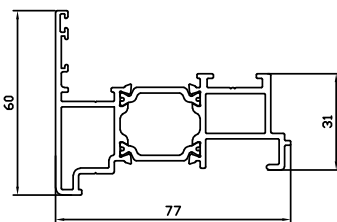
ETD492
Open Out Low Threshold



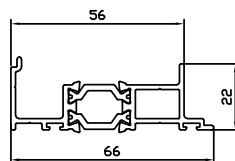
ETD 4301
Midrail for ETD4204



ETD 4302
Midrail for ETD4205



ETD447
Dummy Mullion



ETD496
Adaptor for Ramp Threshold



PCX15
Clip on
for Sash



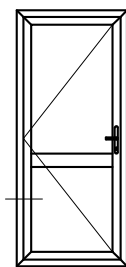
PCX47
Clip on for
Thresholds

End Cap ACET4142 used with ETD495
ACE4146 used with ETD490 AND ETD492
ACE4147 used with ETD410

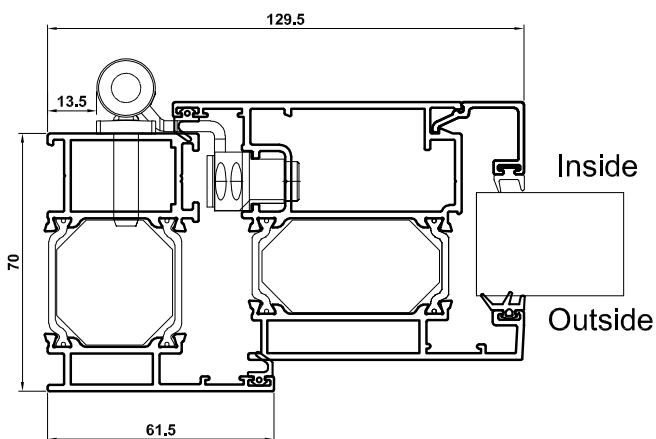
Residential or French Door Assembly Drawings

Alitherm 400 Quick-Glaze System

Resi Door | Open In | Internally Glazed

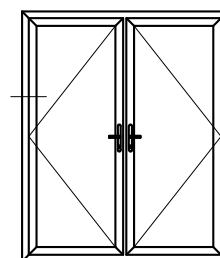


ETD410 - Outer Frame
ETD4204 - Z-Sash
UN3160G - 28mm Glazing

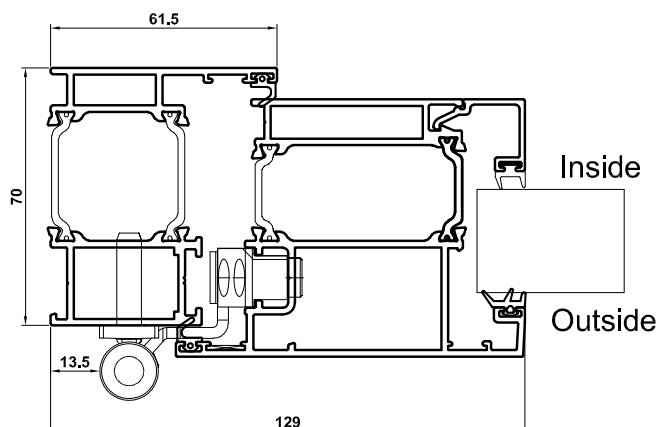


Alitherm 400 Quick-Glaze System

French Door | Open Out | Internally Glazed



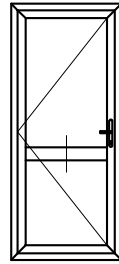
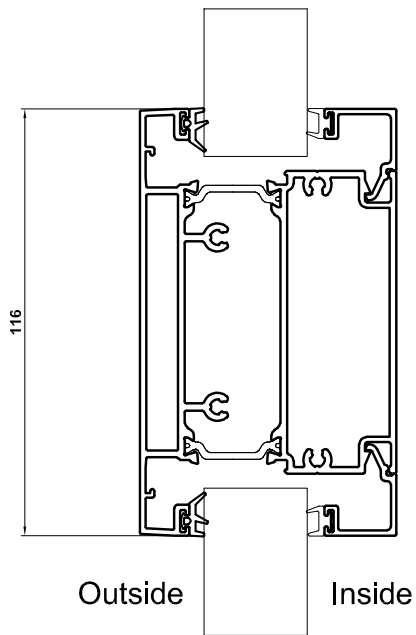
ETD410 - Outer Frame
ETD4205 - T-Sash
UN3160G - 28mm Glazing



Residential or French Door Assembly Drawings

Alitherm 400 Quick-Glaze System

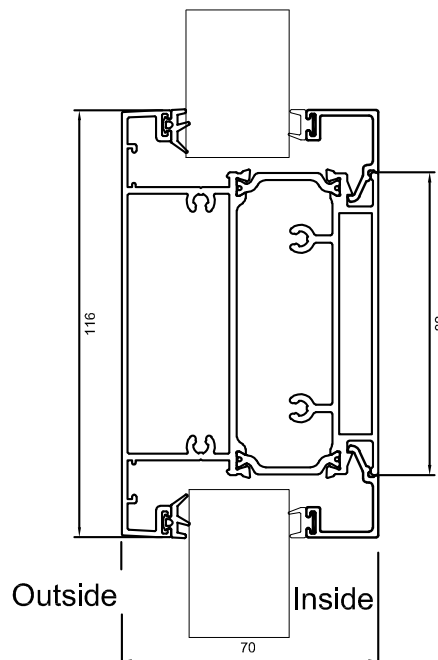
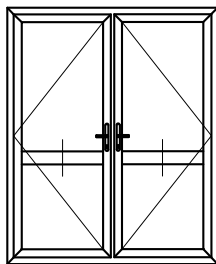
Resi Door | Open In | Internally Glazed | Midrail



ETD4301 - Midrail
UN3160G - 28mm Glazing

Alitherm 400 Quick-Glaze System

French Door | Open Out | Internally Glazed

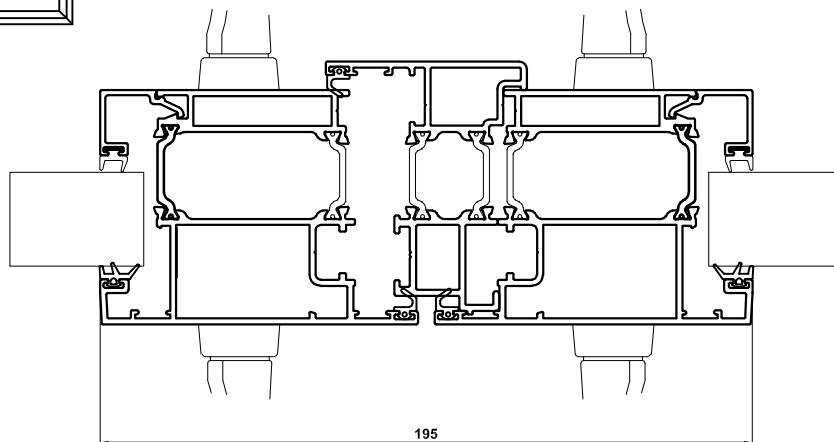
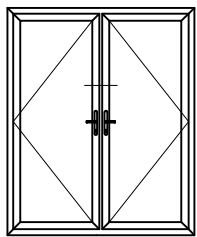


ETD4302 - Midrail
UN3160G - 28mm Glazing

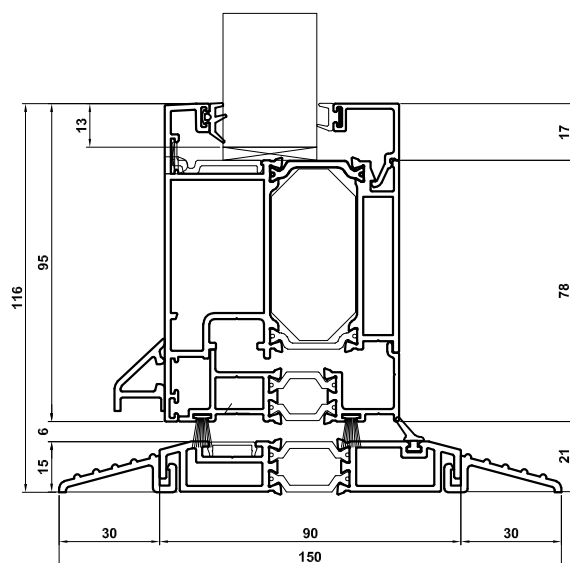
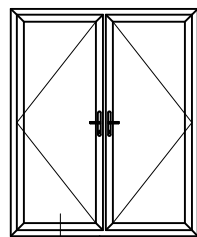
Residential or French Door Assembly Drawings

Alitherm 400 Quick-Glaze System

French Door | Open Out | Internally Glazed



ETD4205 - T-Sash
ETD447 - Dummy Mullion
UN3160G - 28mm Glazing

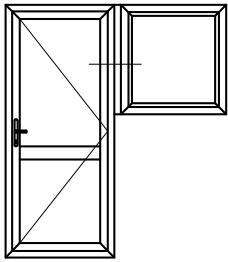


ETD4205 - T-Sash
UN3160G - 28mm Glazing
ETD495 - Low Threshold
ETD496 - Adaptor for Ramp Threshold
EUD03 - Low Threshold Ramp

Residential or French Door Assembly Drawings

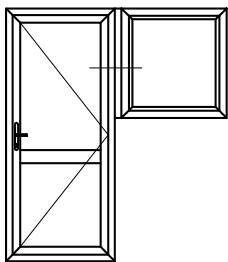
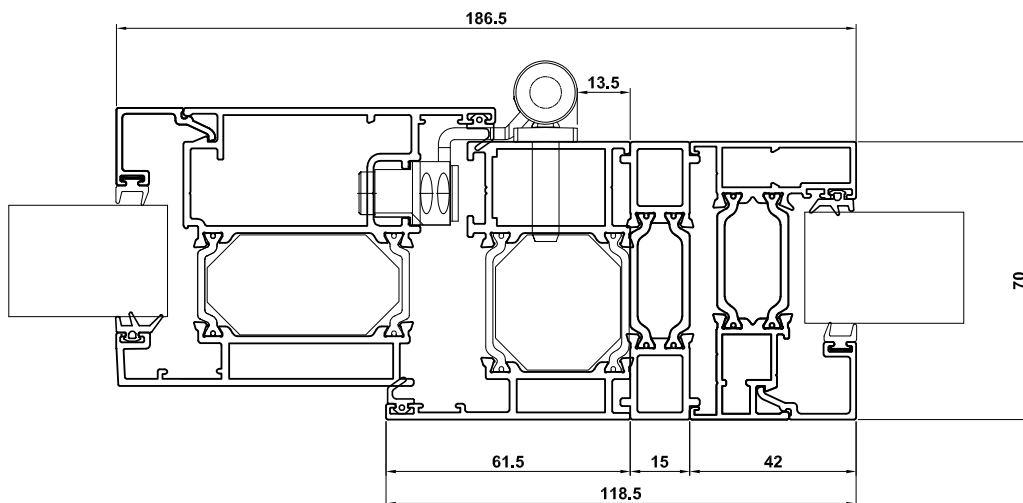
Alitherm 400

Couplers



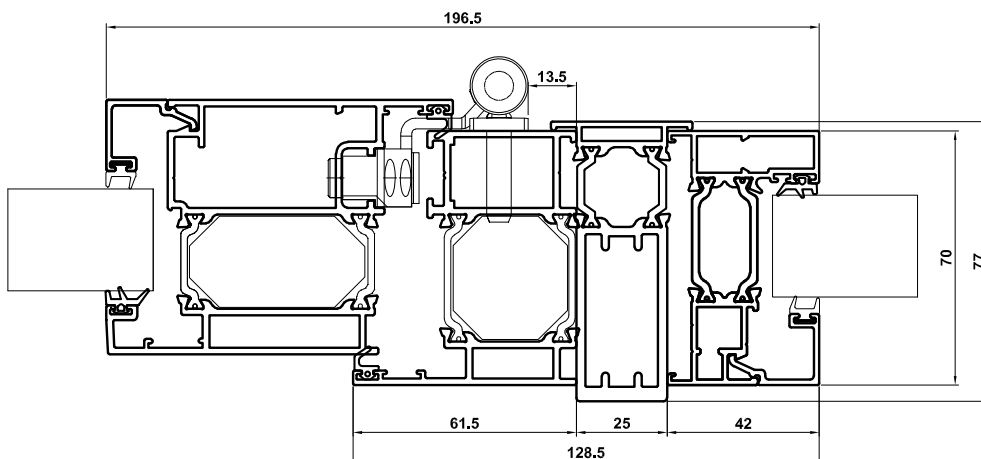
Flush Coupler

ETD410 - Outer Frame
ETD4204 - Z Sash
UN3160G - 28mm Glazing
UN3015 - Flush Coupler
ETC4110 - Outer Frame



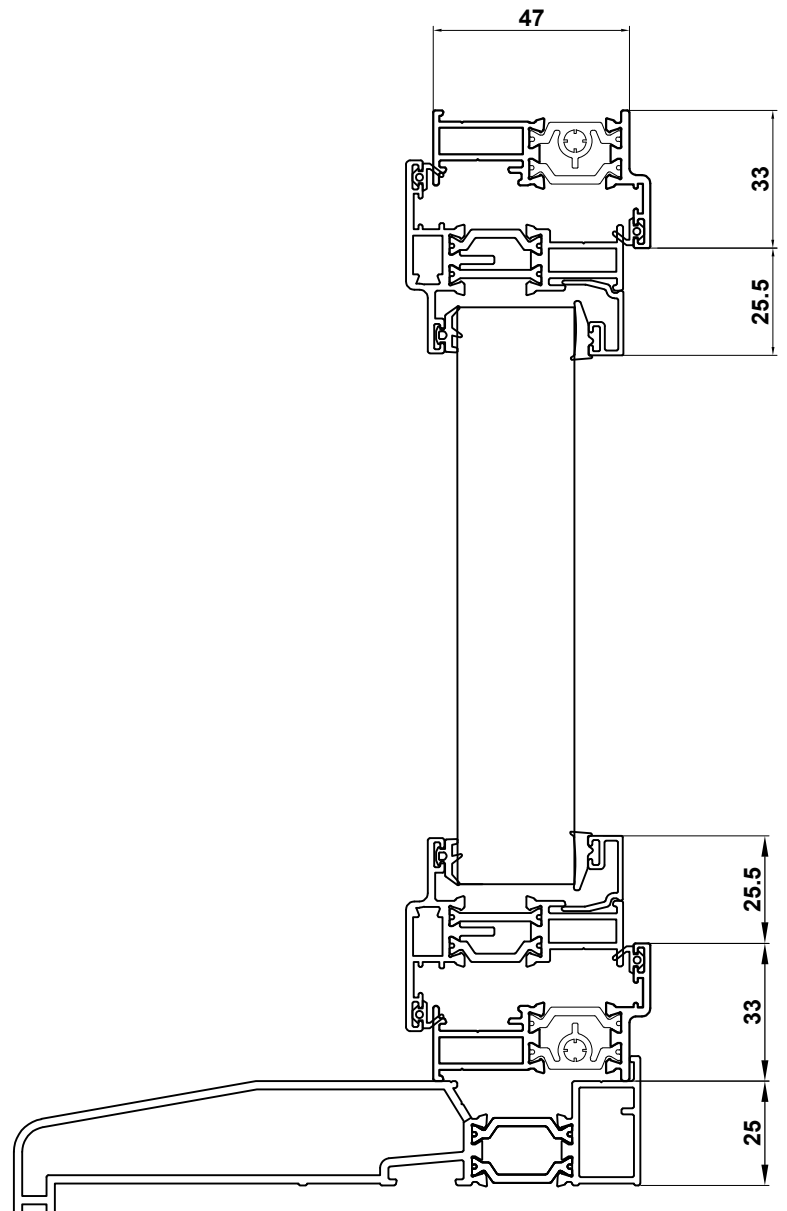
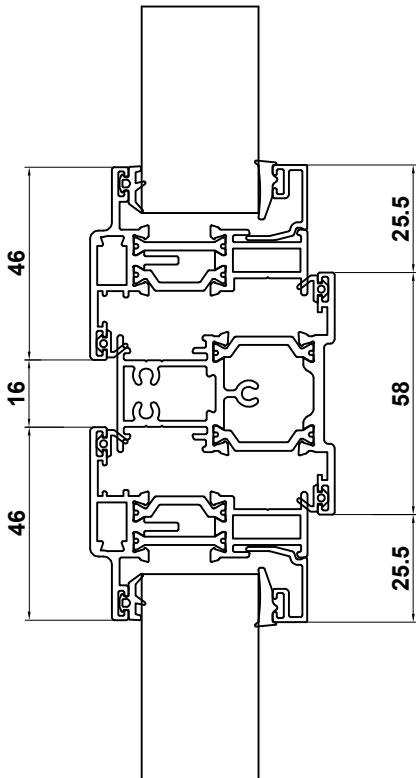
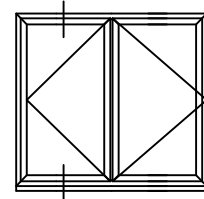
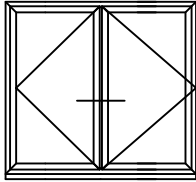
Heavy Duty 25mm Coupler

