TECHNICAL GUIDE



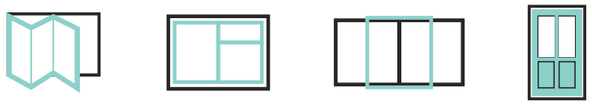
gfdhomes
the home improvement group

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.



Part of the Customade Group

CASEMENT WINDOW

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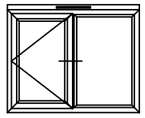
Product Specifications **Page 43**

Casement Window Assembly Drawings

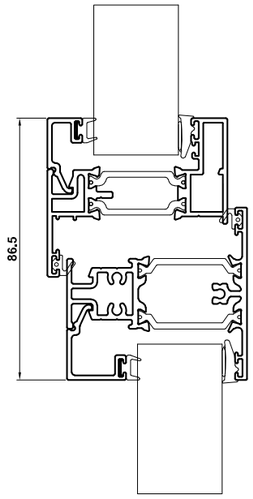
Alitherm 400x

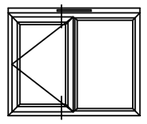
Contemporary Frame | Externally Glazed | Flat Sash

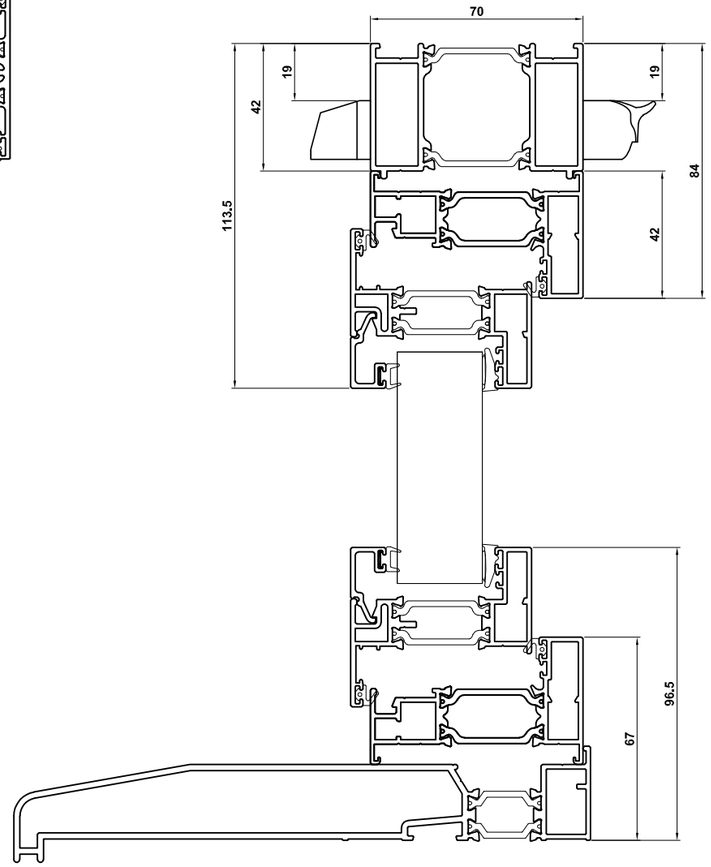
Note: Wedge gasket is standard on externally glazed windows



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





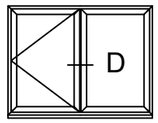


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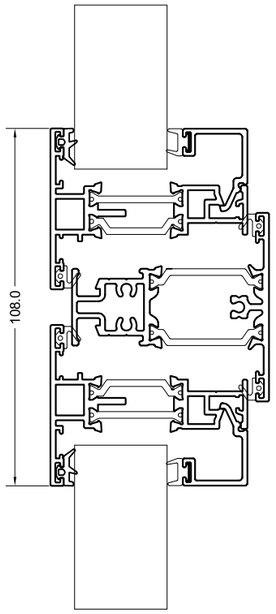
Casement Window Assembly Drawings

Alitherm 400i Quick-Glaze System

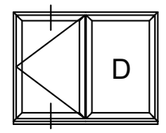
Contemporary Frame | Internally Glazed | Flat Sash | Quickglaze Bead

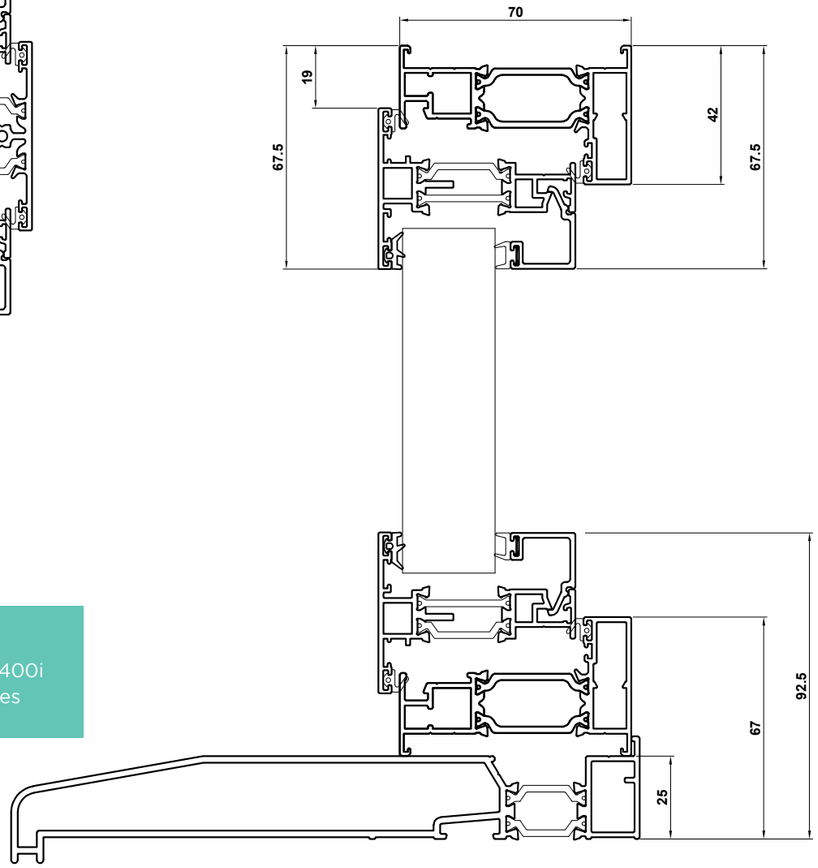


ETC4110 - Outer Frame
ETC4124 - Slim T-Sash
ETC4130 - T-Transom/Mullion
UN3160G - 28mm Glazing
ETC458 - 190mm Sill



Note:
Fixed panes on Alitherm 400i always have dummy sashes

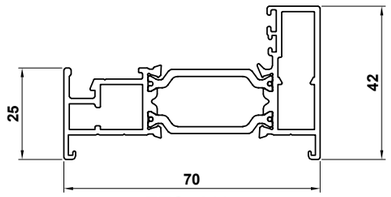




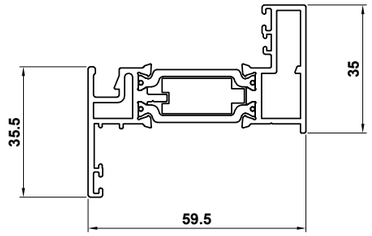
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Casement Window
Main Profile

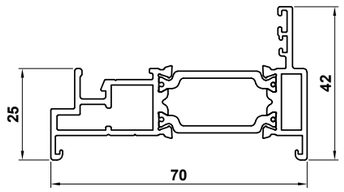
Alitherm 400 Window Systems i and x



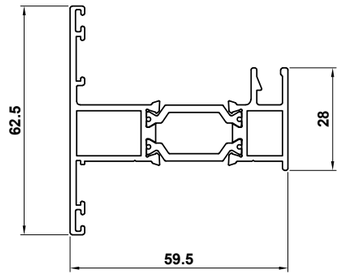
ETC4110
Square Outer Frame



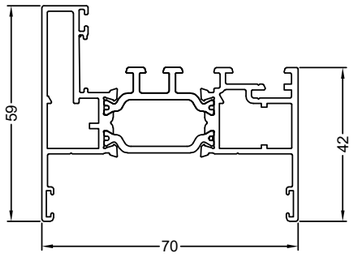
ETC4120
Externally Beaded Z Sash
(Crimp Only)