ETD410 - Outer Frame
ETD4204 - Z Sash
UN3160G - 28mm Glazing
ETC517 - 25mm Heavy Duty Coupler
ETC4110 - Outer Frame



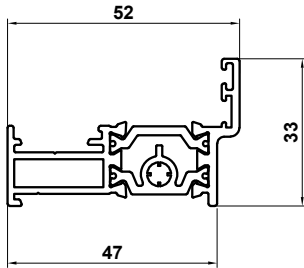
Heritage Windows Assembly Drawings

W20015 - Outer Frame
W20025 - Sash
W20171N - 28mm Glazing Bead
ETC457 - 150mm Sill

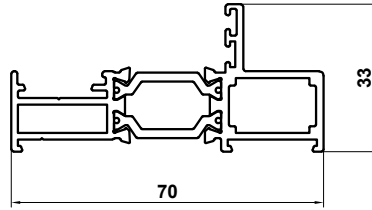


Heritage Windows

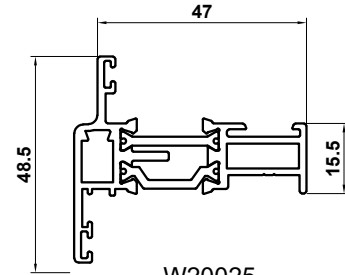
Main Profile



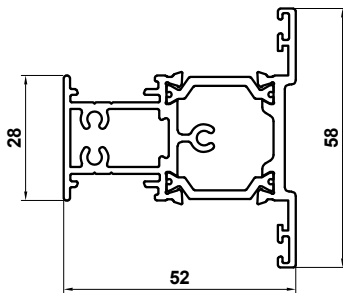
W20015
47mm outer frame



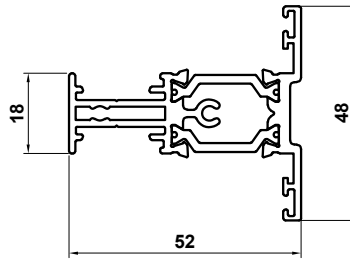
W20017
70mm outer frame



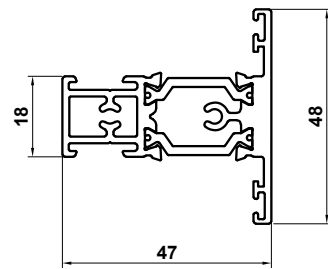
W20025
Sash



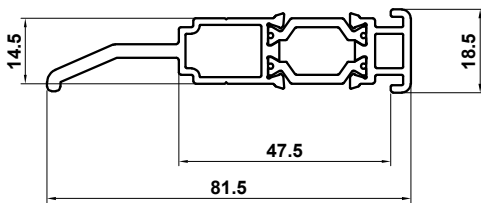
W20034
Mullion/Transom



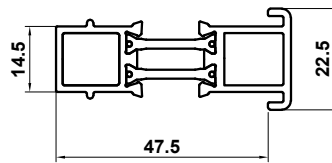
W20035
Slim Transom



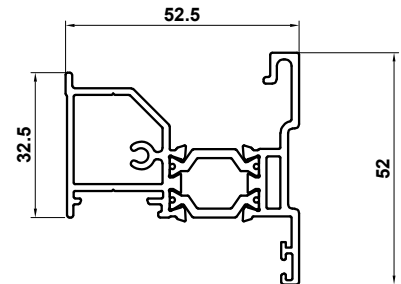
W20133
Sash transom



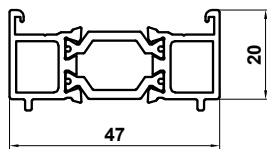
W20485
horizontal coupler with drip



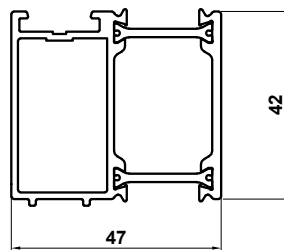
W20489
coupler



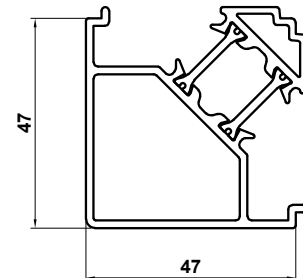
W20244
French casement mullion



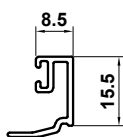
ETD056
20mm add on



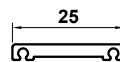
ETD058
42mm add on



ETC047
Corner Post



W20171N
28mm glazing bead



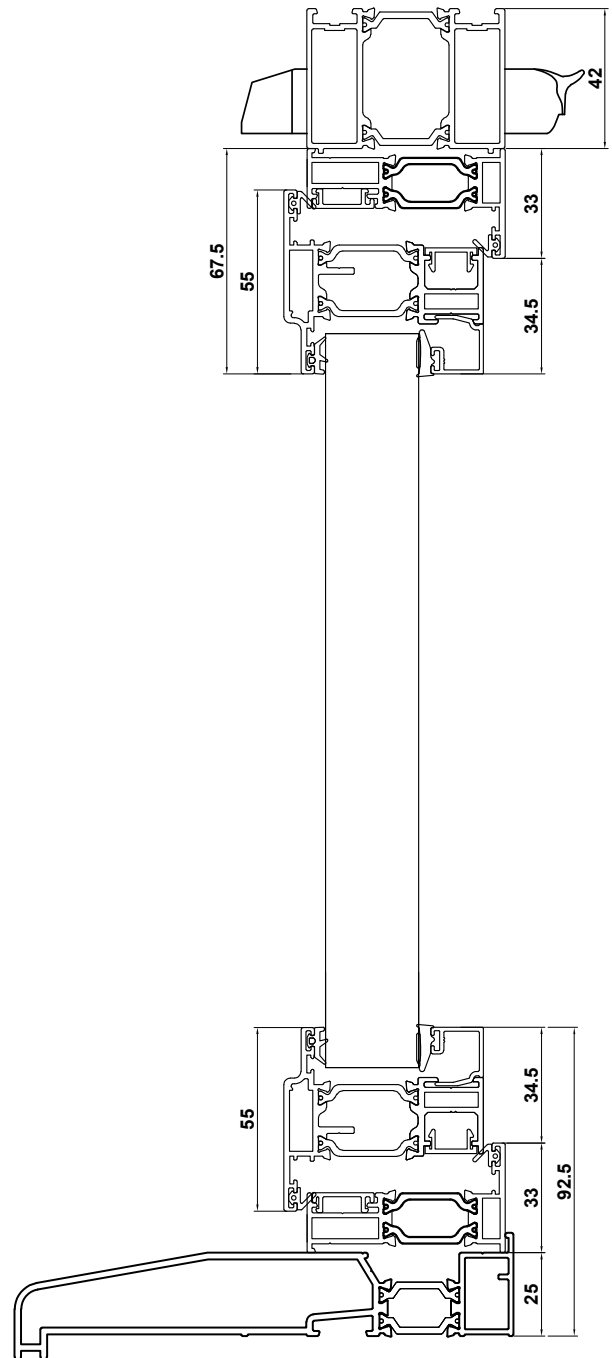
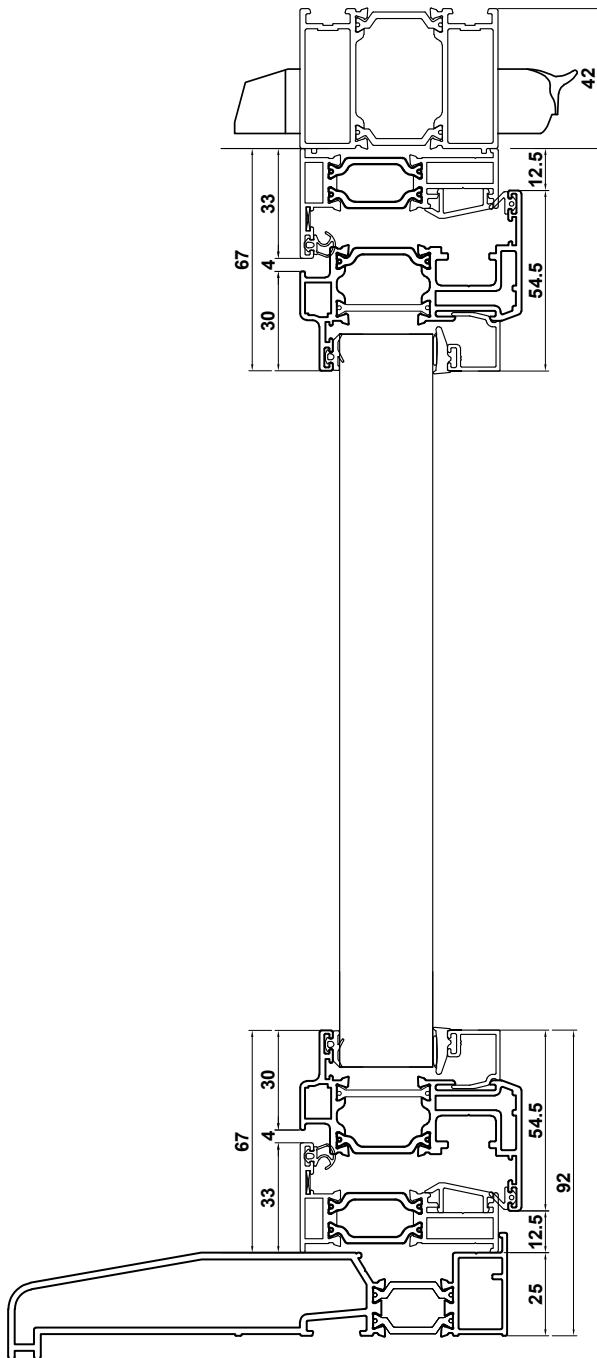
W20165
25mm astragal bar

Heritage Doors Assembly Drawings

Heritage 60 Standard Threshold

Heritage 60 Open In
W20415 - Outer Frame
W20429 - Open In Sash
W20469 - 28mm Glazing Bead
ETC457 - 150mm Sill

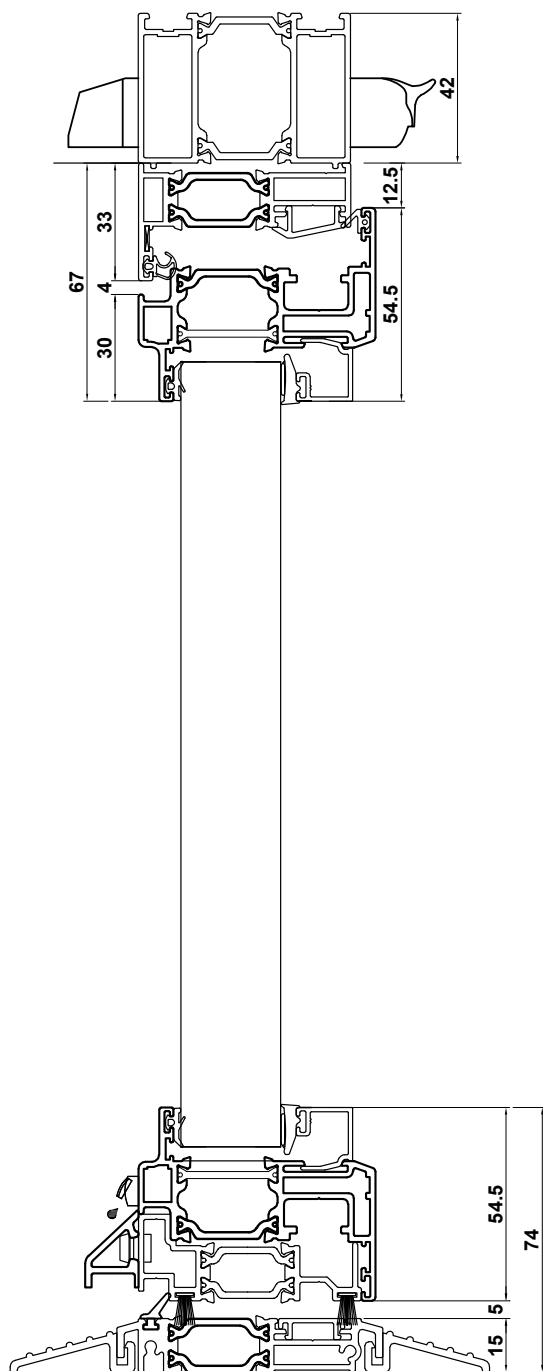
Heritage 60 Open Out
W20415 - Outer Frame
W20424 - Open Out Sash
W20469 - 28mm Glazing Bead
ETC457 - 150mm Sill



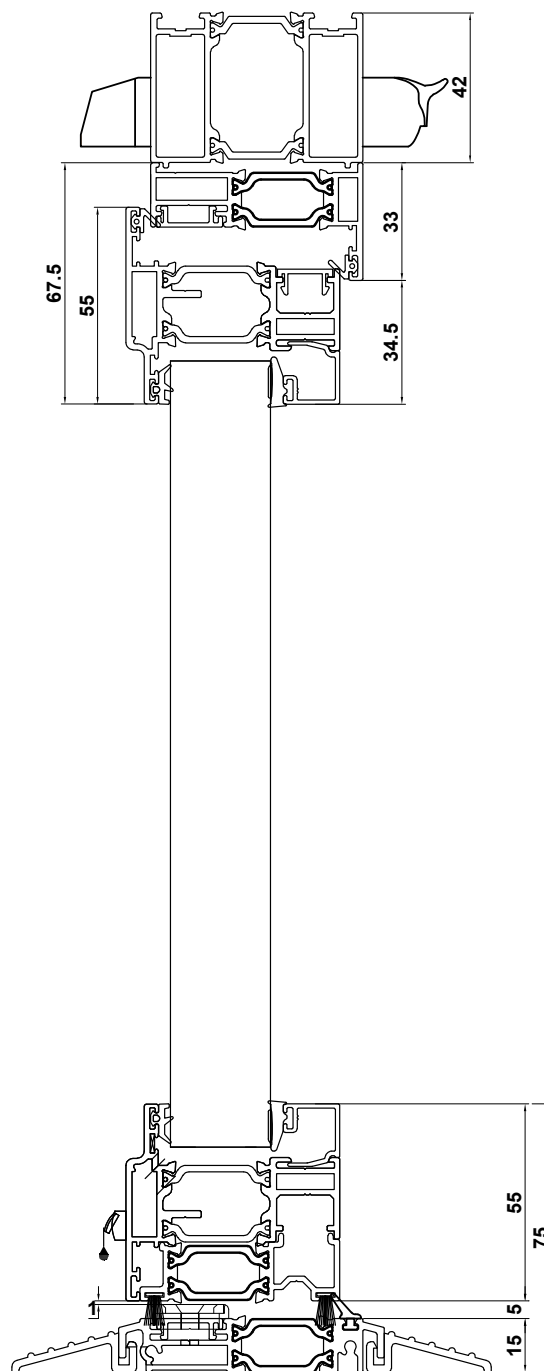
Heritage Doors Assembly Drawings

Heritage 60 Low Threshold

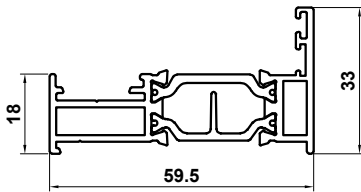
Heritage 60 Open In
W20415 - Outer Frame
W20470 - Low Threshold
EUD03 - Ramps
W20429 - Open In Sash
W20469 - 28mm Glazing Bead



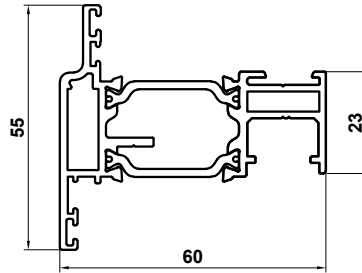
Heritage 60 Open Out
W20415 - Outer Frame
W20470 - Low Threshold
EUD03 - Ramps
W20424 - Open Out Sash
W20469 - 28mm Glazing Bead