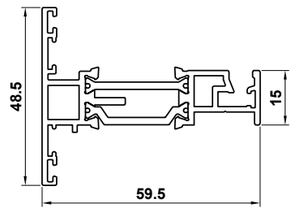
ETC4115
Flush sash outer frame



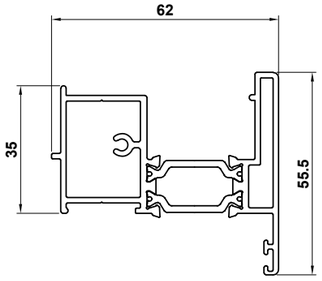
ETC4129
Internally Bead T Sash



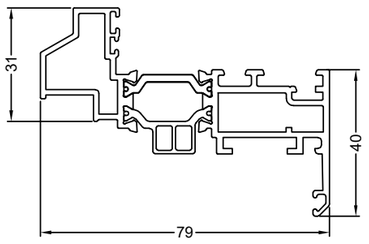
ETC4014
Tilt & Turn Outer Frame



ETC4124
Internally Bead Slim T Sash



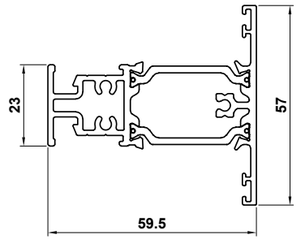
ETC4138
French Casement Mullion



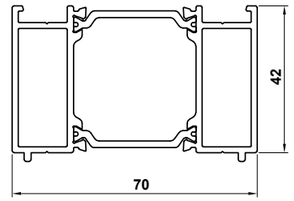
ETC4021
Tilt & Turn Sash

Casement Window
Main Profile

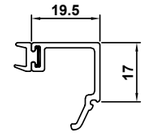
Alitherm 400 Window Systems i and x



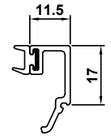
ETC4130
Transom/Mullion



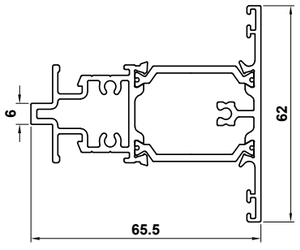
UN3042
70mm x 42mm Head Extension



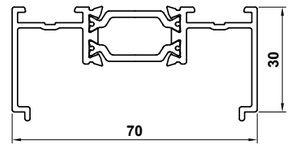
UN3160G
28mm Glazing Bead
with Gasket



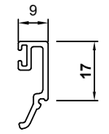
ETC4179G
28mm Glazing Z sash
Bead



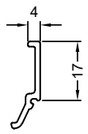
ETC4135
Flush sash Transom / Mullion



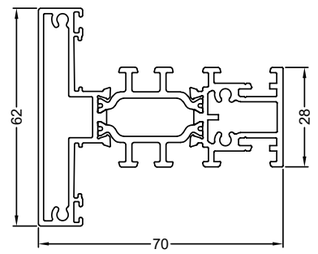
UN3370
70mm x 30mm Frame Extension



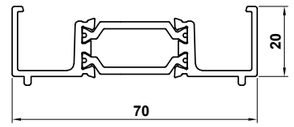
UN3166
40mm Glazing Bead



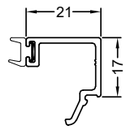
UN3168
44mm Glazing Bead



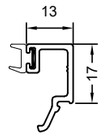
ETC4031
Tilt & Turn T-transom / mullion



UN3020
70mm x 20mm Frame Extension



ETC4067G
Tilt & Turn
28mm Glazing Bead



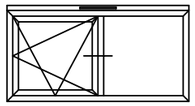
ETC4061G
Tilt & Turn
36mm Glazing Bead

Tilt and Turn Window Assembly Drawings

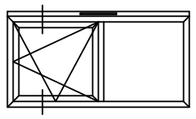
Alitherm 400

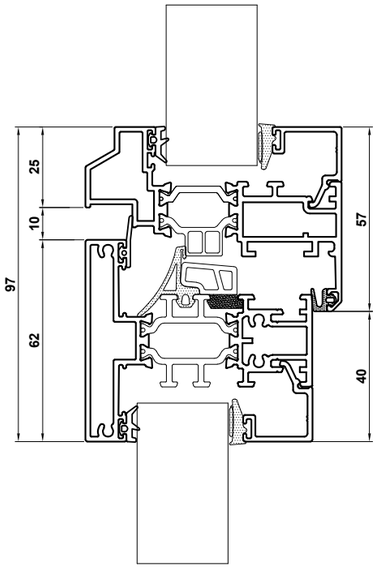
Contemporary Frame | Internally Glazed | Featured Sash

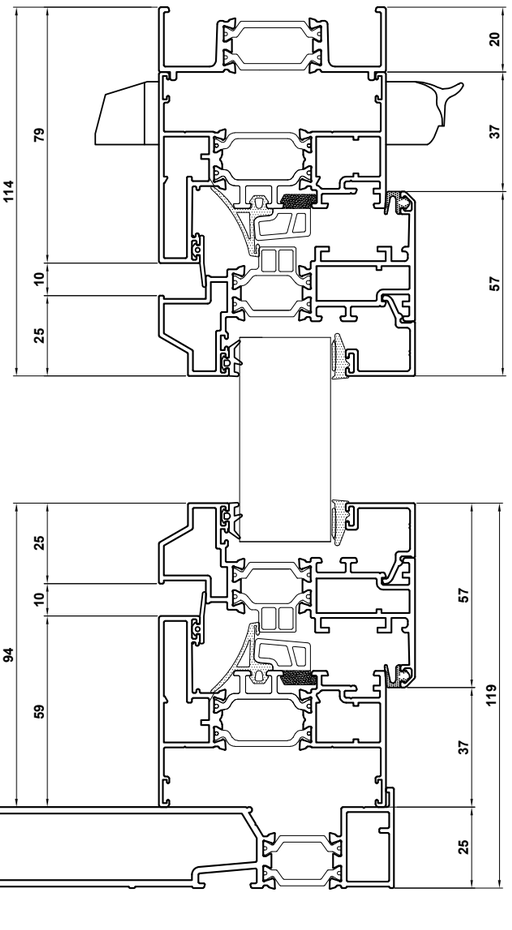
Note: Wedge gasket is standard on internally glazed windows



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





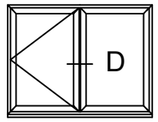


Flush Sash Window Assembly Drawings

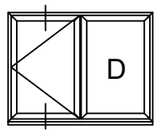
Alitherm 400

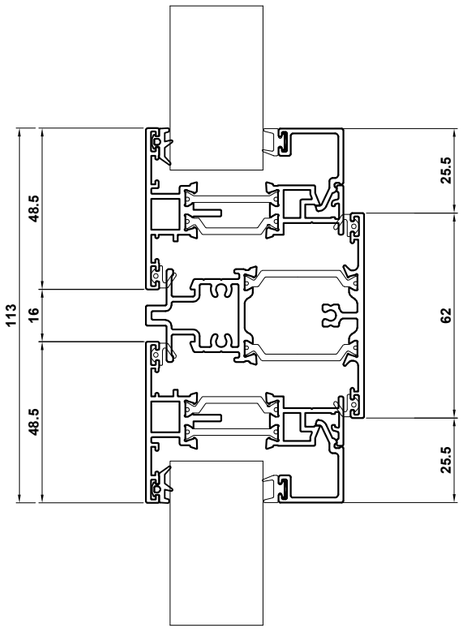
Contemporary Frame | Internally Glazed | Flat Sash

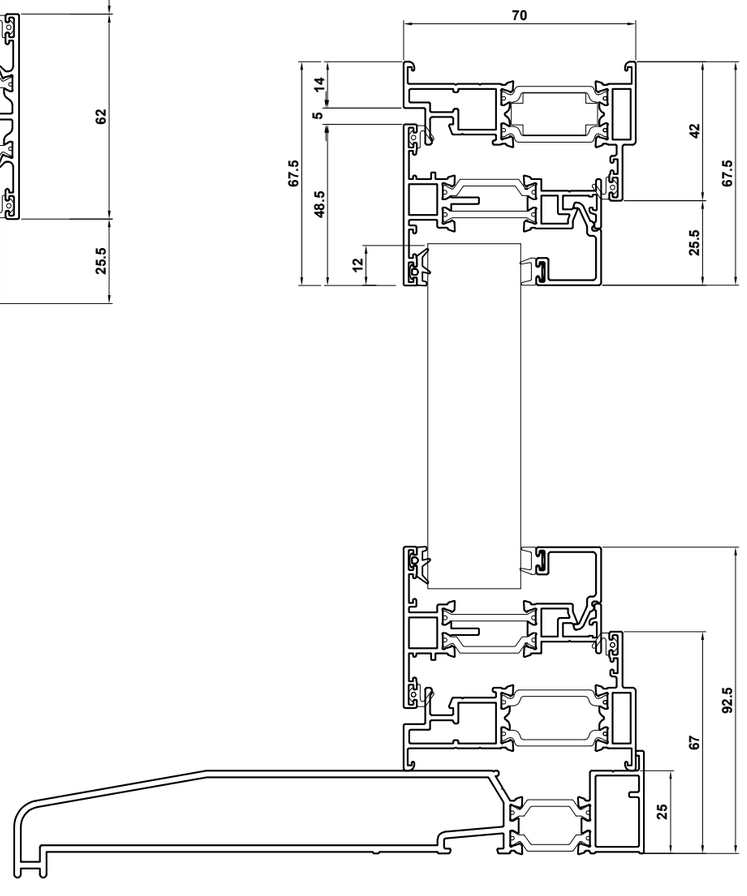
Note: Wedge gasket is standard on internally glazed windows



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

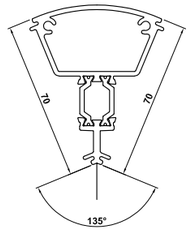






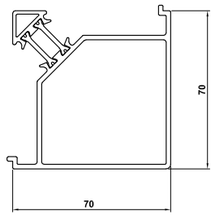
Casement Window Ancillaries

Alitherm 400 Window Systems i and x

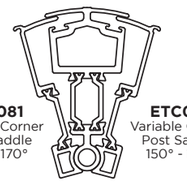


UN3011
135° Corner Post

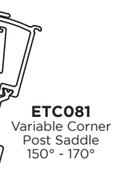
Note:
All posts are not structural or load bearing.