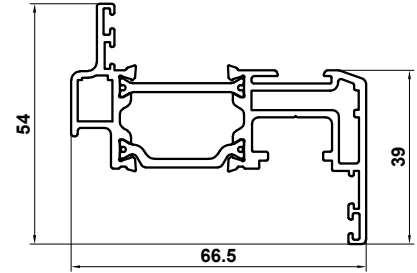
Heritage Doors Main Profile



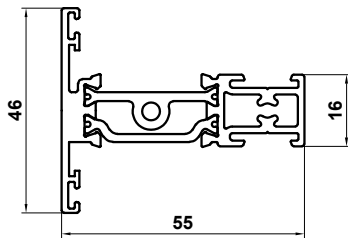
W20415
Outer frame



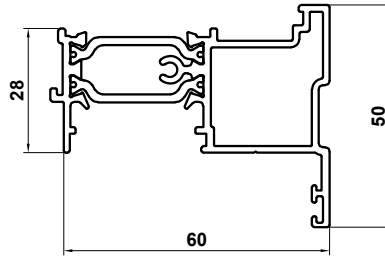
W20424
Door Sash open out



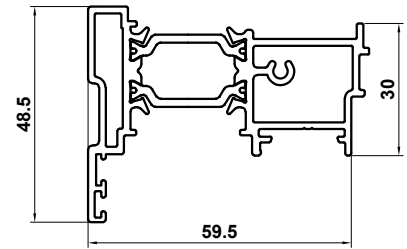
W20429
Door Sash open in



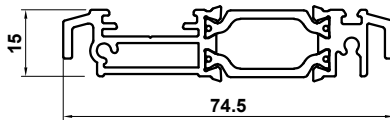
W20430
Transom



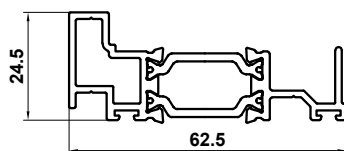
W20446
Flying mullion open out



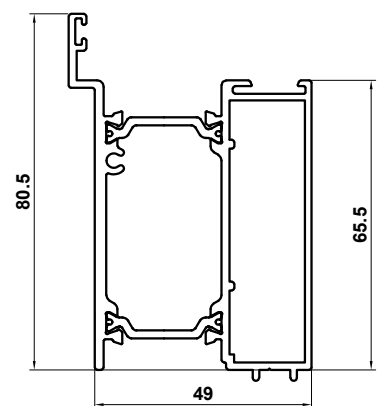
W20449
Flying mullion open in



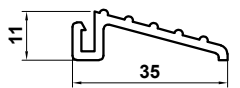
W20470
Low threshold



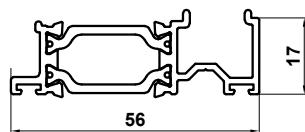
W20474
Low threshold infill open in



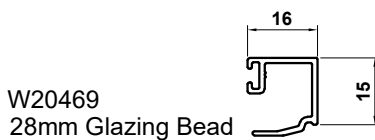
W20438
Lock Box



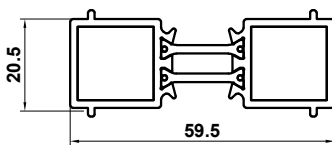
EUD03
Threshold ramp



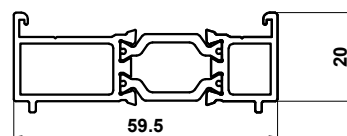
W20472
Low threshold infill open out



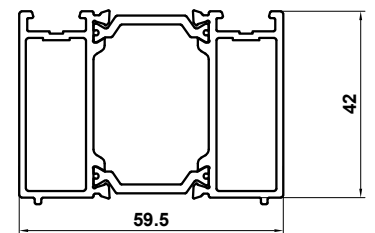
W20469
28mm Glazing Bead



ETC553
20mm coupler



ETC557
20mm Add on

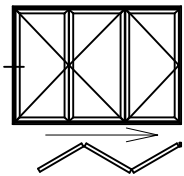


ETC652
42mm Add on

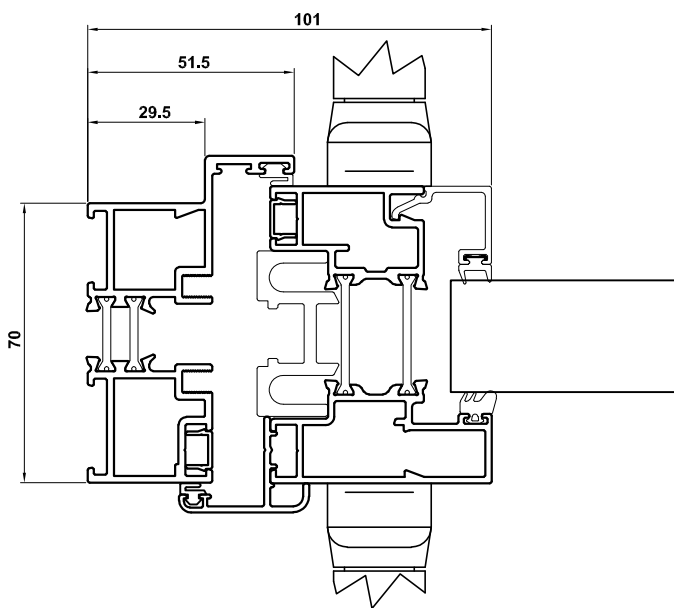
Bi-folding Door Assembly Drawings

New Visofold Slim 1000 Quickglaze Bi-folding Door

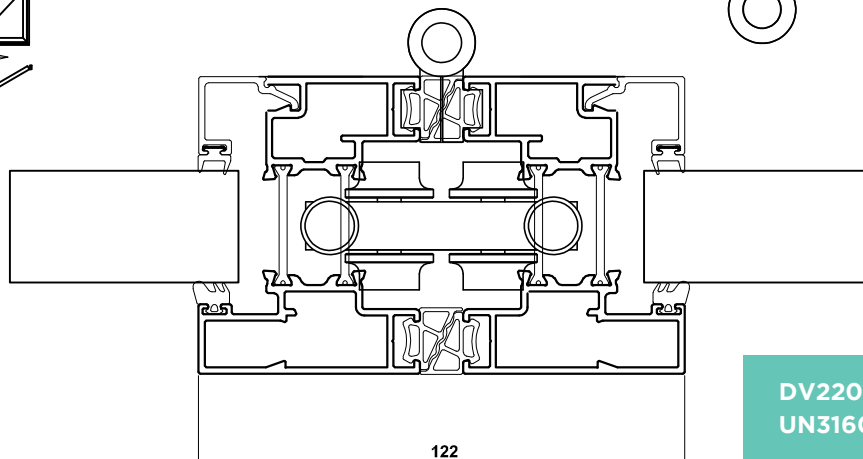
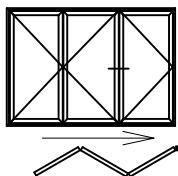
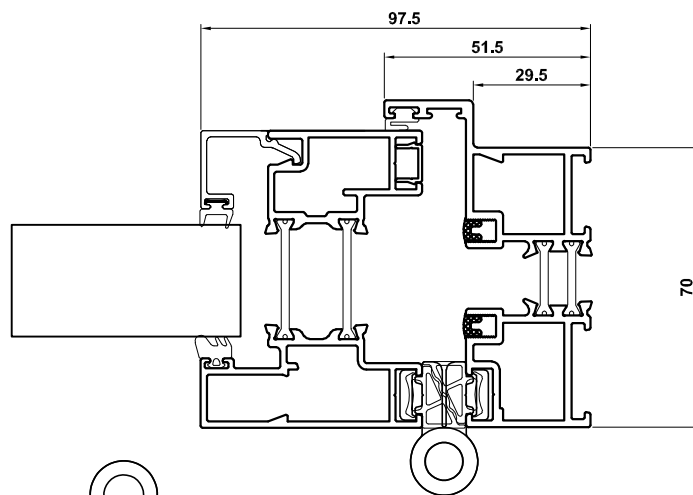
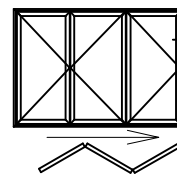
Jamb & Mullion Details



DV14 - Outer Frame
DV220 - Slim Sash
UN3160G - 28mm Glazing



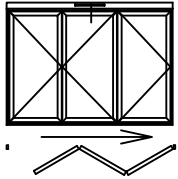
DV14 - Outer Frame
DV220 - Slim Sash
UN3160G - 28mm Glazing



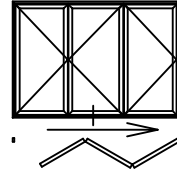
DV220 - Slim Sash
UN3160G - 28mm Glazing

Bi-folding Door Assembly Drawings

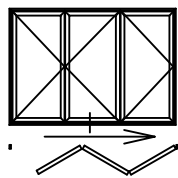
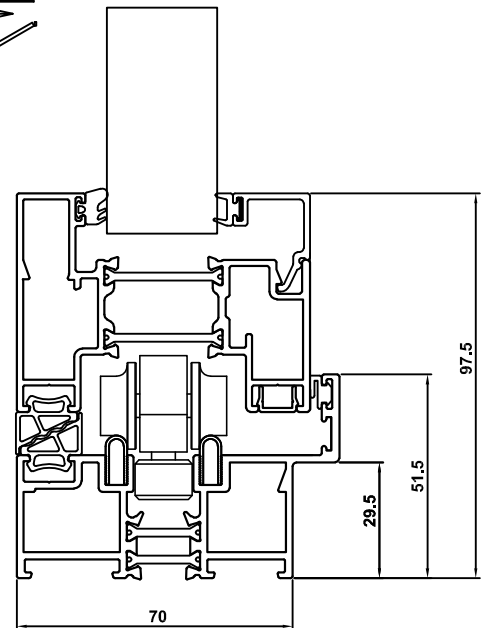
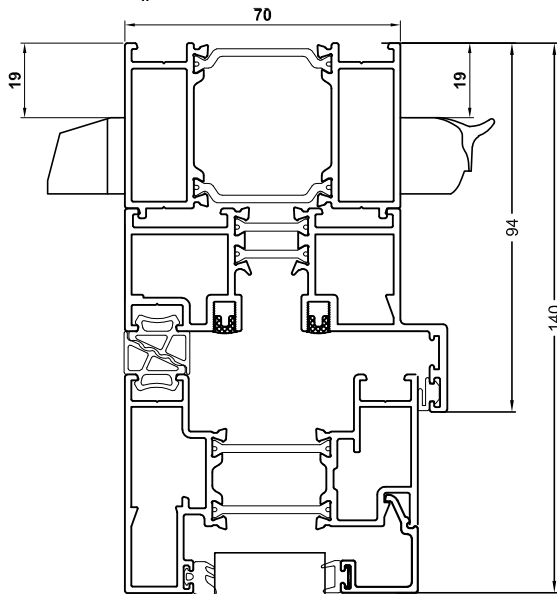
New Visofold Slim 1000 Quickglaze Bi-folding Door Head & Threshold Details (Integrated Cill Threshold shown)



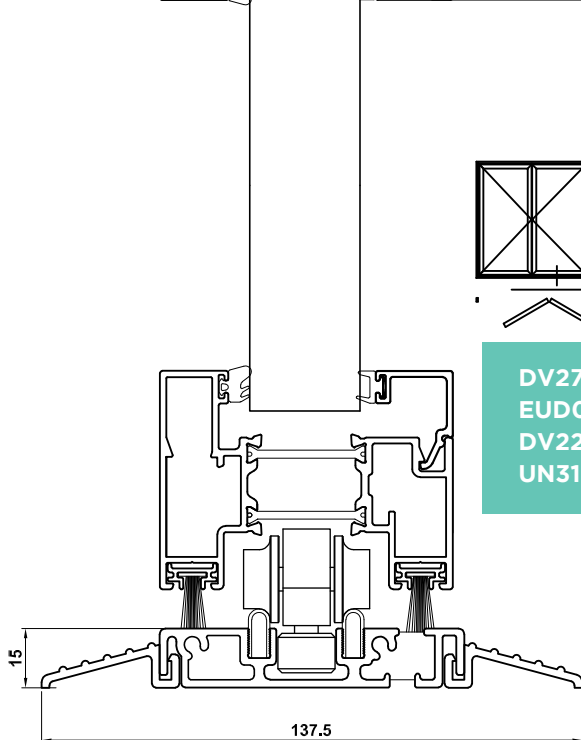
DV14 - Outer Frame
DV220 - Slim Sash
UN3160G - 28mm Glazing
UN3042 - Outer Frame Extension



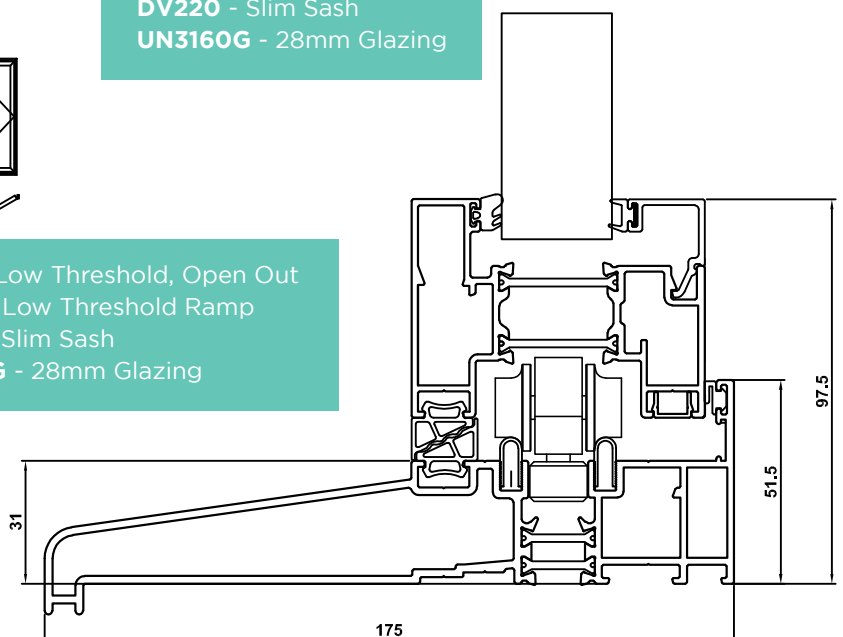
DV14 - Outer Frame
DV220 - Slim Sash
UN3160G - 28mm Glazing



DV176 - Cill Threshold
DV220 - Slim Sash
UN3160G - 28mm Glazing



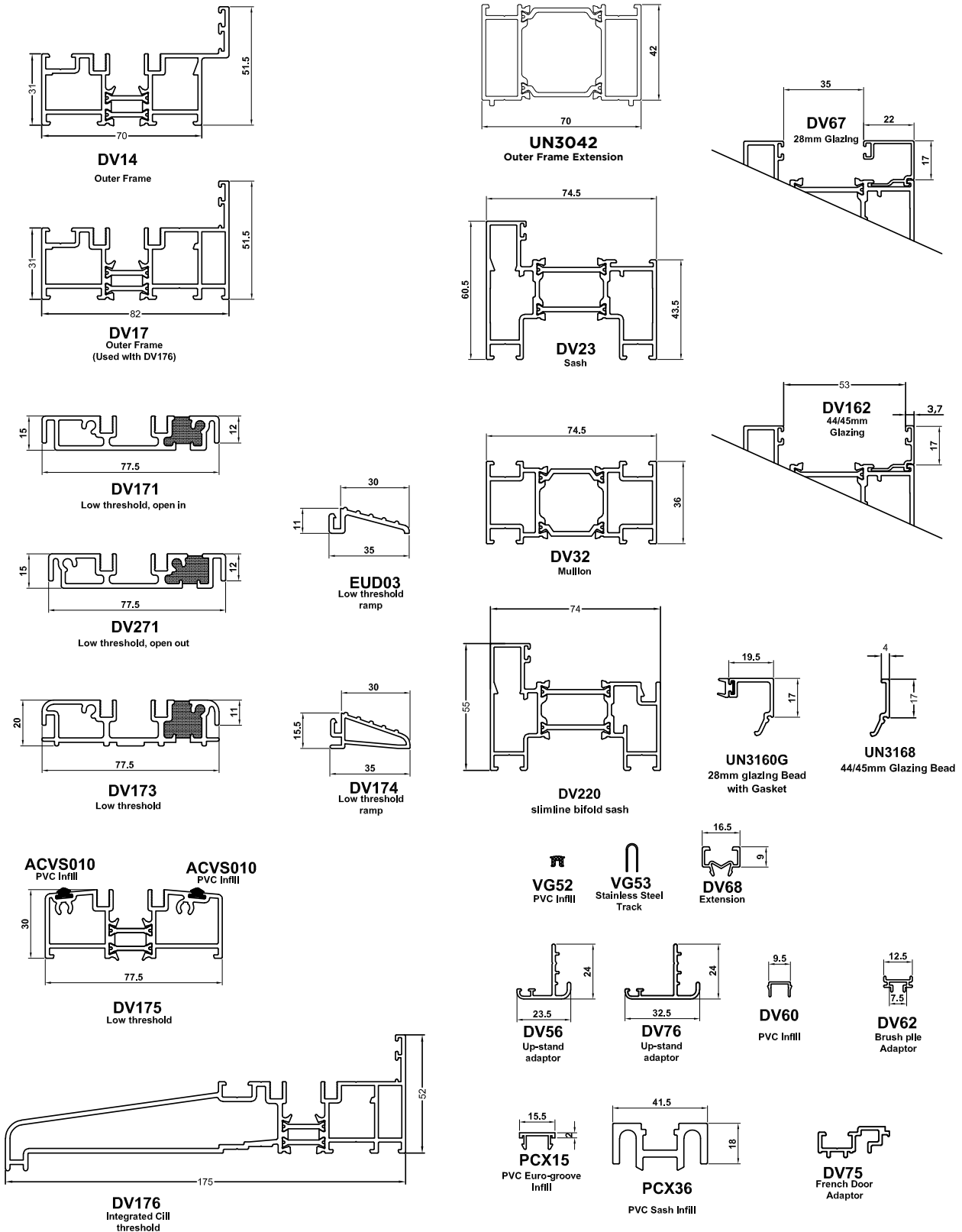
DV271 - Low Threshold, Open Out
EUD03 - Low Threshold Ramp
DV220 - Slim Sash
UN3160G - 28mm Glazing



Not weather rated

Bi-folding Door Main Profiles

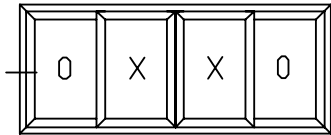
Visofold SLIM 1000 Quickglaze



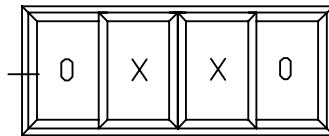
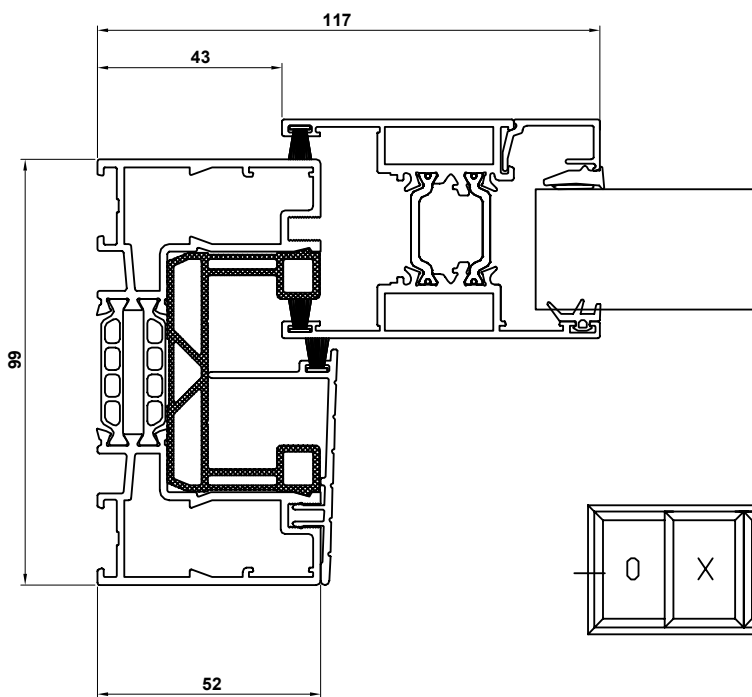
Sliding Door Assembly Drawings

Visoglide Plus (Two Track)

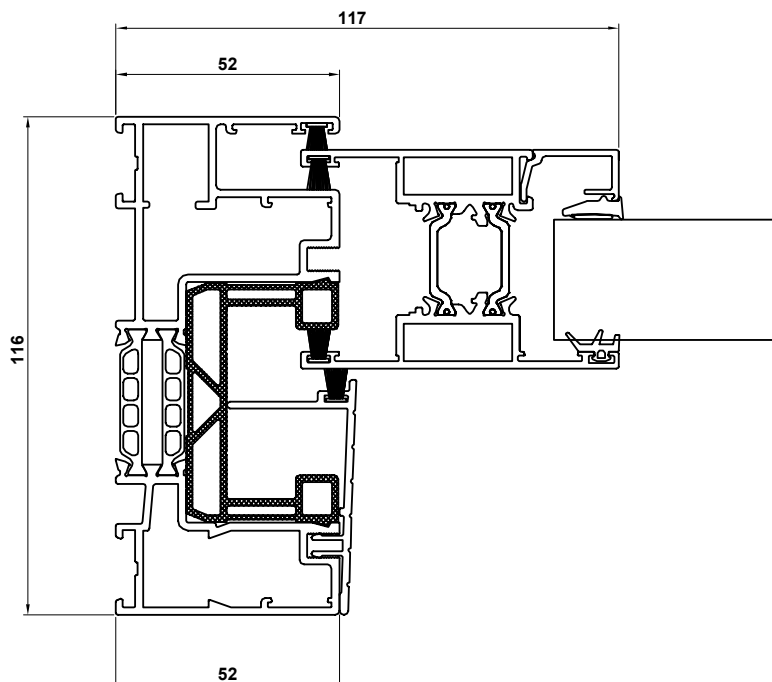
Jamb Details



VG510 - Two Track Outer Frame
VG520 - Sash
VG560 - 28mm Glazing Bead



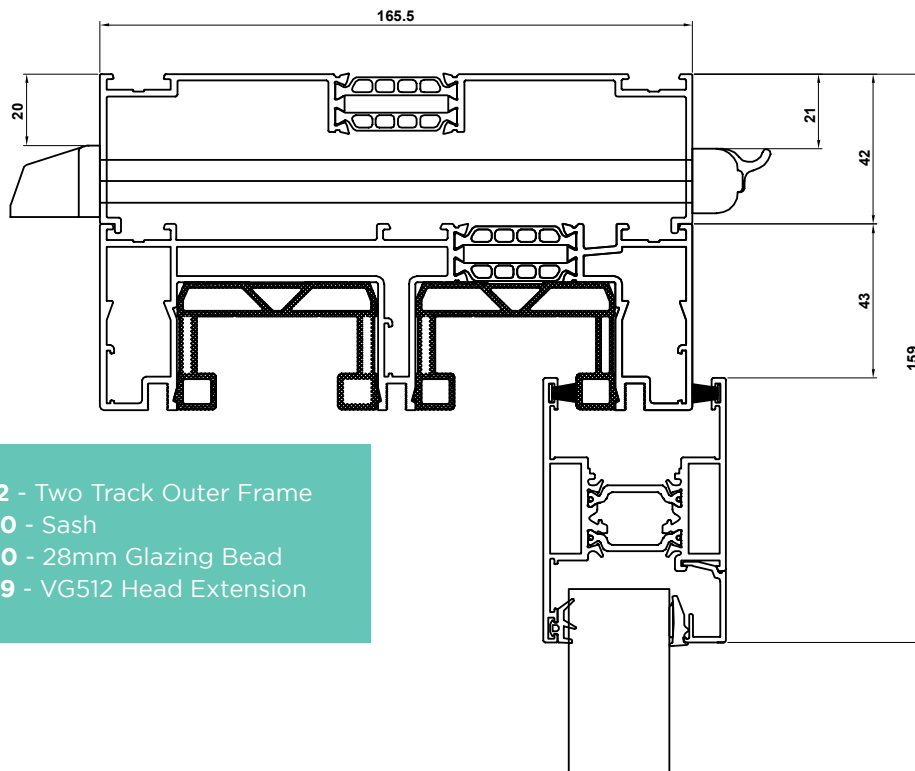
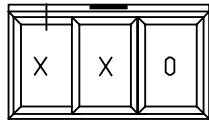
VG511 - Two Track Outer Frame
with Internal Upstand
VG520 - Sash
VG560 - 28mm Glazing Bead



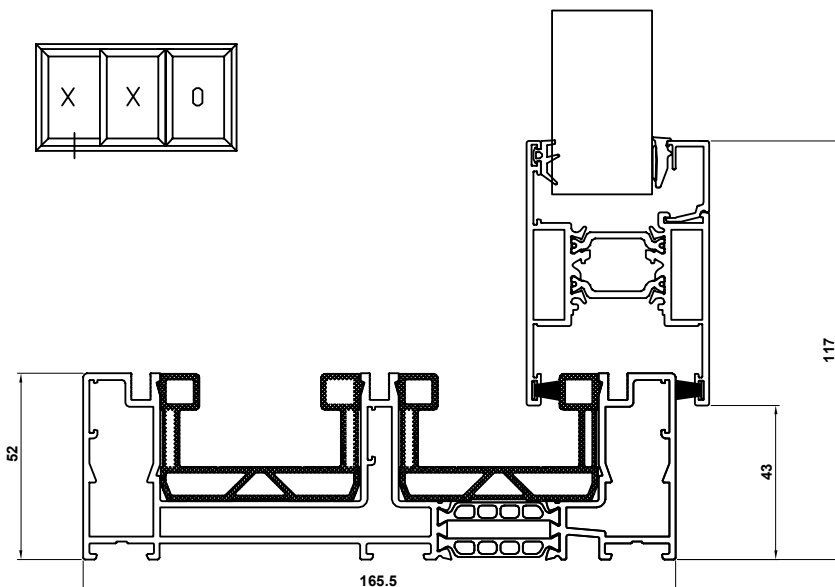
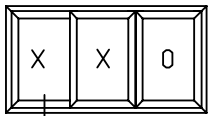
Sliding Door Assembly Drawings

Visoglide Plus (Three Track)

Trickle Vent, Head & Threshold Details – With Standard Frame



VG512 - Two Track Outer Frame
VG520 - Sash
VG560 - 28mm Glazing Bead
VG559 - VG512 Head Extension

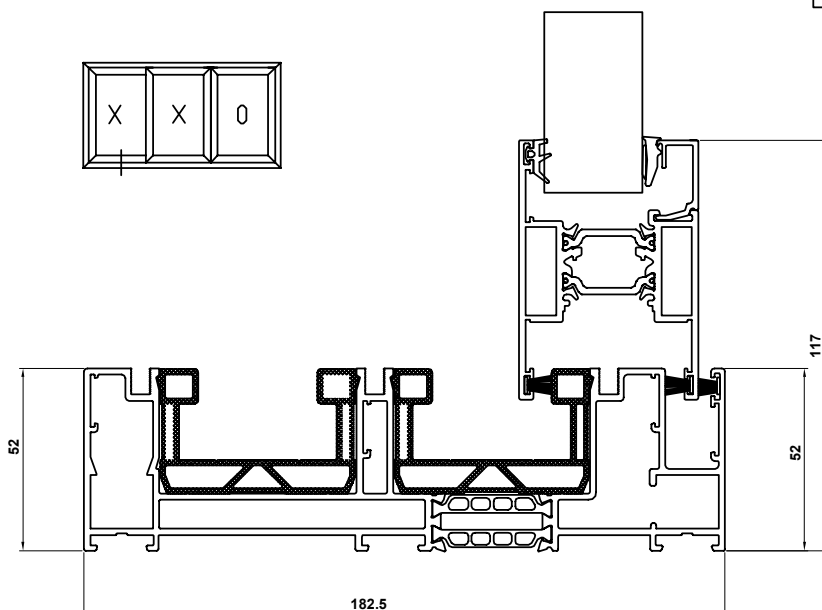
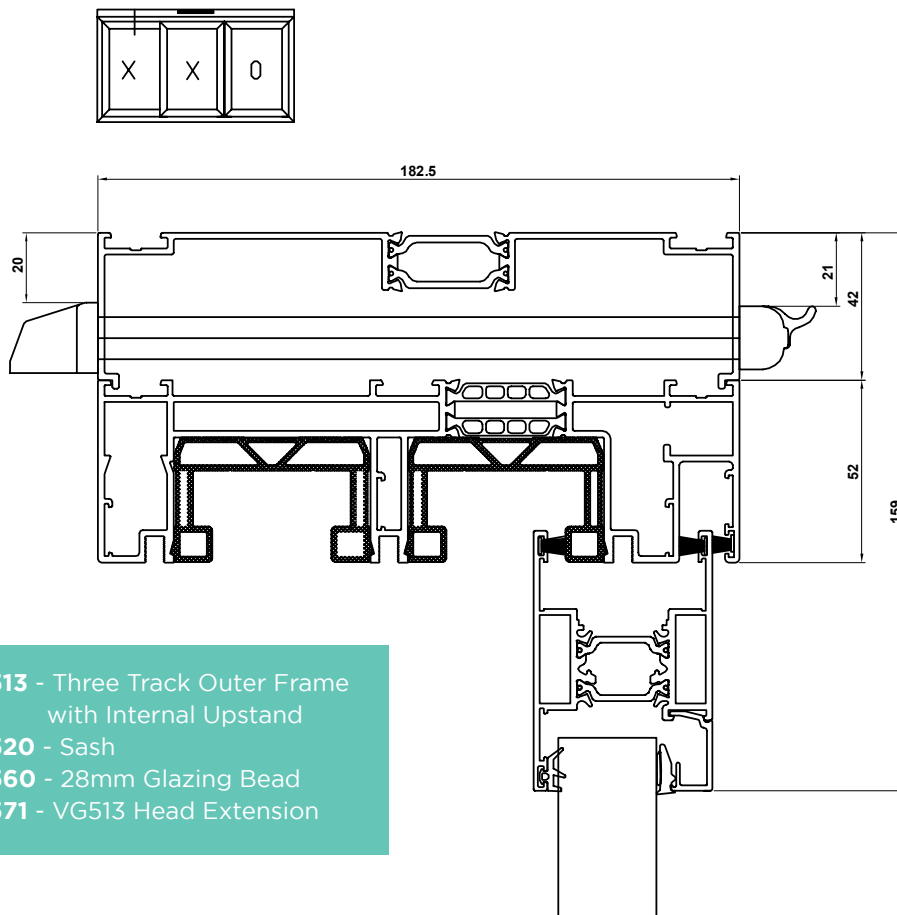


VG512 - Three Track Outer Frame
VG520 - Sash
VG560 - 28mm Glazing Bead

Sliding Door Assembly Drawings

Visoglide Plus (Three Track)

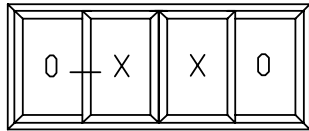
Head & Threshold Details - With Internal Upstand Frame



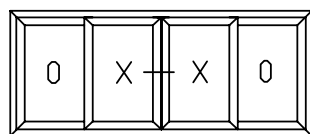
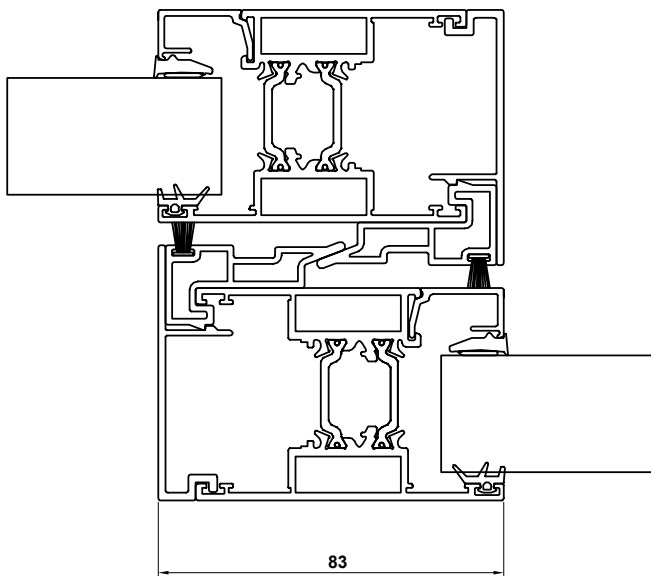
Sliding Door Assembly Drawings