UN3010
70mm Corner Post

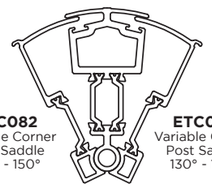


ETC081
Variable Corner Post Saddle 150° - 170°



ETC081
Variable Corner Post Saddle 150° - 170°

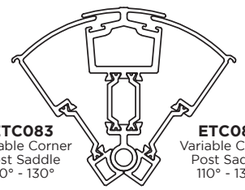
ETC080
Variable Corner Post Centre



ETC082
Variable Corner Post Saddle 130° - 150°

ETC082
Variable Corner Post Saddle 130° - 150°

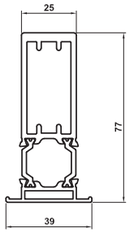
ETC080
Variable Corner Post Centre



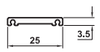
ETC083
Variable Corner Post Saddle 110° - 130°

ETC083
Variable Corner Post Saddle 110° - 130°

ETC080
Variable Corner Post Centre

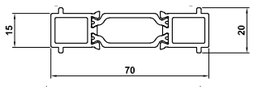


ETC517
Coupler

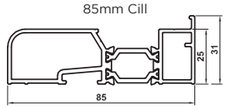


W20165
Astragal Bar

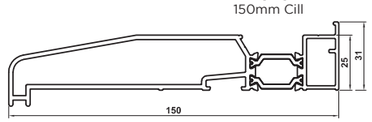
UN3015
Flush Coupler



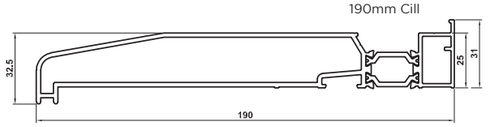
ETC451
85mm Cill



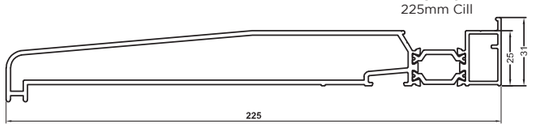
ETC457
150mm Cill



ETC458
190mm Cill

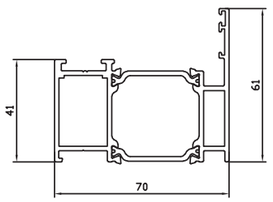


ETC479N
225mm Cill

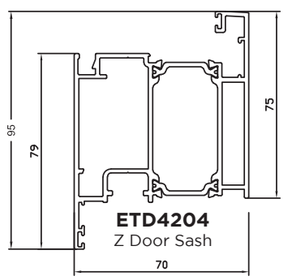


Residential or French Door Main Profiles

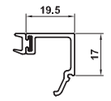
Alitherm 400 Door System



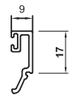
ETD410
Outer Frame



ETD4204
Z Door Sash

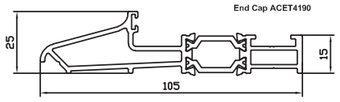


UN3160G
28mm Glazing Bead with Gasket

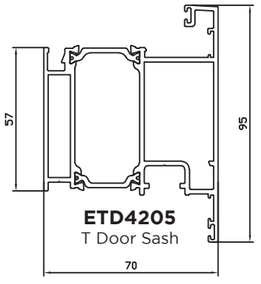


UN3166
40mm Glazing Bead

End Cap ACET4190



ETD490
Low Threshold Open In



ETD4205
T Door Sash

End Cap ACET4197

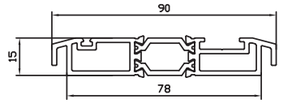


UL297
Sash Adaptor in Conjunction with ETD490 and ETD492 Low Threshold

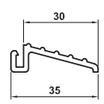


VL72
Weather Drip

End Cap ACVL059
Rivet: ACVL061

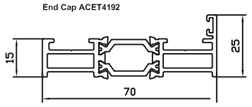


ETD495
Low Threshold Ramp

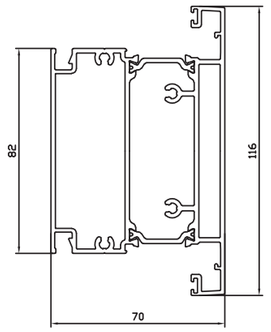


EUD03
Low Threshold Ramp

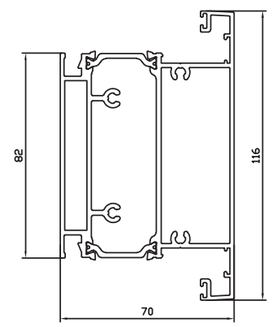
End Cap ACET4192



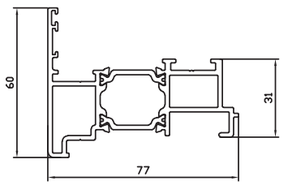
ETD492
Open Out Low Threshold



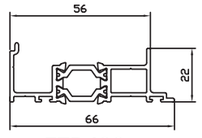
ETD 4301
Midrail for ETD4204



ETD 4302
Midrail for ETD4205



ETD447
Dummy Mullion



ETD496
Adaptor for Ramp Threshold



PCX15
Clip on for Sash



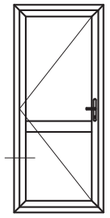
PCX47
Clip on for Thresholds

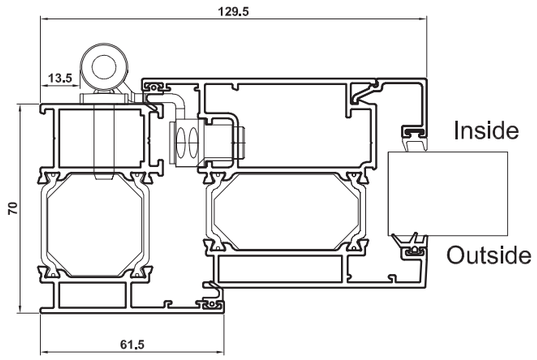
End Cap ACET4142 used with ETD495
ACE4146 used with ETC490 AND ETD492
ACE4147 used with ETD410

Residential or French Door Assembly Drawings

Alitherm 400 Quick-Glaze System

Resi Door | Open In | Internally Glazed

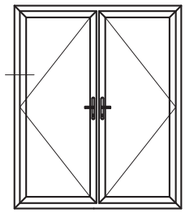




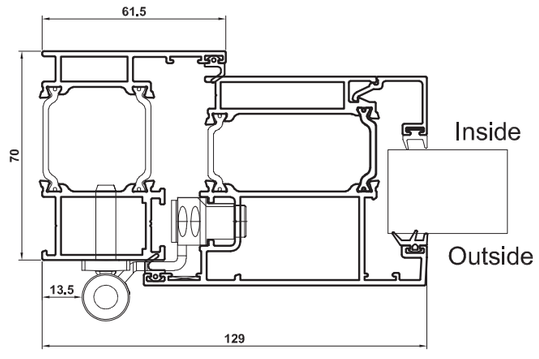
ETD410 - Outer Frame
ETD4204 - Z-Sash
UN3160G - 28mm Glazing

Alitherm 400 Quick-Glaze System

French Door | Open Out | Internally Glazed



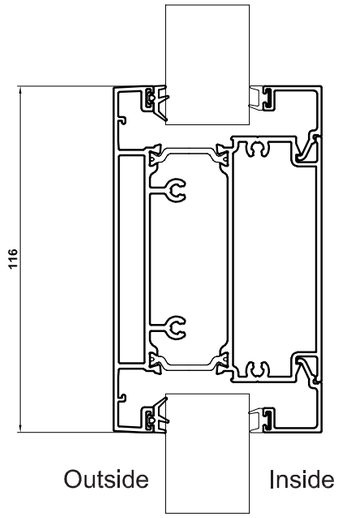
ETD410 - Outer Frame
ETD4205 - T-Sash
UN3160G - 28mm Glazing

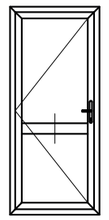


Residential or French Door Assembly Drawings

Alitherm 400 Quick-Glaze System

Resi Door | Open In | Internally Glazed | Midrail

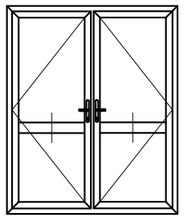




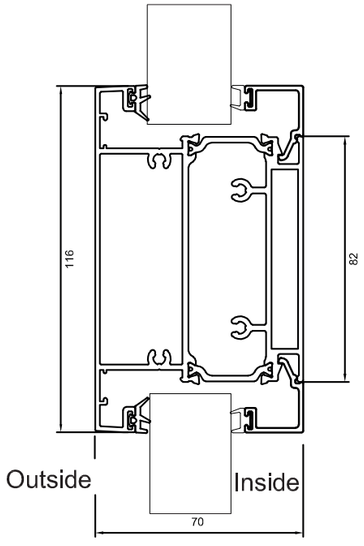
ETD4301 - Midrail
UN3160G - 28mm Glazing

Alitherm 400 Quick-Glaze System

French Door | Open Out | Internally Glazed



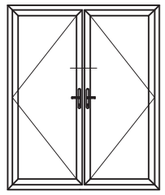
ETD4302 - Midrail
UN3160G - 28mm Glazing

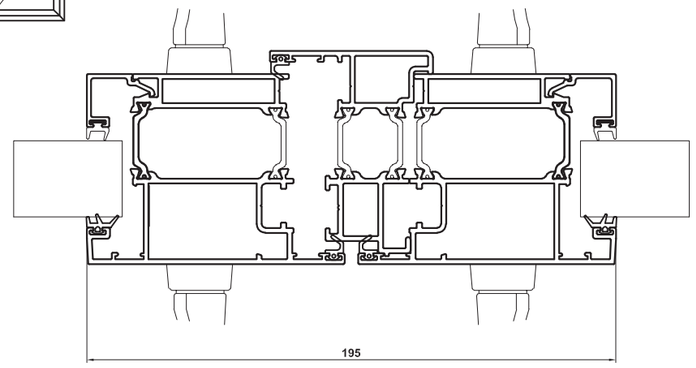


Residential or French Door Assembly Drawings

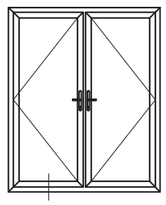
Alitherm 400 Quick-Glaze System

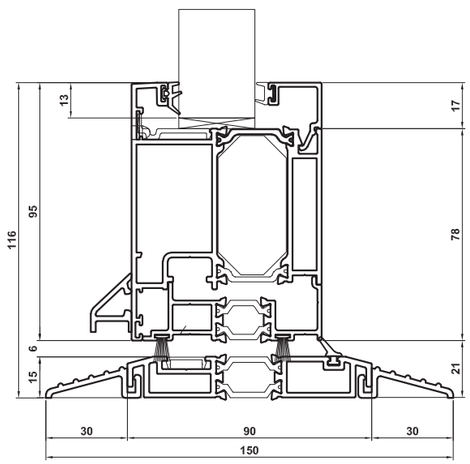
French Door | Open Out | Internally Glazed





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



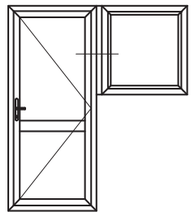


ETD4205 - T-Sash
UN3160G - 28mm Glazing
ETD495 - Low Threshold
ETD496 - Adaptor for Ramp Threshold
EUD03 - Low Threshold Ramp

Residential or French Door Assembly Drawings

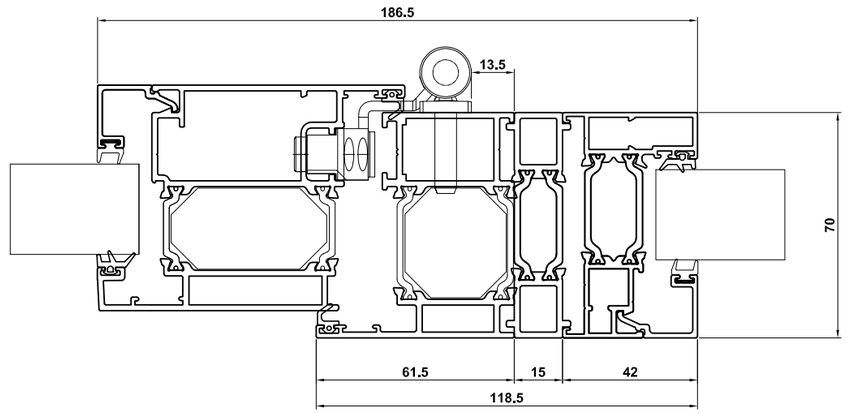
Alitherm 400

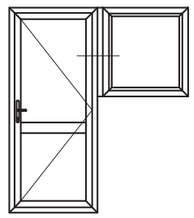
Couplers



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

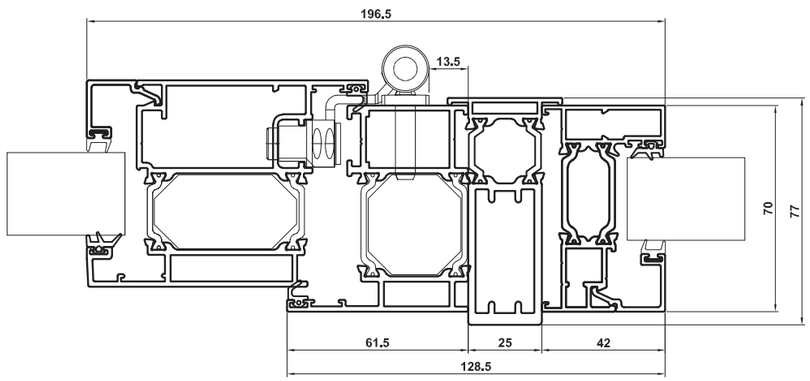
Flush Coupler



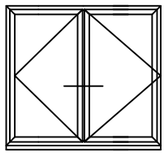


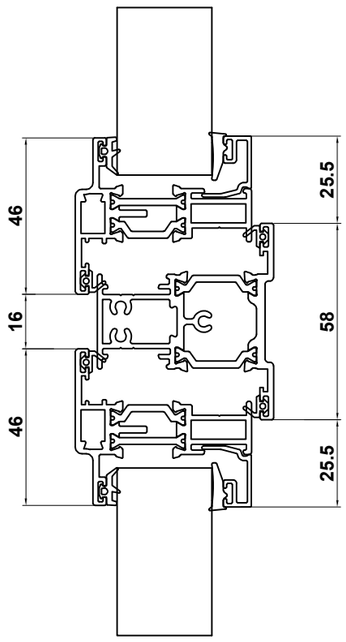
ETD410 - Outer Frame
ETD4204 - Z Sash
UN3160G - 28mm Glazing
ETC517 - 25mm Heavy Duty Coupler
ETC4110 - Outer Frame

Heavy Duty 25mm Coupler

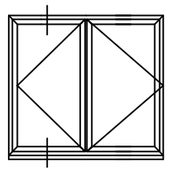


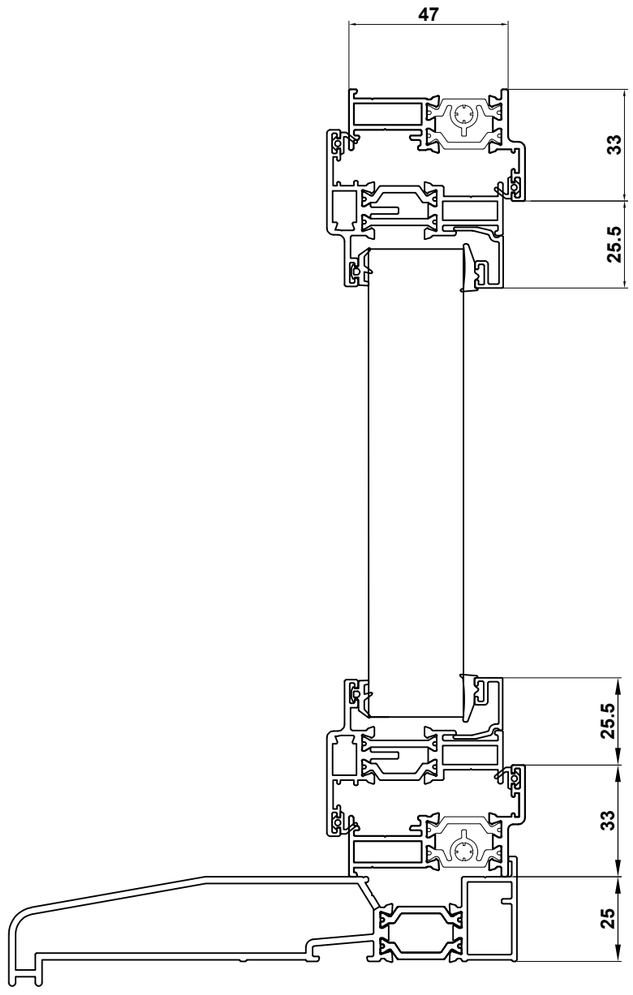
Heritage Windows
Assembly Drawings



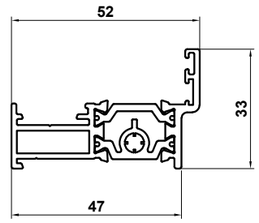


W20015 - Outer Frame
W20025 - Sash
W20171N - 28mm Glazing Bead
ETC457 - 150mm Sill