Visoglide Plus

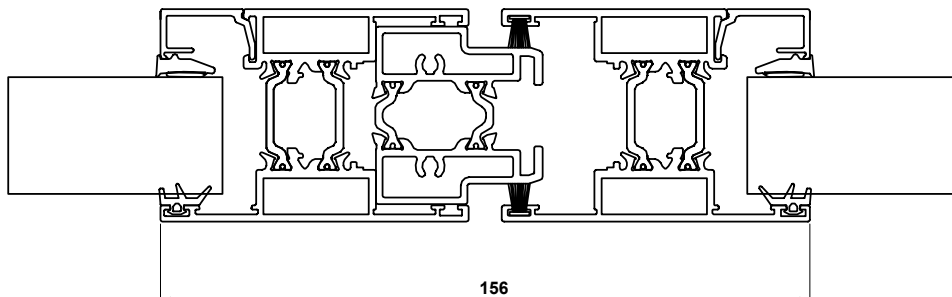
Mullion Details



VG520 - Sash
VG551 - PVCu Interlock
VG530 - Interlock Cover
VG560 - 28mm Glazing Bead



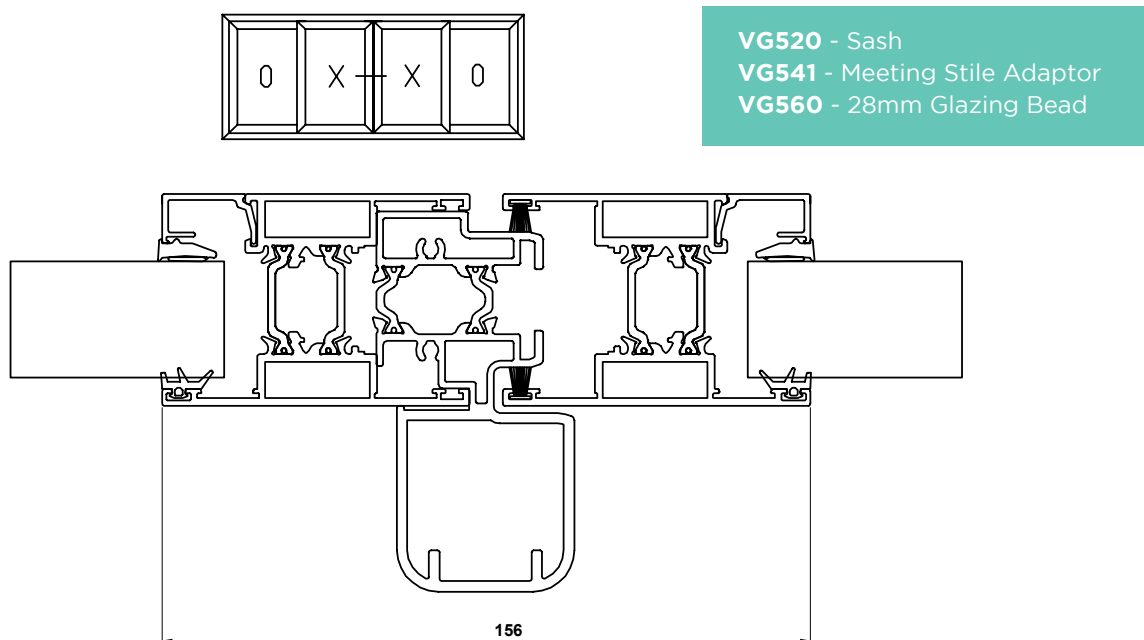
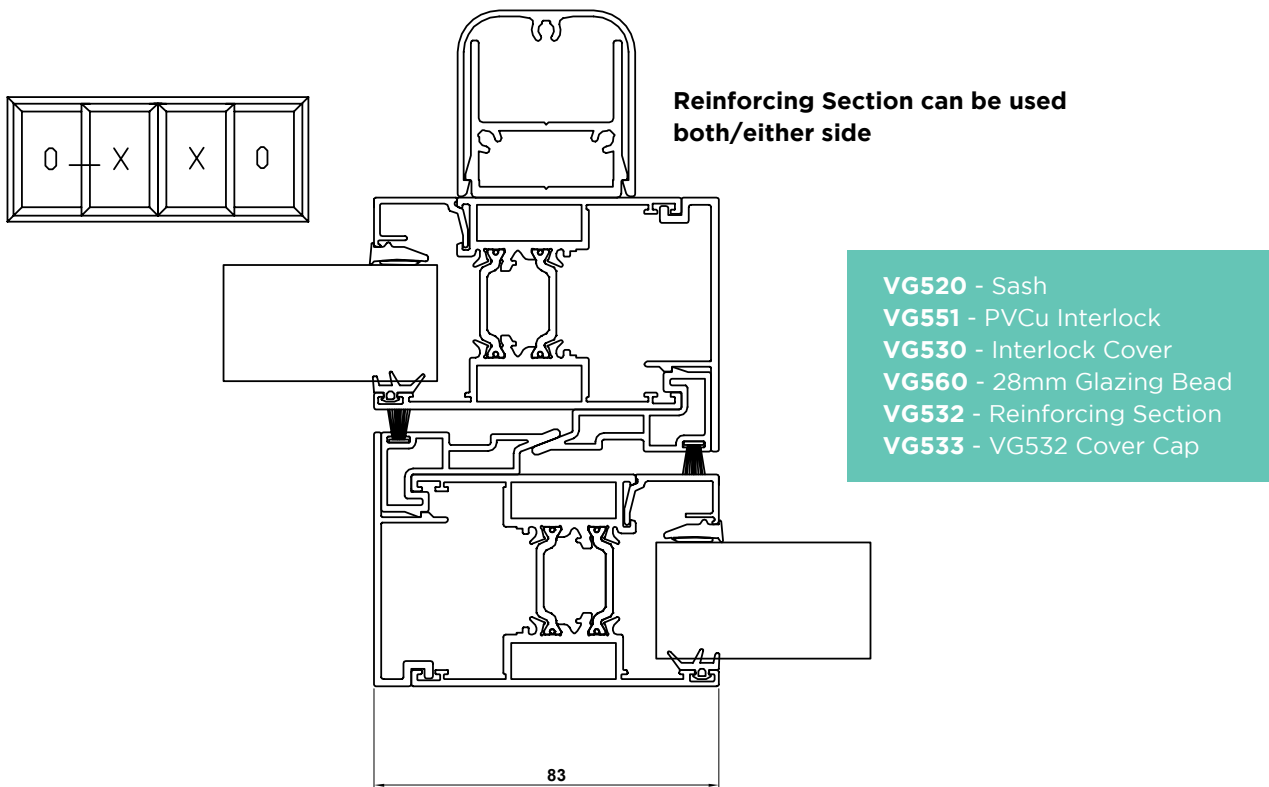
VG520 - Sash
VG540 - Meeting Stile Adaptor
VG560 - 28mm Glazing Bead



Sliding Door Assembly Drawings

Visoglide Plus

Reinforced Mullion Details



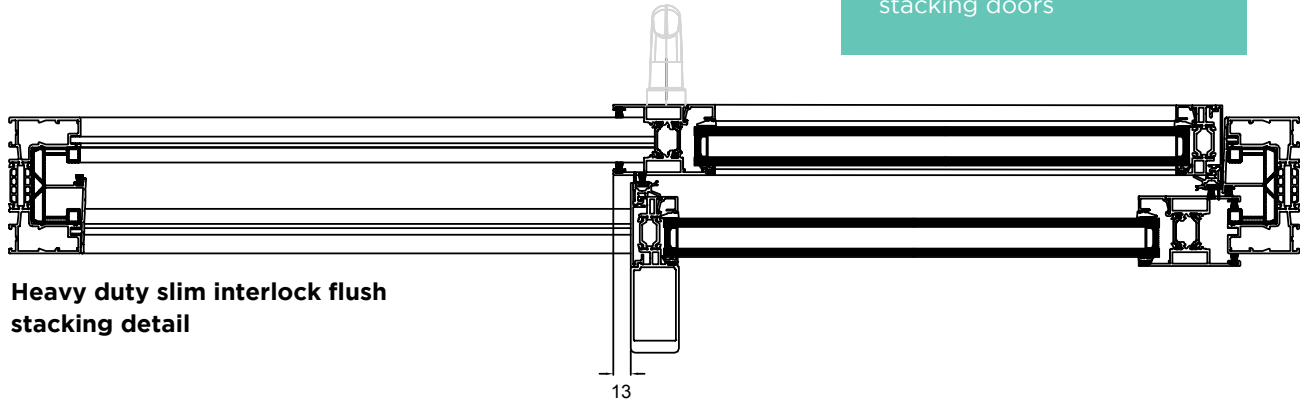
Sliding Door Assembly Drawings

Visoglide Plus

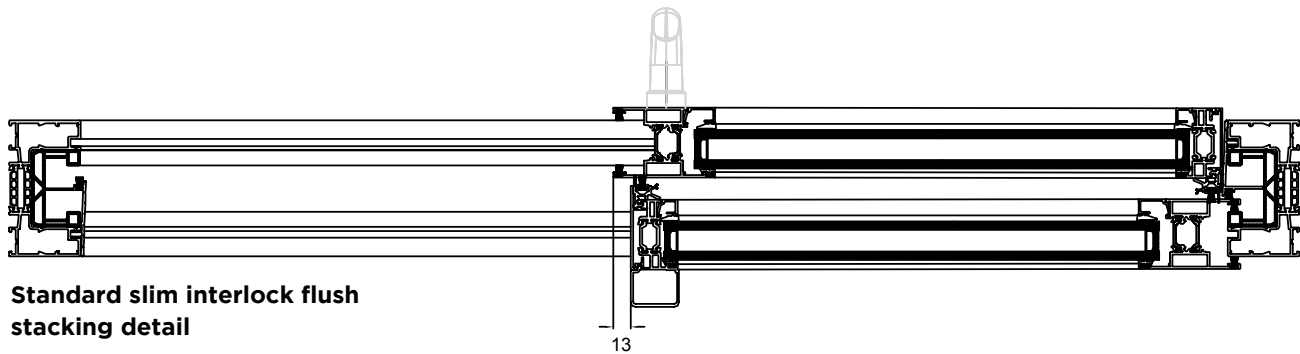
Flush Stacking

Note:

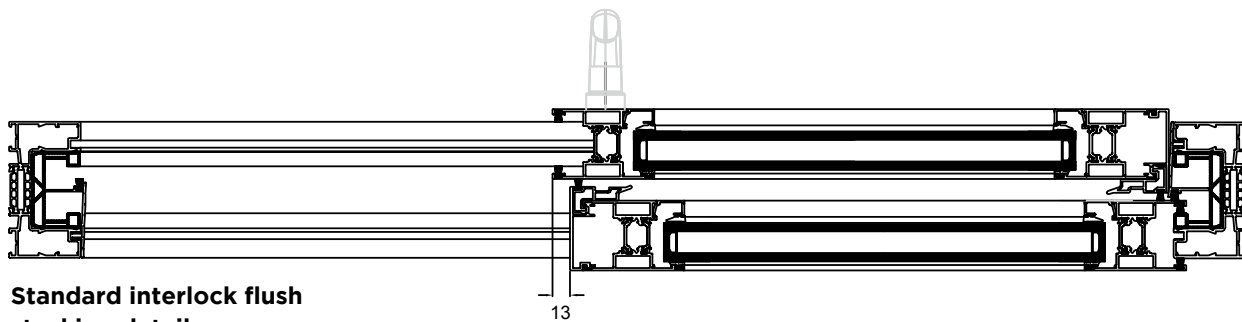
No external handle on flush stacking doors



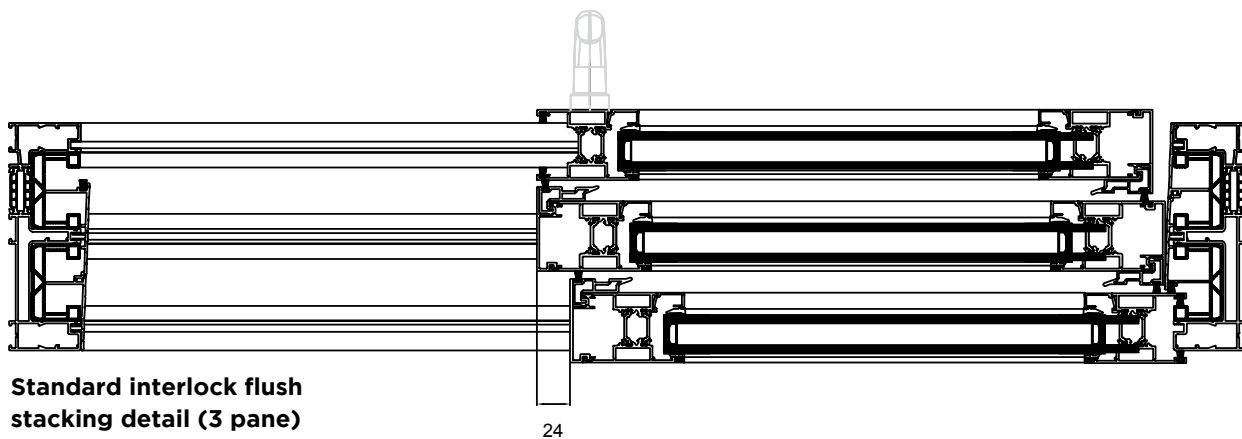
Heavy duty slim interlock flush stacking detail



Standard slim interlock flush stacking detail



Standard interlock flush stacking detail

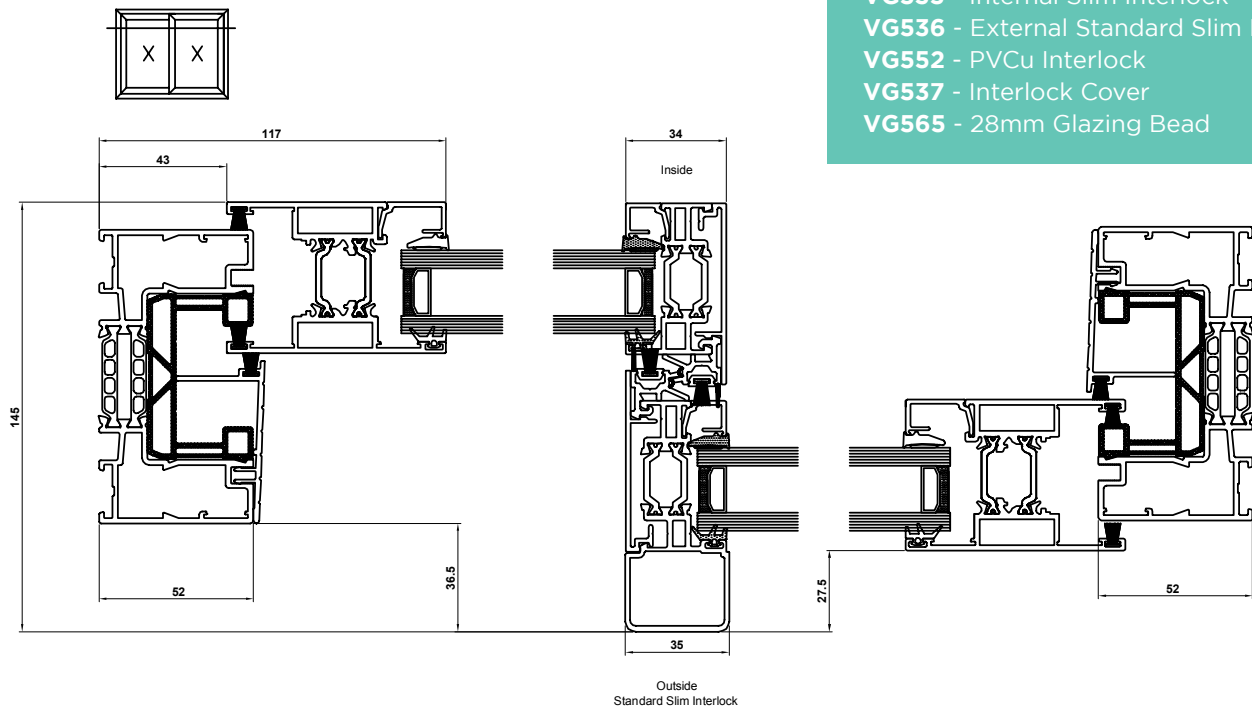


Standard interlock flush stacking detail (3 pane)