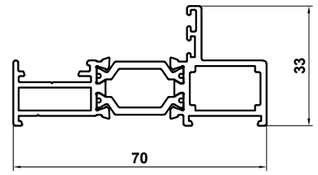




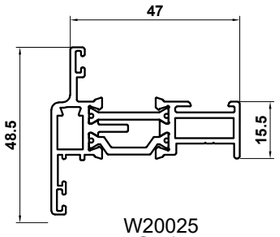
Heritage Windows
Main Profile



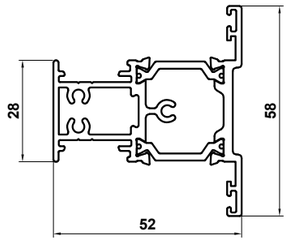
W20015
47mm outer frame



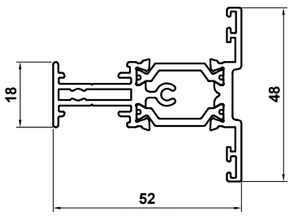
W20017
70mm outer frame



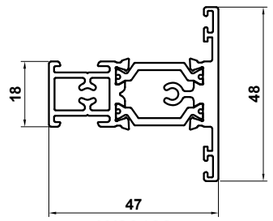
W20025
Sash



W20034
Mullion/Transom

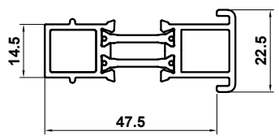


W20035
Slim Transom

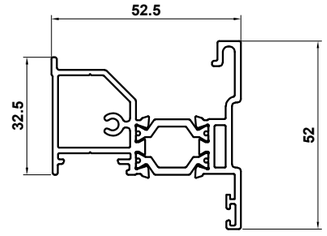


W20133
Sash transom

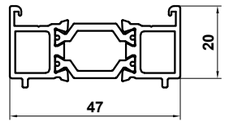
W20485
horizontal coupler with drip



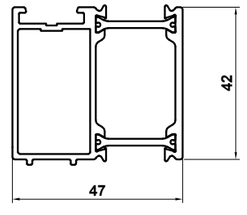
W20489
coupler



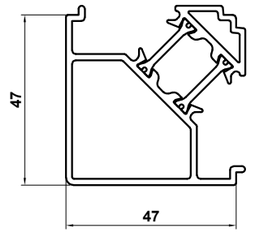
W20244
French casement mullion



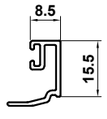
ETD056
20mm add on



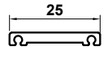
ETD058
42mm add on



ETC047
Corner Post



W20171N
28mm glazing bead

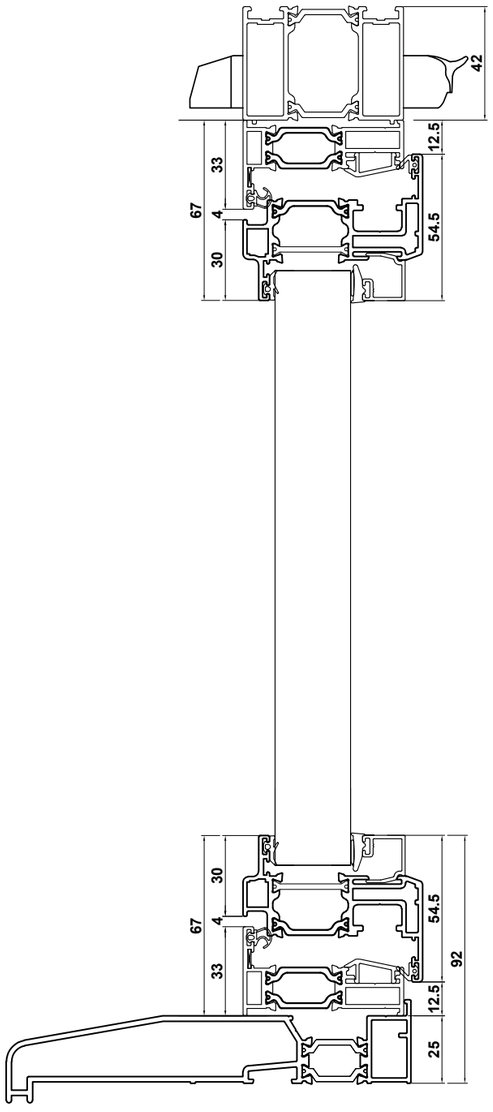


W20165
25mm astragal bar

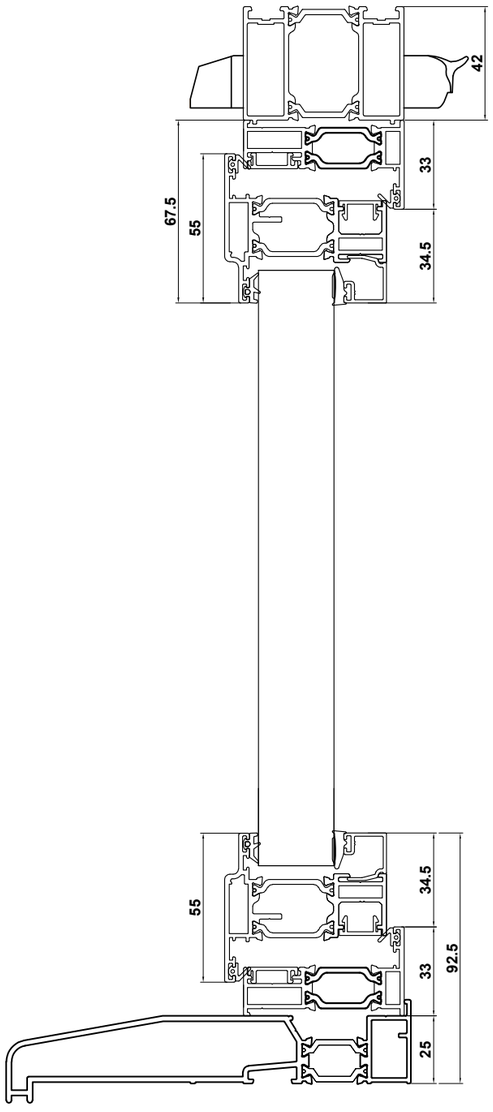
Heritage Doors
Assembly Drawings

Heritage 60 Standard Threshold

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



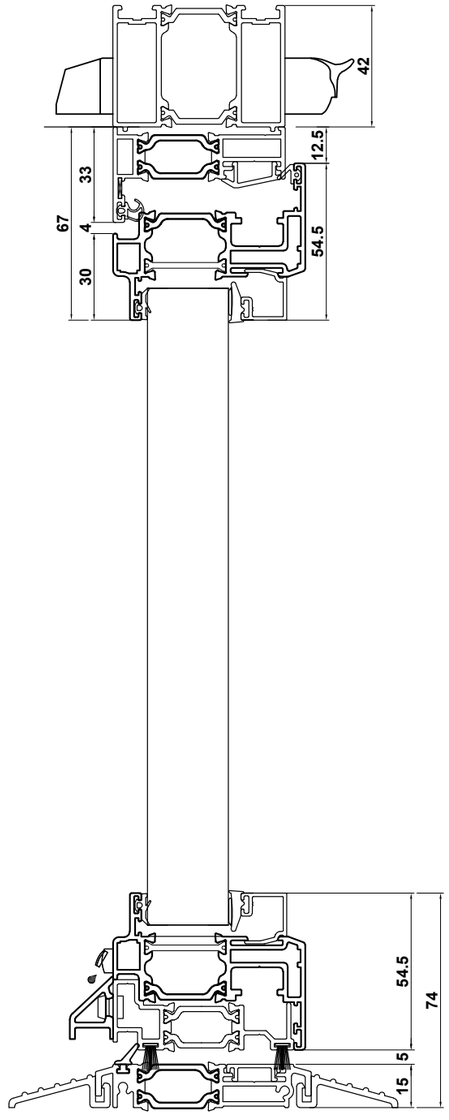
Heritage 60 Open Out
W20415 - Outer Frame
W20424 - Open Out Sash
W20469 - 28mm Glazing Bead
ETC457 - 150mm Sill



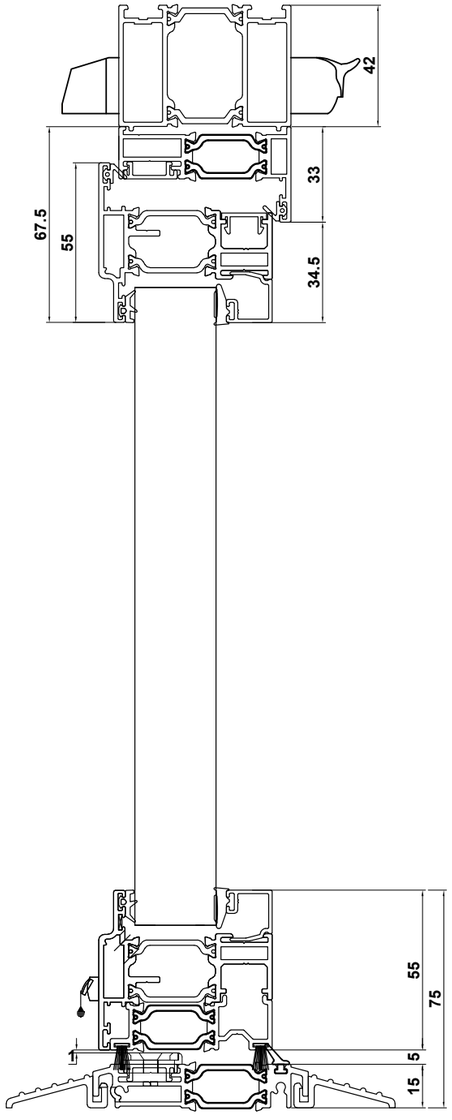
Heritage Doors
Assembly Drawings

Heritage 60 Low Threshold

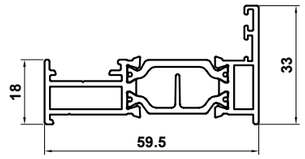
Heritage 60 Open In
W20415 - Outer Frame
W20470 - Low Threshold
EUD03 - Ramps
W20429 - Open In Sash
W20469 - 28mm Glazing Bead



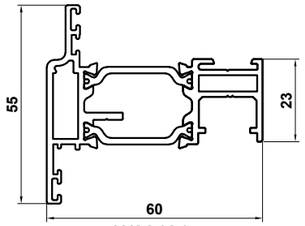
Heritage 60 Open Out
W20415 - Outer Frame
W20470 - Low Threshold
EUD03 - Ramps
W20424 - Open Out Sash
W20469 - 28mm Glazing Bead



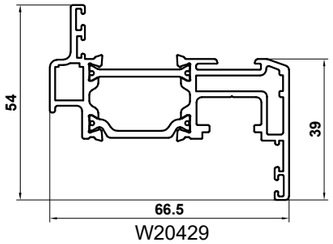
Heritage Doors
Main Profile



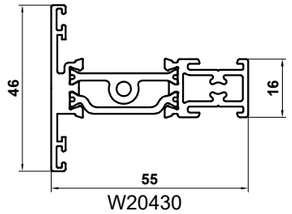
W20415
Outer frame



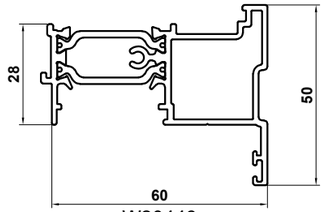
W20424
Door Sash open out



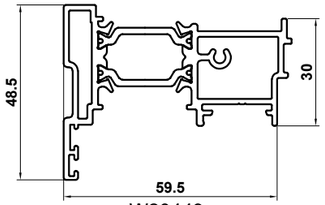
W20429
Door Sash open in



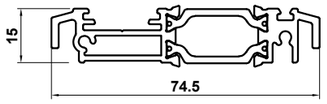
W20430
Transom



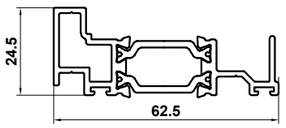
W20446
Flying mullion open out



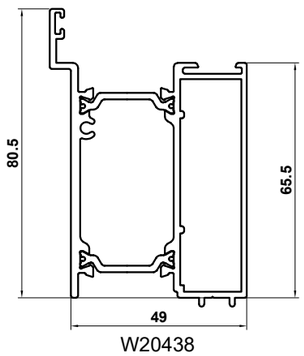
W20449
Flying mullion open in



W20470
Low threshold



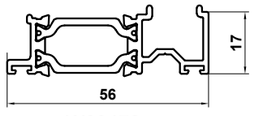
W20474
Low threshold infill open in



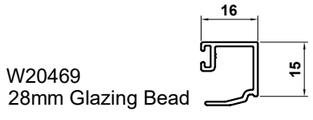
W20438
Lock Box



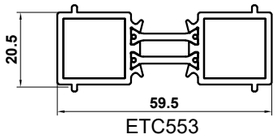
EUD03
Threshold ramp



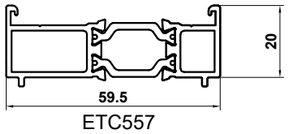
W20472
Low threshold infill open out



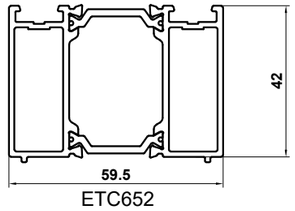
W20469
28mm Glazing Bead



ETC553
20mm coupler



ETC557
20mm Add on

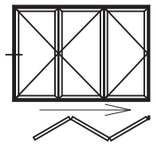


ETC652
42mm Add on

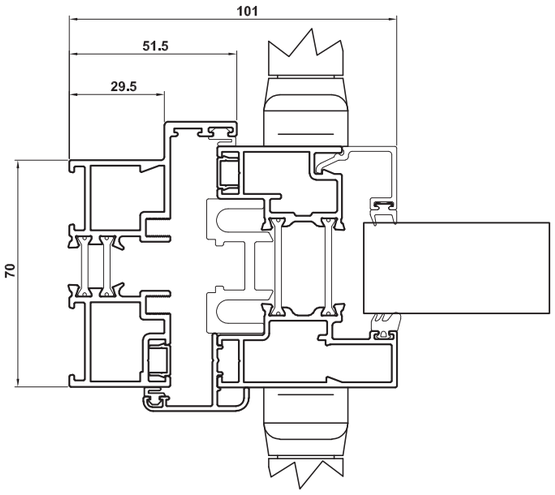
Bi-folding Door
Assembly Drawings

New Visofold Slim 1000 Quickglaze Bi-folding Door

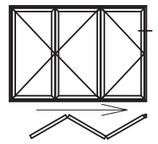
Jamb & Mullion Details

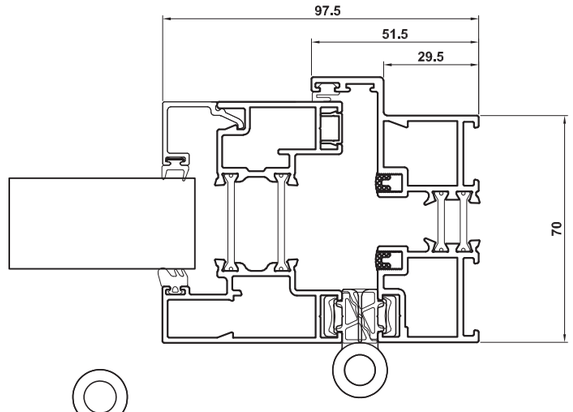


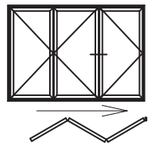
DV14 - Outer Frame
DV220 - Slim Sash
UN3160G - 28mm Glazing

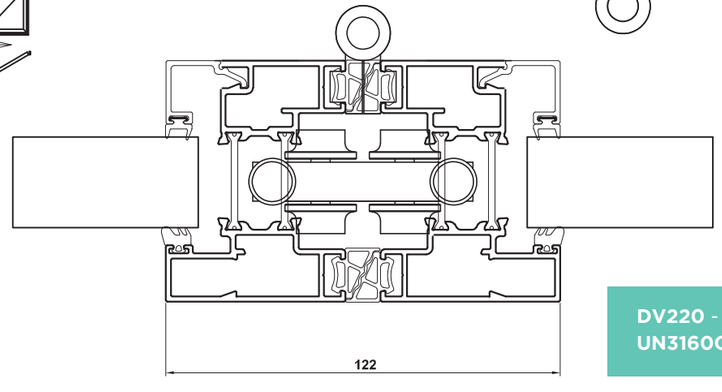


DV14 - Outer Frame
DV220 - Slim Sash
UN3160G - 28mm Glazing







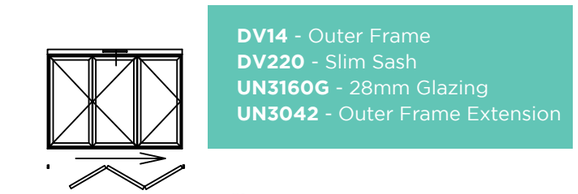


DV220 - Slim Sash
UN3160G - 28mm Glazing

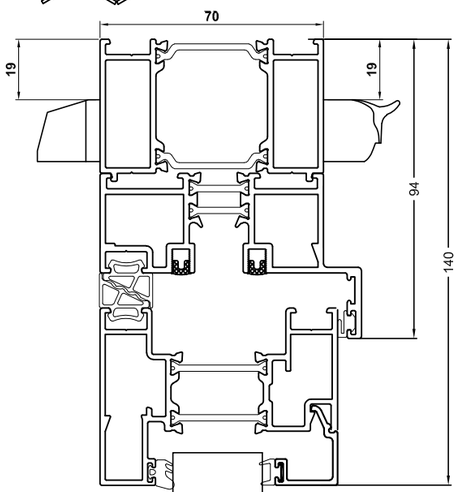
Bi-folding Door
Assembly Drawings

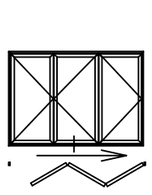
New Visofold Slim 1000 Quickglaze Bi-folding Door