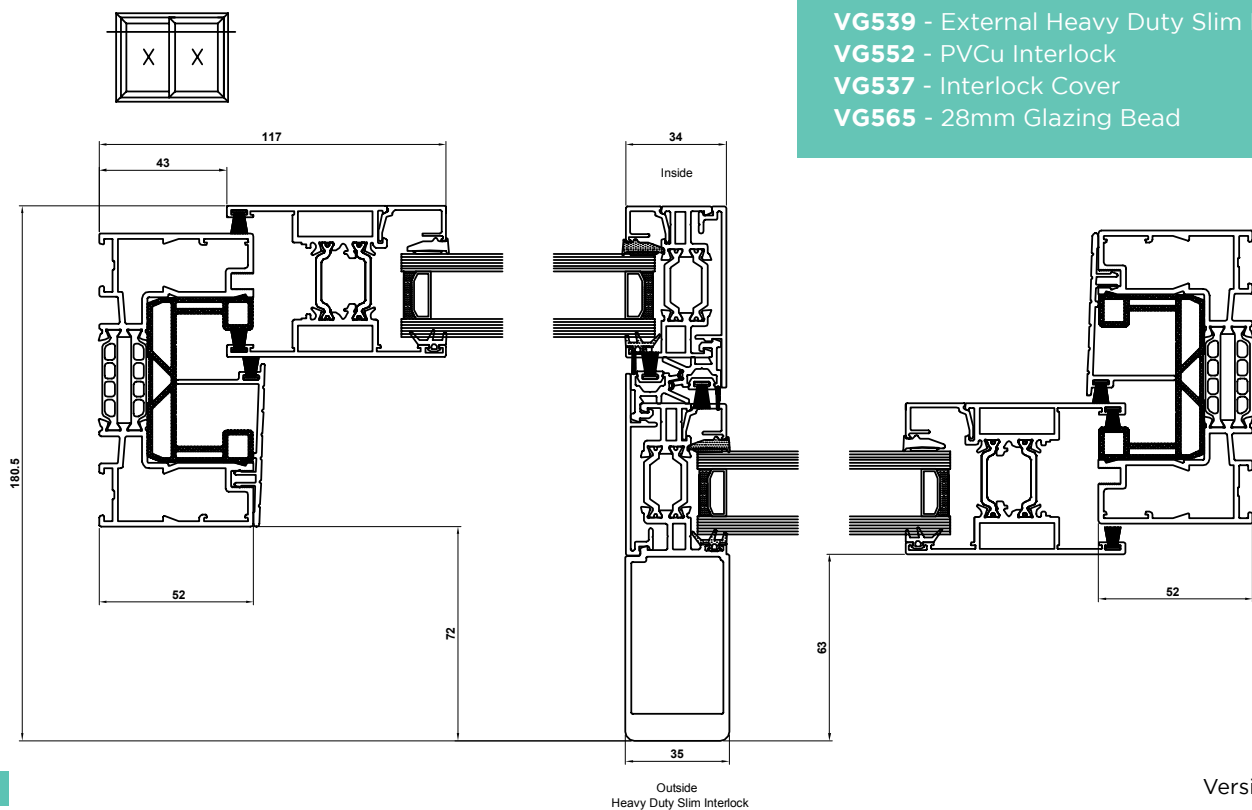
Sliding Door Assembly Drawings

Visoglide Plus

Slim Interlock Details



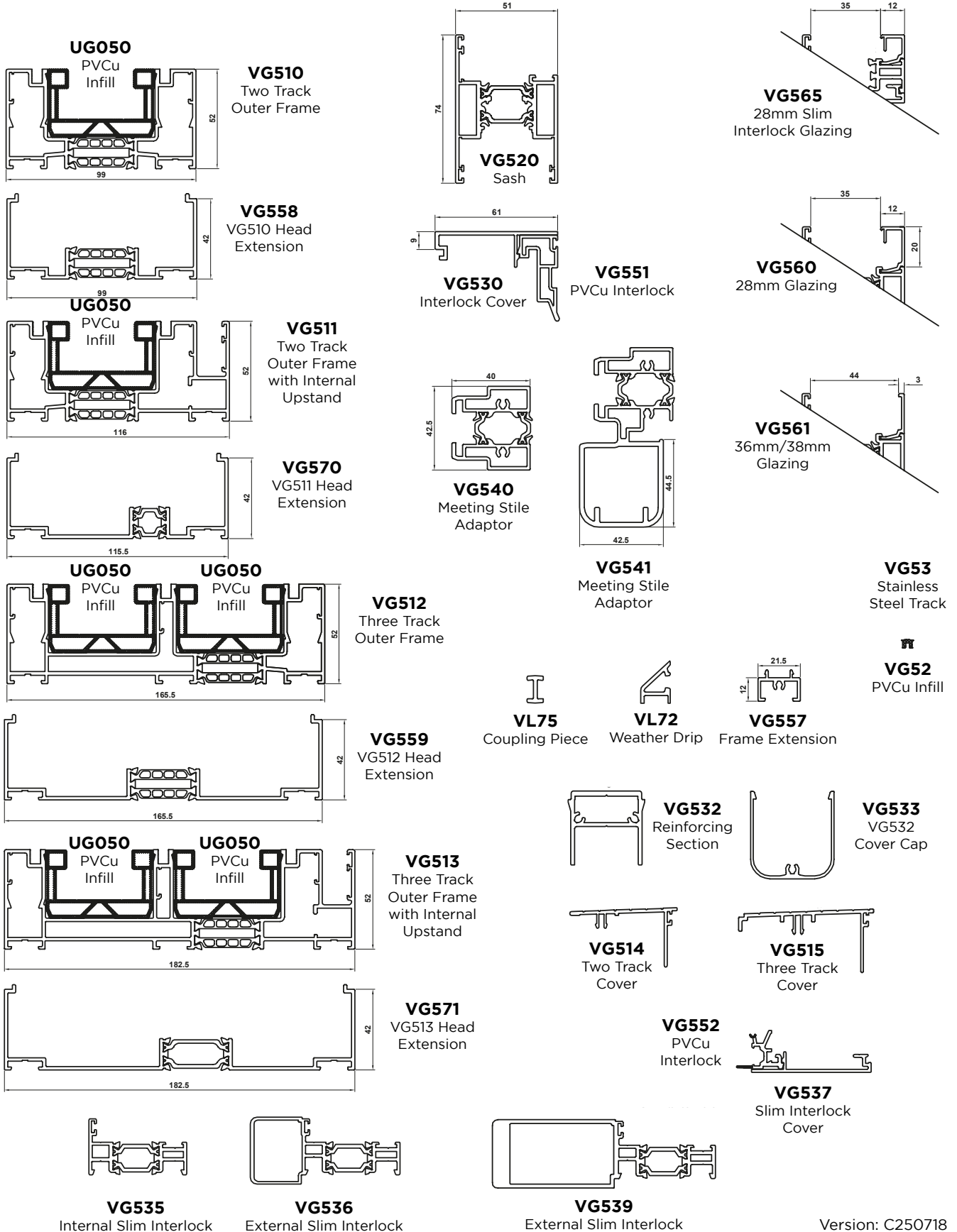
- VG510 - Two Track Outer Frame
- VG520 - Sash
- VG535 - Internal Slim Interlock
- VG536 - External Standard Slim Interlock
- VG552 - PVCu Interlock
- VG537 - Interlock Cover
- VG565 - 28mm Glazing Bead



- VG510 - Two Track Outer Frame
- VG520 - Sash
- VG535 - Internal Slim Interlock
- VG539 - External Heavy Duty Slim Interlock
- VG552 - PVCu Interlock
- VG537 - Interlock Cover
- VG565 - 28mm Glazing Bead

Sliding Door Main Profiles

Visoglide Plus



Non-Stock RAL Colour Options

All colours listed here will incur a paint set up charge per colour.

| |
|-----------|
| 3099ST |
| 9LAANO |
| AN1003 |
| BS 00A01M |
| BS 00A05 |
| BS 00A05M |
| BS 00A05S |
| BS 00A09 |
| BS 00A13M |
| BS 00E55M |
| BS 04C39 |
| BS 04C39M |
| BS 04E53M |
| BS 04E53S |
| BS 08B15 |
| BS 08B15M |
| BS 08B15S |
| BS 08B17 |
| BS 08B29 |
| BS 08B29M |
| BS 08B29S |
| BS 08C31 |
| BS 08C37 |
| BS 10A01M |
| BS 10A03M |
| BS 10A03S |
| BS 10A05M |
| BS 10B15 |
| BS 10B15M |
| BS 10B15S |
| BS 10B19M |
| BS 18B25M |
| BS 288C |
| BS 381C63 |
| BS 48A09 |
| BS 538 |
| BS 81C628 |
| BS 81C631 |
| BS OA7000 |
| KL001 |
| KL002 |
| KL003 |
| KL004 |
| KL006 |
| KL007 |
| KL009D |
| KL010 |
| KL011 |
| KL012 |
| KL013 |
| RAL 1000G |
| RAL 1000M |
| RAL 1001G |
| RAL 1001M |

| |
|-------------------|
| RAL 1001S |
| RAL 1002G |
| RAL 1002M |
| RAL 1003G |
| RAL 1003M |
| RAL 1004G |
| RAL 1004M |
| RAL 1005G |
| RAL 1005M |
| RAL 1006G |
| RAL 1006M |
| RAL 1007G |
| RAL 1007M |
| RAL 1011G |
| RAL 1011M |
| RAL 1012G |
| RAL 1013G |
| RAL 1013M |
| RAL 1013S |
| RAL 1013ST |
| RAL 1014G |
| RAL 1014M |
| RAL 1014S |
| RAL 1015G |
| RAL 1015M (KL001) |
| RAL 1015S |
| RAL 1015ST |
| RAL 1016G |
| RAL 1016M |
| RAL 1017G |
| RAL 1017M |
| RAL 1018G |
| RAL 1018M |
| RAL 1019G |
| RAL 1019M |
| RAL 1019S |
| RAL 1020G |
| RAL 1020M |
| RAL 1020S |
| RAL 1021G |
| RAL 1021M |
| RAL 1023G |
| RAL 1023M |
| RAL 1024G |
| RAL 1024M |
| RAL 1027G |
| RAL 1027M |
| RAL 1028G |
| RAL 1028M |
| RAL 1032G |
| RAL 1032M |
| RAL 1033G |
| RAL 1034G |
| RAL 1034M |

| |
|-------------------|
| RAL 1035S |
| RAL 1036M |
| RAL 1037G |
| RAL 2000G |
| RAL 2000M |
| RAL 2001G |
| RAL 2002G |
| RAL 2002M |
| RAL 2002S |
| RAL 2003G |
| RAL 2004G |
| RAL 2004M |
| RAL 2008G |
| RAL 2008M |
| RAL 2009G |
| RAL 2009M |
| RAL 2010G |
| RAL 2010M |
| RAL 2011G |
| RAL 2011M |
| RAL 2012G |
| RAL 2013M |
| RAL 2236M |
| RAL 3000G |
| RAL 3000M |
| RAL 3001G |
| RAL 3001M |
| RAL 3002G |
| RAL 3002M |
| RAL 3003G |
| RAL 3003M |
| RAL 3003S |
| RAL 3004G |
| RAL 3004M (KL002) |
| RAL 3004S |
| RAL 3005G |
| RAL 3005M |
| RAL 3005ST |
| RAL 3007M |
| RAL 3009M |
| RAL 3009S |
| RAL 3009ST |
| RAL 3011G |
| RAL 3012G |
| RAL 3012M |
| RAL 3013G |
| RAL 3013M |
| RAL 3014G |
| RAL 3014M |
| RAL 3015G |
| RAL 3015M |
| RAL 3016G |
| RAL 3016M |
| RAL 3017G |

| |
|-------------------|
| RAL 3017M |
| RAL 3018G |
| RAL 3018M |
| RAL 3020G |
| RAL 3020M |
| RAL 3020S |
| RAL 3022G |
| RAL 3022M |
| RAL 3031S |
| RAL 4002G |
| RAL 4003G |
| RAL 4005G |
| RAL 4005M |
| RAL 4008G |
| RAL 4009G |
| RAL 5000G |
| RAL 5000M |
| RAL 5001G |
| RAL 5001M |
| RAL 5001S |
| RAL 5002G |
| RAL 5002M |
| RAL 5002S |
| RAL 5003G |
| RAL 5003M |
| RAL 5003S |
| RAL 5004G |
| RAL 5004M |
| RAL 5005G |
| RAL 5005M |
| RAL 5005S |
| RAL 5007G |
| RAL 5007M |
| RAL 5008G |
| RAL 5008M |
| RAL 5008S |
| RAL 5009G |
| RAL 5009M |
| RAL 5009S |
| RAL 5010G |
| RAL 5010M |
| RAL 5010S |
| RAL 5011G |
| RAL 5011M (KL003) |
| RAL 5011S |
| RAL 5011ST |
| RAL 5012G |
| RAL 5012M |
| RAL 5012S |
| RAL 5013G |
| RAL 5013M |
| RAL 5013S |
| RAL 5014G |
| RAL 5014M |

Price on application for any colours/finishes not listed.

Note: Non-stock RAL colours are available on REAL Aluminium **standard** aluminium lead times.

Non-Stock RAL Colour Options

All colours listed here will incur a paint set up charge per colour.

| |
|-------------------|
| RAL 5014S |
| RAL 5015G |
| RAL 5015M |
| RAL 5015S |
| RAL 5017G |
| RAL 5017M |
| RAL 5017S |
| RAL 5018G |
| RAL 5018M |
| RAL 5019G |
| RAL 5019M |
| RAL 5019S |
| RAL 5020G |
| RAL 5020M |
| RAL 5020S |
| RAL 5021G |
| RAL 5021M |
| RAL 5021S |
| RAL 5022G |
| RAL 5022M |
| RAL 5022S |
| RAL 5023G |
| RAL 5023M |
| RAL 5024G |
| RAL 5024M |
| RAL 5024S |
| RAL 5111ST |
| RAL 6000G |
| RAL 6000M |
| RAL 6001G |
| RAL 6001M |
| RAL 6001S |
| RAL 6002G |
| RAL 6002M |
| RAL 6002S |
| RAL 6003G |
| RAL 6003M |
| RAL 6003S |
| RAL 6004G |
| RAL 6005G |
| RAL 6005M |
| RAL 6005S |
| RAL 6006G |
| RAL 6006M |
| RAL 6006S |
| RAL 6007G |
| RAL 6007M |
| RAL 6008G |
| RAL 6009G |
| RAL 6009M (KL004) |
| RAL 6009S |
| RAL 6009ST |
| RAL 6010G |
| RAL 6010M |

| |
|------------|
| RAL 7000G |
| RAL 7000M |
| RAL 7000S |
| RAL 6011G |
| RAL 6011M |
| RAL 6011S |
| RAL 6012G |
| RAL 6012M |
| RAL 6013G |
| RAL 6013M |
| RAL 6013S |
| RAL 6014G |
| RAL 6014M |
| RAL 6015G |
| RAL 6015M |
| RAL 6015S |
| RAL 6016G |
| RAL 6016M |
| RAL 6016S |
| RAL 6017G |
| RAL 6017M |
| RAL 6018G |
| RAL 6018M |
| RAL 6019G |
| RAL 6019M |
| RAL 6019S |
| RAL 6020G |
| RAL 6020M |
| RAL 6021G |
| RAL 6021M |
| RAL 6021S |
| RAL 6022G |
| RAL 6022M |
| RAL 6024G |
| RAL 6024M |
| RAL 6025G |
| RAL 6026G |
| RAL 6026M |
| RAL 6026S |
| RAL 6027G |
| RAL 6027M |
| RAL 6028G |
| RAL 6028M |
| RAL 6029G |
| RAL 6029M |
| RAL 6032G |
| RAL 6032M |
| RAL 6033G |
| RAL 6033M |
| RAL 6034G |
| RAL 6034M |
| RAL 6034S |
| RAL 6099ST |
| RAL 6999ST |

| |
|------------|
| RAL 7000ST |
| RAL 7001G |
| RAL 7001M |
| RAL 7001S |
| RAL 7002G |
| RAL 7002M |
| RAL 7002S |
| RAL 7003G |
| RAL 7003M |
| RAL 7003S |
| RAL 7004G |
| RAL 7004M |
| RAL 7004S |
| RAL 7005G |
| RAL 7005M |
| RAL 7005S |
| RAL 7006G |
| RAL 7006M |
| RAL 7006S |
| RAL 7009G |
| RAL 7009M |
| RAL 7010G |
| RAL 7010M |
| RAL 7010S |
| RAL 7011G |
| RAL 7011M |
| RAL 7011S |
| RAL 7012G |
| RAL 7012M |
| RAL 7012S |
| RAL 7013G |
| RAL 7013M |
| RAL 7015G |
| RAL 7015M |
| RAL 7015S |
| RAL 7016G |
| RAL 7016S |
| RAL 7016ST |
| RAL 7021G |
| RAL 7021M |
| RAL 7021S |
| RAL 7021ST |
| RAL 7022G |
| RAL 7022M |
| RAL 7022S |
| RAL 7023G |
| RAL 7023M |
| RAL 7023S |
| RAL 7024G |
| RAL 7024M |
| RAL 7024S |
| RAL 7026G |
| RAL 7026M |
| RAL 7026S |

| |
|------------|
| RAL 7030G |
| RAL 7030M |
| RAL 7030S |
| RAL 7031G |
| RAL 7031M |
| RAL 7031S |
| RAL 7032G |
| RAL 7032M |
| RAL 7032S |
| RAL 7033G |
| RAL 7033M |
| RAL 7033S |
| RAL 7034G |
| RAL 7034M |
| RAL 7034S |
| RAL 7034ST |
| RAL 7035G |
| RAL 7035M |
| RAL 7035S |
| RAL 7036G |
| RAL 7036M |
| RAL 7036S |
| RAL 7037G |
| RAL 7037M |
| RAL 7037S |
| RAL 7038G |
| RAL 7038M |
| RAL 7038S |
| RAL 7039G |
| RAL 7039M |
| RAL 7039S |
| RAL 7040G |
| RAL 7040M |
| RAL 7040S |
| RAL 7040ST |
| RAL 7042G |
| RAL 7042M |
| RAL 7042S |
| RAL 7043G |
| RAL 7043M |
| RAL 7043S |
| RAL 7044G |
| RAL 7044M |
| RAL 7044S |
| RAL 7045G |
| RAL 7045M |
| RAL 7045S |
| RAL 7046G |
| RAL 7046M |
| RAL 7046S |
| RAL 7047G |
| RAL 7047M |
| RAL 7047S |
| RAL 8000G |

Price on application for any colours/finishes not listed.

Note: Non-stock RAL colours are available on REAL Aluminium **standard** aluminium lead times.

Non-Stock RAL Colour Options

All colours listed here will incur a paint set up charge per colour.

| |
|-------------------|
| RAL 8001G |
| RAL 8001M |
| RAL 8001S |
| RAL 8002G |
| RAL 8002M |
| RAL 8003G |
| RAL 8003M |
| RAL 8003S |
| RAL 8004G |
| RAL 8004M |
| RAL 8004S |
| RAL 8007G |
| RAL 8007M |
| RAL 8008G |
| RAL 8008M |
| RAL 8009ST |
| RAL 8011G |
| RAL 8011M |
| RAL 8011S |
| RAL 8012G |
| RAL 8012M |
| RAL 8012S |
| RAL 8014G |
| RAL 8014M (KL006) |
| RAL 8014S |
| RAL 8014ST |
| RAL 8015G |
| RAL 8015M |
| RAL 8015S |
| RAL 8016G |
| RAL 8016M |
| RAL 8016S |
| RAL 8017G |
| RAL 8017M |
| RAL 8017S |
| RAL 8019G (KL007) |
| RAL 8019M |
| RAL 8019S |
| RAL 8019ST |
| RAL 8022G |
| RAL 8022M |
| RAL 8022S |
| RAL 8023G |
| RAL 8023M |
| RAL 8023S |
| RAL 8024G |
| RAL 8024M |
| RAL 8024S |
| RAL 8025G |
| RAL 8025M |
| RAL 8028G |
| RAL 8028M |
| RAL 8028S |
| RAL 8029G |

| |
|-------------------|
| RAL 8029M |
| RAL 8040G |
| RAL 8040M |
| RAL 8040S |
| RAL 8070G |
| RAL 8070M |
| RAL 8070S |
| RAL 8080M |
| RAL 8080S |
| RAL 8912G |
| RAL 8912S |
| RAL 9001G |
| RAL 9001M |
| RAL 9001S (KL011) |
| RAL 9001ST |
| RAL 9002G |
| RAL 9002M |
| RAL 9002S |
| RAL 9003G |
| RAL 9003M |
| RAL 9003S |
| RAL 9004G |
| RAL 9004M |
| RAL 9004S |
| RAL 9005S |
| RAL 9005ST |
| RAL 9006G |
| RAL 9006S |
| RAL 9006ST |
| RAL 9007G |
| RAL 9007ST |
| RAL 9008ST |
| RAL 9009ST |
| RAL 9010G |
| RAL 9010M (KL010) |
| RAL 9010S |
| RAL 9010ST |
| RAL 9011G |
| RAL 9011M |
| RAL 9011S |
| RAL 9016G |
| RAL 9016M |
| RAL 9016S |
| RAL 9016ST |
| RAL 9017G |
| RAL 9017M |
| RAL 9017S |
| RAL 9018G |
| RAL 9018M |
| RAL 9018S |
| RAL 9021S |
| RAL 9910G |
| RAL 9910M |
| RAL 9910S |

| |
|-----------|
| RAL 9911M |
| SA |
| SEN001 |
| SEN002 |
| SEN003 |
| SEN004 |
| SEN005 |
| SEN006 |
| SEN007 |
| SEN009 |
| SEN010 |
| SEN011 |
| SEN012 |
| SEN013 |
| SEN014 |
| SEN015 |
| SEN016 |
| SEN017 |
| SEN018 |
| SEN020 |
| SEN022 |
| SEN024 |
| SEN025 |
| SEN026 |
| SEN028 |
| SEN031 |
| SM286G |

| |
|-------------------------|
| RAL |
| KL |
| Sensations |
| M = Matt |
| S = Satin |
| ST = Stippolyte/Texture |
| G = Gloss |

Stock Colour Options

| |
|--|
| RAL 7016M (KL005) - Anthracite Grey (Matt) |
| RAL 9005M (KL008) - Black (Matt) |
| KL009 - White (Gloss) |
| RAL 7016M (KL005) on White (Gloss) (KL009) |

Price on application for any colours/finishes not listed.

Note: Non-stock RAL colours are available on REAL Aluminium **standard** aluminium lead times.

Part L and Part F Building Regulations

In the shift towards a Future Buildings Standard, the government has introduced a range of changes to the Building Regulations, including a mandatory 30 per cent cut in carbon for all new homes and a 27 per cent cut for other buildings, including offices and shops[†].

With the impact of climate change and the increase in urbanisation, we now not only need to ensure the homes of the UK are warm, energy efficient and provide exceptional thermal performance, but that they are also well ventilated for cleaner, cooler air.

Changes to Part L and Part F of the Building Regulations in England were introduced on the 15th June 2022, to ensure all new and renovation projects are on-spec for thermal efficiency, energy efficiency and ventilation capability.



What this means to you, the Installer

The information we have provided within this document will help you understand what is required to be compliant with the new Regulations.

Approved Document L and Approved Document F will outline the criteria required for domestic, non-domestic, new-build and renovation project buildings. Part L focuses on the energy efficiency levels and the thermal performance of the building, set to reduce the impact on fuel usage, whilst Part F focuses on the ventilation performance, which can be as simple as how many windows can open within a property, to minimising the ingress of external pollutants and the proper installation of ventilation systems. Therefore, when installing windows and doors, you will need to ensure they are approved to the new specifications.

Our products and systems are obviously key to the compliance of these new Regulations, so if you have any queries regarding design, our products, or even the Regulations themselves, our Customer Services, Sales or Technical Teams are always here to help and support you.

What we've done to meet the new Regulations

Conserving energy (PART L)

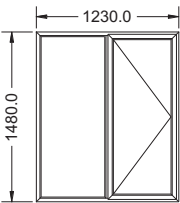
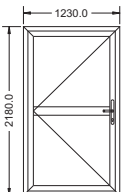
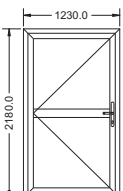
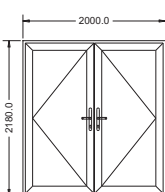
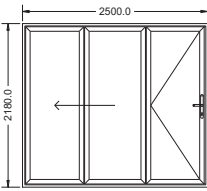
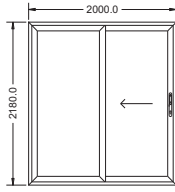
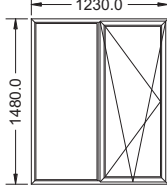
At REAL, we are proud to be a responsible manufacturer. That means we take changes in Regulations seriously – to ensure we're compliant, you're compliant and your customers enjoy products that meet the current standards. Our aluminium profiles are manufactured using the highest quality materials but it's important to understand how glazing can make a significant difference to how the completed window performs.

It's also worth noting that the new Part L Regulations for New Build properties focus on 'U' values, whilst Renovation Properties will be assessed on Energy Ratings or 'U' Values.

Our completed windows have achieved an 'A' Rating and 'U' Values that meet the standards. We have created the following tables to help you identify what's required to ensure your completed product is compliant.

Replacement on Existing Dwellings or Extensions

(Energy Ratings)

| REQUIREMENT | WINDOW/DOOR DESIGN | SYSTEM | DOUBLE GLAZED UNIT SPEC | ACTUAL RATING |
|---|---|---|--|---------------|
| B rated or Uw 1.4 W/m ² k |  | NEW PRODUCT Alitherm 400 Window (F) | 28mm unit clear/argon/softcoat 1.2 Centre pane 1.22 W/m ² k warm edge spacer | A |
| | | Alitherm Heritage 47 | 28mm unit clear/argon/softcoat 1.2 Centre pane 1.22 W/m ² k warm edge spacer | B |
| >60% glazed door C rated or Ud 1.4 W/m ² k |  | NEW PRODUCT Alitherm Heritage 60 | Double glazed 28mm unit clear/argon/softcoat 1 Centre pane 1.068W/m ² k Warm edge spacer | C |
| >60% glazed door Ud 1.6 W/m ² k minimum Ud 1.2 W/m ² k Target |  | NEW PRODUCT Heritage 60 | 36mm unit clear/softcoat /softcoat 1 Centre pane 0.7 W/m ² k Warm edge spacer | |
| C rated or Ud 1.4 W/m ² k |  | NEW PRODUCT Alitherm 400 French Door (F) | 28mm unit clear/argon/softcoat 1.2 Centre pane 1.22 W/m ² k warm edge spacer | C |
| C rated or Ud 1.4 W/m ² k |  | Visofold SLIM 1000 Bi-fold door | 28mm unit clear/argon/softcoat 1.2 Centre pane 1.22 W/m ² k warm edge spacer | C |
| C rated or Ud 1.4 W/m ² k |  | Visoglide Plus Sliding Door | 28mm unit clear/argon/softcoat 1.2 Centre pane 1.22 W/m ² k warm edge spacer | B |
| B rated or Uw 1.4 W/m ² k |  | Alitherm 400 TBT | 28mm unit clear/argon/softcoat 1.2 Centre pane 1.22 W/m ² k warm edge spacer | B |

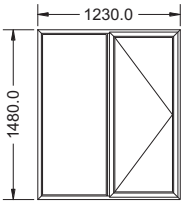
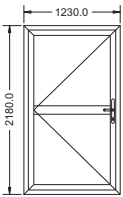
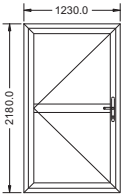
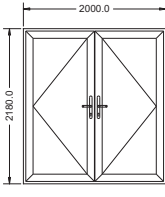
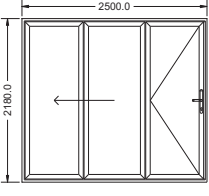
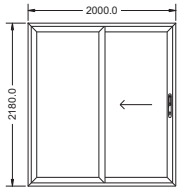
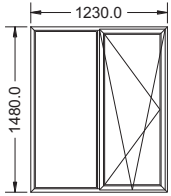
Band B achievable
with low iron glass

Band B achievable
with low iron glass

Glass type 1.2 -examples K glass S, Planitherm Total, Climaguard A+

Extensions U Values

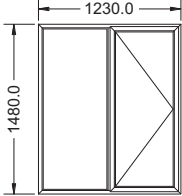
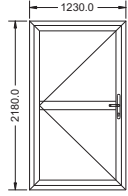
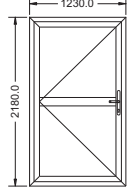
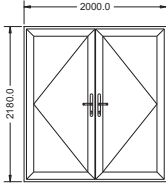
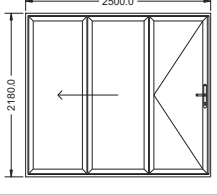
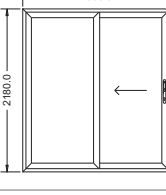
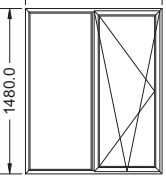
(Limiting U Value 1.4 W/m²k)

| REQUIREMENT | WINDOW/DOOR DESIGN | SYSTEM | GLAZED UNIT SPEC | ACTUAL UW/UD |
|---|---|---|---|------------------------|
| B rated or Uw 1.4W/m ² k |  | NEW PRODUCT Alitherm 400 Window (F) | Double glazed 28mm unit clear/argon/softcoat 1 Centre pane 1.068 W/m ² k warm edge spacer | 1.3 W/m ² K |
| | | Alitherm Heritage 47 | 28mm unit clear/argon/softcoat 1.2 Centre pane 1.22 W/m ² k warm edge spacer | |
| >60% glazed door C rated or Ud 1.4W/m ² k |  | NEW PRODUCT Alitherm Heritage 60 | Double glazed 28mm unit clear/argon/softcoat 1 Centre pane 1.068W/m ² k warm edge spacer | 1.3 W/m ² K |
| >60% glazed door Ud 1.6 W/m ² k minimum Ud 1.2 W/m ² k Target |  | NEW PRODUCT Heritage 60 | 36mm unit clear/softcoat /softcoat 1 Centre pane 0.7 W/m ² k Warm edge spacer | 1.2 W/m ² K |
| C rated or Ud 1.4W/m ² k |  | NEW PRODUCT Alitherm 400 French Door (F) | Double glazed 28mm unit clear/argon/softcoat 1 Centre pane 1.07W/m ² k warm edge spacer | 1.4 W/m ² K |
| C rated or Ud 1.4W/m ² k |  | Visofold Slim 1000 Bi-fold door | Triple glazed 44mm unit clear/softcoat 1.2/softcoat 1.2 Centre pane 0.65 W/m ² k warm edge spacer | 1.2 W/m ² K |
| C rated or Ud 1.4W/m ² k |  | Visoglide Plus Sliding Door (F) | Double glazed 28mm unit clear/argon/softcoat 1 Centre pane 1.07W/m ² k warm edge spacer | 1.4 W/m ² K |
| B rated or Uw 1.4W/m ² k |  | Alitherm 400 TBT | Double glazed 28mm unit clear/argon/softcoat 1 Centre pane 1.068W/m ² k warm edge spacer | 1.4 W/m ² K |

Glass type 1.2 -examples K glass S, Planitherm Total, Climaguard A+, Glass type 1 -examples Pilkington S1, Planitherm one, Climaguard 1

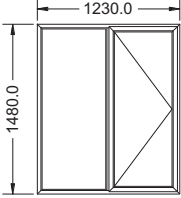
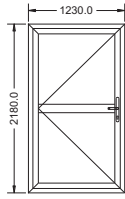
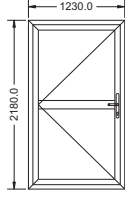
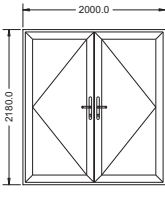
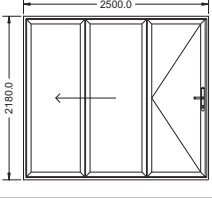
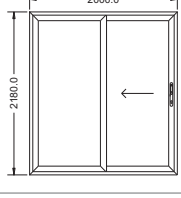
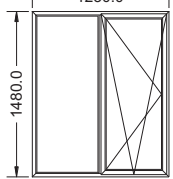
New Build U Values with Double Glazing

(Limiting U Value 1.6 W/m²k)

| REQUIREMENT | WINDOW/DOOR DESIGN | SYSTEM | DOUBLE GLAZED UNIT SPEC | ACTUAL UW/UD |
|---|---|---|---|------------------------|
| Uw 1.6 W/m ² k minimum Uw 1.2 W/m ² k Target |  | NEW PRODUCT Alitherm 400 Window (F) | 28mm unit clear/argon/softcoat 1 Centre pane 1.068 W/m ² k warm edge spacer | 1.4 W/m ² K |
| | | NEW PRODUCT Alitherm Heritage | 28mm unit clear/argon/softcoat 1 Centre pane 1.068 W/m ² k warm edge spacer | 1.4 W/m ² K |
| >60% glazed door Ud 1.6 W/m ² k minimum Ud 1.2 W/m ² k Target |  | NEW PRODUCT Alitherm 400 Resi Door (F) | 40mm unit clear/softcoat /softcoat Centre pane 0.72 W/m ² k warm edge spacer | 1.1 W/m ² K |
| >60% glazed door Ud 1.6 W/m ² k minimum Ud 1.2 W/m ² k Target |  | NEW PRODUCT Heritage 60 | 36mm unit clear/softcoat /softcoat 1 Centre pane 0.7 W/m ² k Warm edge spacer | 1.2 W/m ² K |
| Ud 1.6 W/m ² k minimum Ud 1.2 W/m ² k Target |  | NEW PRODUCT Alitherm 400 French Door (F) | 28mm unit clear/argon/softcoat 1 Centre pane 1.068 W/m ² k warm edge spacer | 1.4 W/m ² K |
| Ud 1.6 W/m ² k minimum Ud 1.2 W/m ² k Target |  | Visofold Slim 1000 Bi-fold door | 28mm unit clear/argon/softcoat 1 Centre pane 1.068 W/m ² k warm edge spacer | 1.6 W/m ² K |
| Ud 1.6 W/m ² k minimum Ud 1.2 W/m ² k Target |  | Visoglide Plus Sliding Door (F) | 28mm unit clear/argon/softcoat 1 Centre pane 1.068 W/m ² k warm edge spacer | 1.4 W/m ² K |
| Uw 1.6 W/m ² k minimum Uw 1.2 W/m ² k Target |  | Alitherm 400 TBT | 28mm unit clear/argon/softcoat 1 Centre pane 1.068 W/m ² k warm edge spacer | 1.4 W/m ² K |