Head & Threshold Details (Integrated Cill Threshold shown)

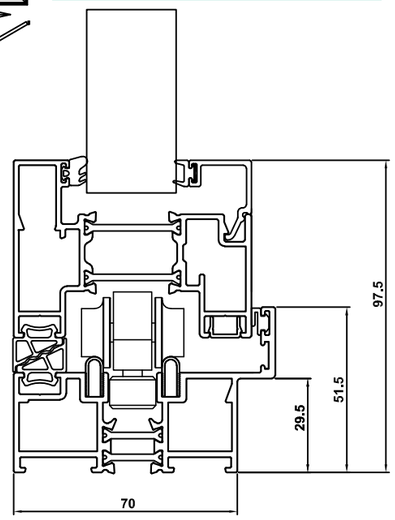


DV14 - Outer Frame
DV220 - Slim Sash
UN3160G - 28mm Glazing
UN3042 - Outer Frame Extension

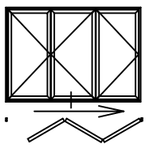




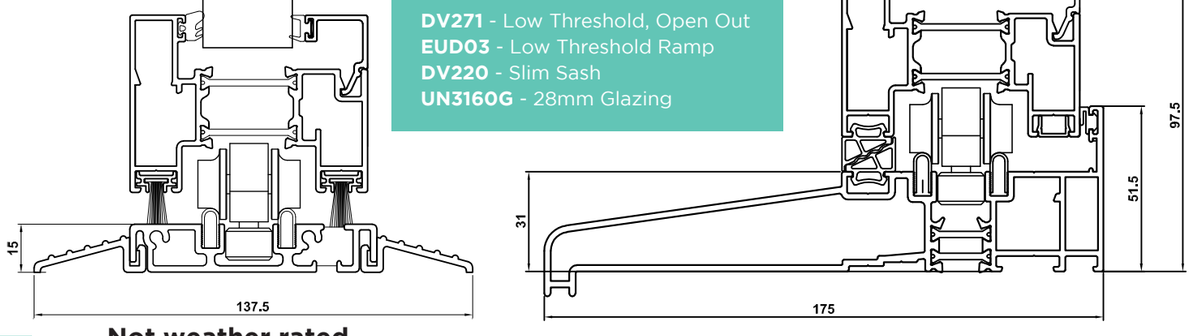
DV14 - Outer Frame
DV220 - Slim Sash
UN3160G - 28mm Glazing



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



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

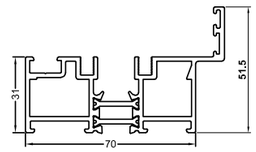


Not weather rated

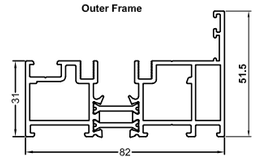
Version: E120722

Bi-folding Door
Main Profiles

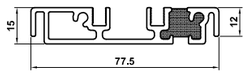
Visofold SLIM 1000 Quickglaze



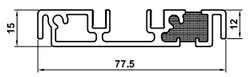
DV14
Outer Frame



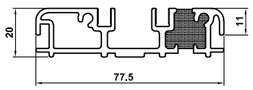
DV17
Outer Frame
(Used with DV176)