New Build U Values with Triple Glazing Notional Method

(Target U Value 1.2 W/m²k)

| REQUIREMENT | WINDOW/DOOR DESIGN | SYSTEM | TRIPLE GLAZED UNIT SPEC | ACTUAL UW/UD |
|---|---|---|---|------------------------|
| Uw 1.6 W/m ² k minimum Uw 1.2 W/m ² k Target |  | NEW PRODUCT Alitherm 400 | 40mm unit clear/softcoat 1/softcoat Centre pane 0.72 W/m ² k warm edge spacer | 1.1 W/m ² K |
| | | NEW PRODUCT Alitherm Heritage | 40mm unit clear/softcoat 1/softcoat Centre pane 0.72 W/m ² k warm edge spacer | 1.1 W/m ² K |
| >60% glazed door Ud 1.6 W/m ² k minimum Ud 1.2 W/m ² k Target |  | NEW PRODUCT Alitherm 400 Resi Door (F) | 40mm unit clear/softcoat /softcoat Centre pane 0.72 W/m ² k warm edge spacer | 1.1 W/m ² K |
| >60% glazed door Ud 1.6 W/m ² k minimum Ud 1.2 W/m ² k Target |  | NEW PRODUCT Heritage 60 | 36mm unit clear/softcoat /softcoat 1 Centre pane 0.7 W/m ² k Warm edge spacer | 1.2 W/m ² K |
| Ud 1.6 W/m ² k minimum Ud 1.2 W/m ² k Target |  | NEW PRODUCT Alitherm 400 French Door (F) | 40mm unit clear/softcoat /softcoat Centre pane 0.72 W/m ² k warm edge spacer | 1.1 W/m ² K |
| Ud 1.6 W/m ² k minimum Ud 1.2 W/m ² k Target |  | Visofold Slim 1000 Bi-fold door NEW BEAD | 44mm unit clear/softcoat /softcoat Centre pane 0.65 W/m ² k warm edge spacer | 1.2 W/m ² K |
| Ud 1.6 W/m ² k minimum Ud 1.2 W/m ² k Target |  | Visoglide Plus Sliding Door (F) | 36mm unit clear/softcoat /softcoat Centre pane 0.81 W/m ² k warm edge spacer | 1.2 W/m ² K |
| Uw 1.6 W/m ² k minimum Uw 1.2 W/m ² k Target |  | Alitherm 400 TBT | 36mm unit clear/softcoat 1/softcoat Centre pane 0.81 W/m ² k warm edge spacer | 1.2 W/m ² K |

AD L: Energy Efficiency - New Dwellings

The Notional dwelling Target 'U' Values for Windows and Doors are laid out in Table 1.1 of the Approved Document L.

The notional method enables Architects to trade off 'U' values against other materials in the dwelling as long as they are within the limiting 'U' values.

Table 1.1 from Doc L

| DESCRIPTION | TARGET 'U' VALUE |
|---|------------------------|
| Windows | 1.2 W/m ² K |
| Doors with glazed area greater than 60% | 1.2 W/m ² K |
| Other doors | 1.0 W/m ² K |

Table 4.1 from Doc L

| DESCRIPTION | LIMITING 'U' VALUE |
|-------------|------------------------|
| Windows | 1.6 W/m ² K |
| Doors | 1.6 W/m ² K |

The lowest specification 'U' Value allowable referred to as the Limiting 'U' Values are shown in Table 4.1.

AD L: ENERGY EFFICIENCY - EXISTING DWELLINGS

'U' Values, Window Energy Ratings (WER) and Doorset Energy Ratings (DSER) of replacement windows and doors must be both:

- No worse than that of the element being replaced
- Meet the limiting standards in Table 4.2 (Lowest specification of 'U' Value or WER/DSER allowable)

Table 4.2 from Doc L

| DESCRIPTION | 'U' VALUE | WER/DSER |
|---|------------------------|----------|
| Windows | 1.4 W/m ² K | B |
| Doors with glazed area greater than 60% | 1.4 W/m ² K | C |
| Other doors | 1.4 W/m ² K | B |

'U' Values, Any windows and doors replaced will need to be at least the level of performance detailed in Table 4.2 above.

Fresher, Cleaner Indoor Air (PART F)

TTF SLIMLINE

- Independently tested to BS EN 13141-1:2019
- Water tightness of 400pa
- Independently acoustically tested in accordance with BS EN 20140-10:1992, ISO 140-10:1991.
- Tested in accordance with BS EN 1026:2016 & BS EN 1027: 2016 Weather performance

BIFOLD FLUSH-FITTING SASH TRICKLE VENT

- Stats needed

AD F: VENTILATION - NEW DWELLINGS

Table 1.7 from Doc F

| ROOM TYPE | MINIMUM EQUIVALENT AREA OF BACKGROUND VENTILATORS FOR DWELLINGS WITH MULTIPLE FLOORS | MINIMUM EQUIVALENT AREA OF BACKGROUND VENTILATORS FOR SINGLE STORY DWELLINGS |
|---------------------------------|--|--|
| Habitable Room (see note 2 & 3) | 8,000mm ² | 10,000mm ² |
| Kitchen (see note 2 & 3) | 8,000mm ² | 10,000mm ² |
| Utility Room | NO MINIMUM | NO MINIMUM |
| Bathroom (see note 4) | 4,000mm ² | 4,000mm ² |
| Sanitary Accommodation | NO MINIMUM | NO MINIMUM |

The use of this table is not appropriate in the following situations or conditions and expert advice must be sought.

- If the dwelling has only one exposed facade (e.g. within a multi-storey building).
- If the dwelling has 70% of its openings on the same facade.
- If a kitchen has no windows or external facade where a ventilator could be installed.
- Where a kitchen and living room accommodation are not separate rooms (i.e. open plan), no fewer than three ventilators of the same equivalent area as for other

habitable rooms should be provided within the open plan space (8,000mm²).

- The total number of ventilators installed in the dwelling's habitable rooms and kitchen/s should be no fewer than five, except in one bedroom properties where there should be no fewer than four.
- If a bathroom has no window or external facade through which a ventilator can be installed, the minimum equivalent area specified should be added to the ventilator sizes specified in nearest adjoining rooms. (i.e. 8,000mm² increased to 12,000mm² and 10,000mm² increased to 14,000mm²).

AD F: VENTILATION - REPLACEMENT WINDOWS

If the existing windows have background ventilators, the replacement windows should have background ventilators that are:-

- No smaller than the background ventilators in the original windows.
- Be controllable either automatically or by the occupant.

If the existing windows do not have background ventilators and there is no mechanical ventilation with a heat recovery system, it is necessary to ensure that the ventilation provision in the dwelling is no worse than it was before the work was carried out.

This may be demonstrated in any of the following ways:-

- Incorporating background ventilators in the replacement windows equivalent to column one in the above table 1.7.
- If there is a continuous mechanical extract ventilation, replacement windows in habitable rooms which are not wet rooms must have a minimum background ventilation area of 4,000mm².
- Other ventilation provisions, if it can be demonstrated to a building control body that they comply.

Note: If it is not technically feasible to adopt the minimum equivalent areas set out in the above table 1.7, the background ventilators should have equivalent areas as close to the minimum value as is feasible.

Building Regulation Compliance, Window Energy Ratings (WER) and Doorset Energy Ratings (DSER)

Compliance with current Building Regulations is a vital part of every installation and can sometimes be complex.

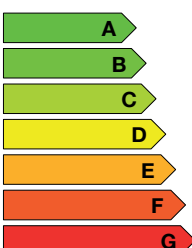
Using REAL Aluminium, meeting the requirements of Part L of current UK Building Regulations, is easy as the entire range is compliant using energy ratings for renovations to existing properties when installed with a double-glazed unit with a U Value of 1.2 W/m²K and a solar gain of 0.71

or better that is manufactured using an Edgetech Super Spacer Bar or equivalent. All REAL Casement Windows achieve an 'A'-rating if the aforementioned glass unit is upgraded to low-iron glass.

The thermal efficiency of the REAL Aluminium range can be enhanced further by using higher-performance double-glazed or triple-glazed units.

REAL Aluminium WER, DSER & U Values

WER: Window Energy Performance Certificate
WER Window Energy Rating - In accordance with Approved Document L



A

Company
Customade/REAL

Project
REAL Alitherm 400i Window

Date
14 Jul 2022

BFR System
SC010

BFR Manufacturer
**M117
M117**

BFR Simplified Energy Licence
SEL

| | | |
|-------------------------------|---|-----------------------------------|
| WER: | Window Energy Rating: 196.74((1-f)xgglass) - 68.5 x (U + (0.0165 xAL)) | 3.2 kWh/m²/Year |
| Thermal Transmittance: | WER U Value of window calculated using the methods and conventions set out in BR443 Whole window U Value with frame, glazing and glass spacer bar combined. Standard window configuration set out by BR443/GGF 2.3 U Window: 0.496+0.919+0.143 | |
| Frame: | Supplier: Smart Architectural Aluminium System: Alitherm 400 KB Outer Frame: ETC4110F (1.556) Vent Frame: ETC4129F (2.218) Transom Mullion: ETC4130F (2.112) Heat Transfer: 2.024 W/m ² K x (24.5% Frame) | 0.496 W/m²K |
| Glazing: | Supplier: Glass Systems Specification: 4/20/4 Clear Softcoat Low Iron 1.2 CPV Centre Pane, g Value: 1.217 W/m ² K, 0.74 Heat Transfer: 1.217 W/m ² K x (75.5% Glass) | 0.919 W/m²K |
| Spacer: | Supplier: Edgetech Spacer Bar: Super Spacer Premium Heat Transfer: 0.035 W/m ² K x (4.092m/m ²) | 0.143 W/m²K |
| U Value: | Window U Value: Calculation to BR443/GGF 2.3 | 1.6 W/m²K |

Calculated in accordance with UK Building Regulations Document L and BR443
BS EN ISO 10077-2, Thermal performance of windows, doors and shutters.
Calculation of thermal transmittance, Part 2, Numerical method for frames

Version 6.0 (0327)

U Value: Certificate
Window U Value - In accordance with Approved Document L

U Value

1.2 W/m²K

Company
Customade/REAL

Project
REAL System 1 - Triple glazed window

Date
14 Jul 2022

BFR System
SC010

BFR Manufacturer
**M117
M117**

BFR Simplified Energy Licence
SEL3310

| | | |
|-------------------------------|---|-------------------------------------|
| WER: | Window Energy Rating: 196.74((1-f)xgglass) - 68.5 x (U + (0.0165 xAL)) | -18.4 kWh/m²/Year |
| Thermal Transmittance: | WER U Value of window calculated using the methods and conventions set out in BR443 Whole window U Value with frame, glazing and glass spacer bar combined. Standard window configuration set out by BR443/GGF 2.3 U Window: 0.566+0.531+0.125 | |
| Frame: | Supplier: Smart Architectural Aluminium System: Alitherm 300 Outer Frame: *ZSB169FF (1.915) Vent Frame: ETC424N (2.947) Transom Mullion: ETC333 (3.104) Heat Transfer: 2.699 W/m ² K x (21.0% Frame) | 0.566 W/m²K |
| Glazing: | Supplier: Glass Systems Specification: 4/12/4/12/4 clear/softcoat 1/softcoat 1 0.7 CPV Centre Pane, g Value: 0.672 W/m ² K, 0.42 Heat Transfer: 0.672 W/m ² K x (79.0% Glass) | 0.531 W/m²K |
| Spacer: | Supplier: Edgetech Spacer Bar: Super Spacer Premium Heat Transfer: 0.030 W/m ² K x (4.165m/m ²) | 0.125 W/m²K |
| U Value: | Window U Value: Calculation to BR443/GGF 2.3 | 1.2 W/m²K |

Calculated in accordance with UK Building Regulations Document L and BR443
BS EN ISO 10077-2, Thermal performance of windows, doors and shutters.
Calculation of thermal transmittance, Part 2, Numerical method for frames

Version 6.0 (0323)



Note:

All REAL Aluminium products when used in conjunction with the glass specifications on pages 8,9,10 and 11 satisfy current Building Regulations Part L for refurbishment and new-build applications.

The addition of low-iron glass will not improve U Values but will improve WER/DSER rating due to solar gain.

The addition of triple glazing will improve U Values but due to reduced solar gain has limited effect on WER/DSER ratings.

Product Specifications

SPECIFICATION REAL SYSTEM 1 & 2

| System | Modified 70mm Alitherm 300 |
|-------------------|--|
| Finish | Polyester powder coated |
| WER | up to A-rating using suitable double-glazed unit |
| U Value | up to 1.2 w/m ² k using suitable triple-glazed unit |
| Locking system | Espag locking |
| Frame depth | 70mm |
| Typical sightline | 67mm |
| SH Max o/a width | 700mm |
| SH Max o/a height | 1400mm |
| TH Max o/a width | 1400mm |
| TH Max o/a height | 1300mm |
| Glazing | 28mm double-glazed or 36mm triple-glazed |

SPECIFICATION VISOGLIDE PLUS

| System | Visoglide Plus |
|-----------------|--|
| Finish | Polyester powder coated |
| U Value | up to 1.3 w/m ² k using a suitable triple-glazed unit |
| Security | Multi-point locking plus individual keeps |
| Frame depth | 99mm or 126mm double track 165.5mm or 182.5mm triple track |
| Max sash weight | 200kg |
| Max sash height | 2500mm |
| Max sash width | Within above limitations |
| Glazing | 28mm double-glazed or 36mm triple-glazed |
| Track | Double or triple dependent on configuration |

SPECIFICATION ALITHERM 400 WINDOW

| System | Alitherm 400* |
|--------------------|---|
| Finish | Polyester powder organic coating to BS6496 |
| WER | down to A+ rating using suitable double glazed unit |
| U Value | down to 1.1 w/m ² k with triple-glazing |
| Handles | Espag locking handles by ERA |
| Frame depth | 70mm |
| Typical sight line | 71.5mm |
| SH Max o/a width | 864mm |
| SH Max o/a height | 1400mm |
| TH Max o/a width | 1400mm |
| TH Max o/a height | 1500mm |
| Glazing | 28mm double glazed or 40mm triple glazed |

*Externally glazed and triple glazed windows require wedge gasketing.

SPECIFICATION ALITHERM 400 DOOR

| System | Alitherm 400 |
|------------|--|
| U Value | up to 1.1 w/m ² k using a suitable triple-glazed unit |
| Security | Multi-point locking & 3 star cylinder |
| Max height | 2400mm |
| Max width | 1100mm |
| Max weight | 100kg |
| Glazing | 28mm double-glazed or 40mm triple-glazed |

SPECIFICATION VISOFOLD 1000 SLIM

| System | Visofold 1000 Slim Quick-Glaze Tap In Bead |
|---------------------------|--|
| Finish | Polyester powder coated |
| U Value | up to 1.2 w/m ² k using suitable triple-glazed unit |
| Security tested | PAS 24: 2016 enhanced security-rated doors on a three-pane open-out door |
| Weather tested | BS 6375 Part 1: 2009 |
| Security | Multi-point locking with shootbolt |
| Frame depth | 70mm |
| Typical sight line | 122mm |
| Max sash weight | 100kg |
| Max o/a height (per sash) | 2500mm |
| Max o/a width (per sash) | 1200mm* |
| Glazing | 28mm double-glazed or 44mm triple-glazed |

*Triple glazed doors require wedge gasketing.

Contact Us

Phone: 01642 309576

Email: enquiries@gfdhomes.co.uk

Website: www.gfdhomes.co.uk