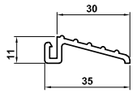
DV171
Low threshold, open in



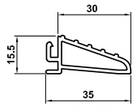
DV271
Low threshold, open out



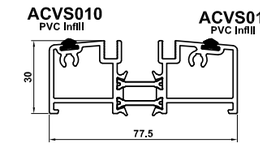
DV173
Low threshold



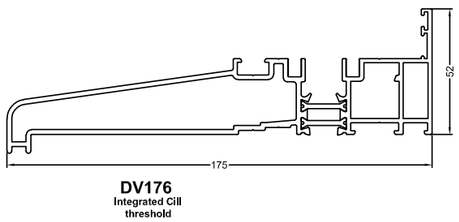
EUD03
Low threshold ramp



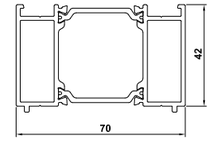
DV174
Low threshold ramp



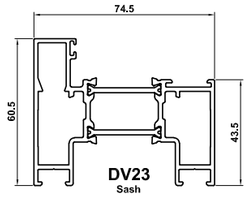
DV175
Low threshold



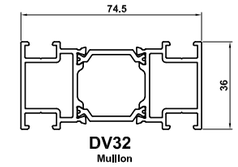
DV176
Integrated Cill threshold



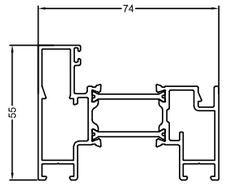
UN3042
Outer Frame Extension



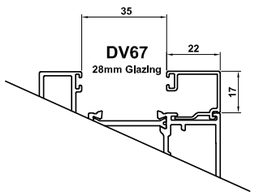
DV23
Sash

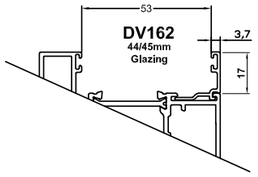


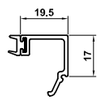
DV32
Mullion



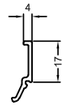
DV220
slimline bifold sash







UN3160G
28mm glazing Bead with Gasket



UN3168
44/45mm Glazing Bead

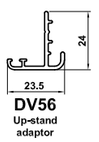
VG52
PVC Infill



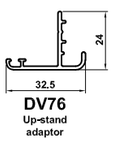
VG53
Stainless Steel Track



DV68
Extension



DV56
Up-stand adaptor



DV76
Up-stand adaptor



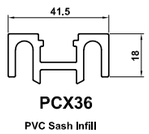
DV60
PVC Infill



DV62
Brush pile Adaptor



PCX15
PVC Euro-groove Infill



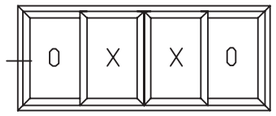
PCX36
PVC Sash Infill



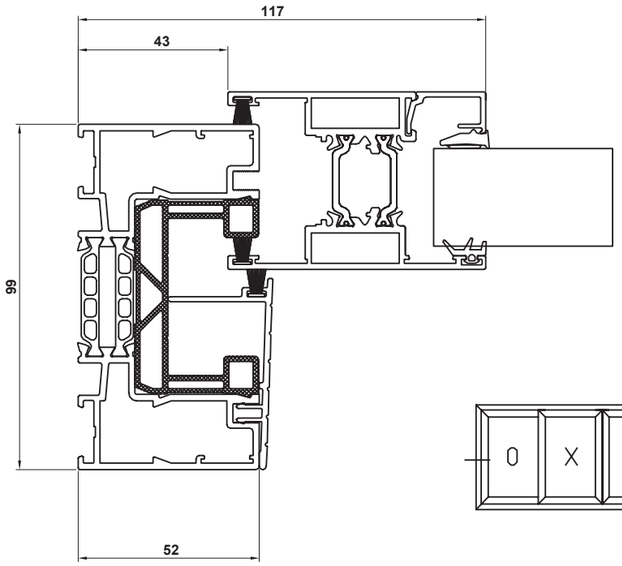
DV75
French Door Adaptor

Sliding Door
Assembly Drawings

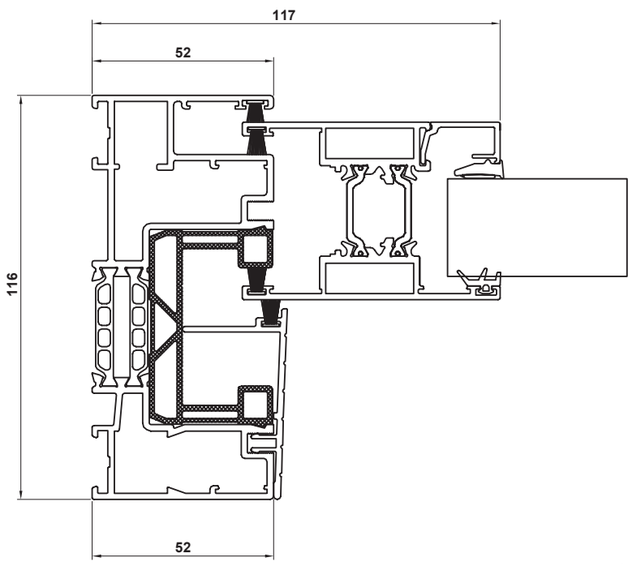
Visoglide Plus (Two Track)
Jamb Details



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

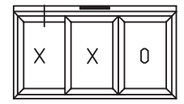


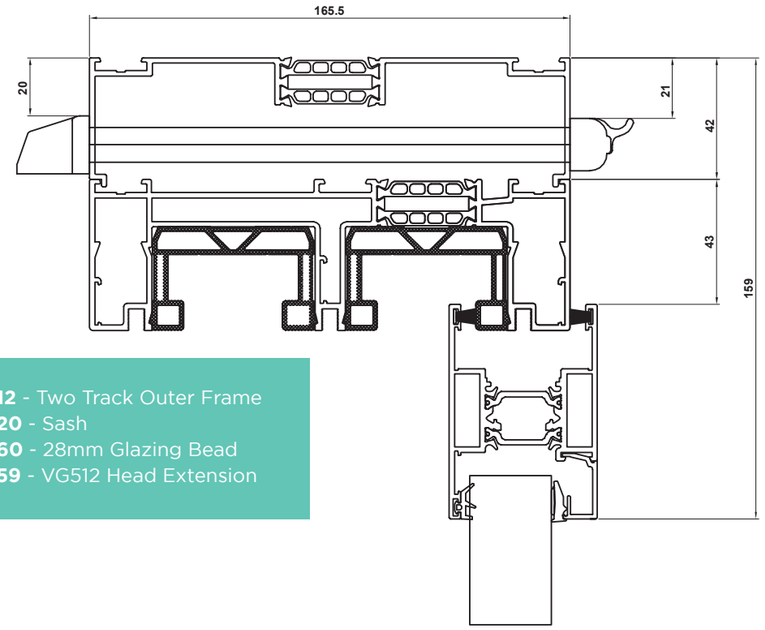
VG511 - Two Track Outer Frame
with Internal Upstand
VG520 - Sash
VG560 - 28mm Glazing Bead



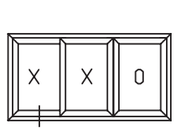
Sliding Door
Assembly Drawings

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

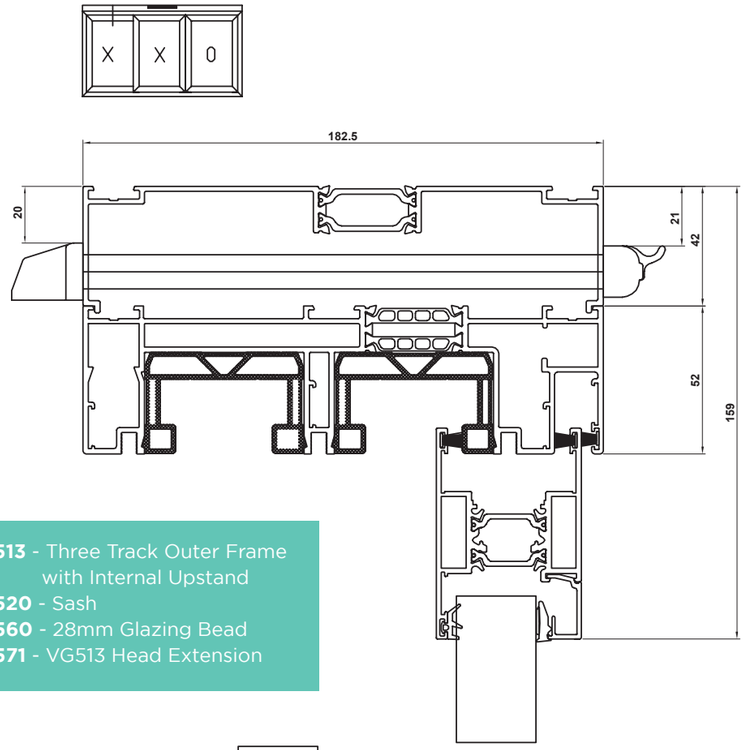


VG512 - Three Track Outer Frame
VG520 - Sash
VG560 - 28mm Glazing Bead

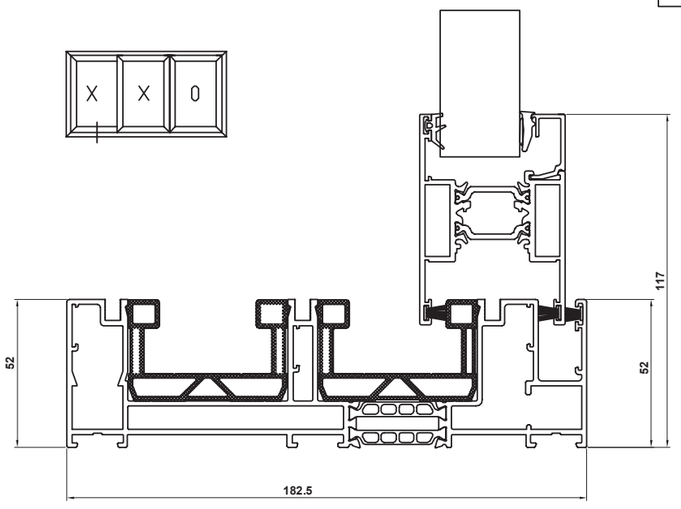
Sliding Door
Assembly Drawings

Visoglide Plus (Three Track)

Head & Threshold Details – With Internal Upstand Frame



VG513 - Three Track Outer Frame with Internal Upstand
VG520 - Sash
VG560 - 28mm Glazing Bead
VG571 - VG513 Head Extension

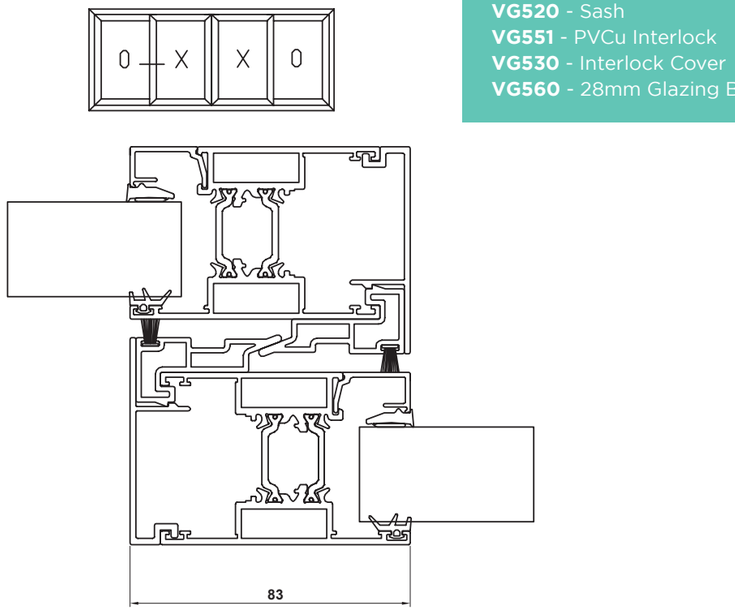


VG513 - Three Track Outer Frame with Internal Upstand
VG520 - Sash
VG560 - 28mm Glazing Bead

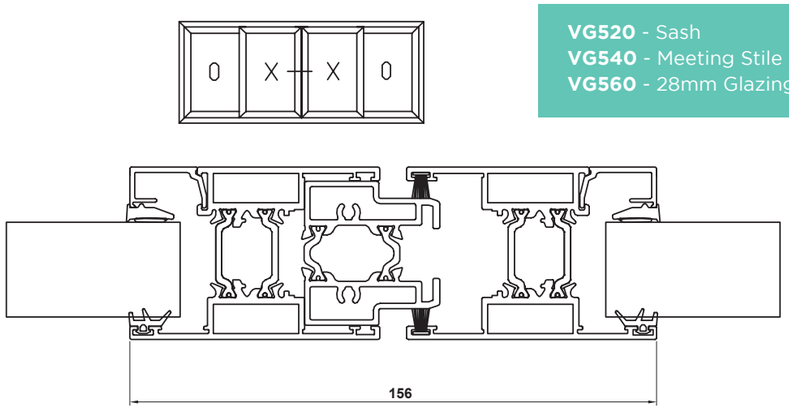
Sliding Door
Assembly Drawings

Visoglide Plus

Mullion Details



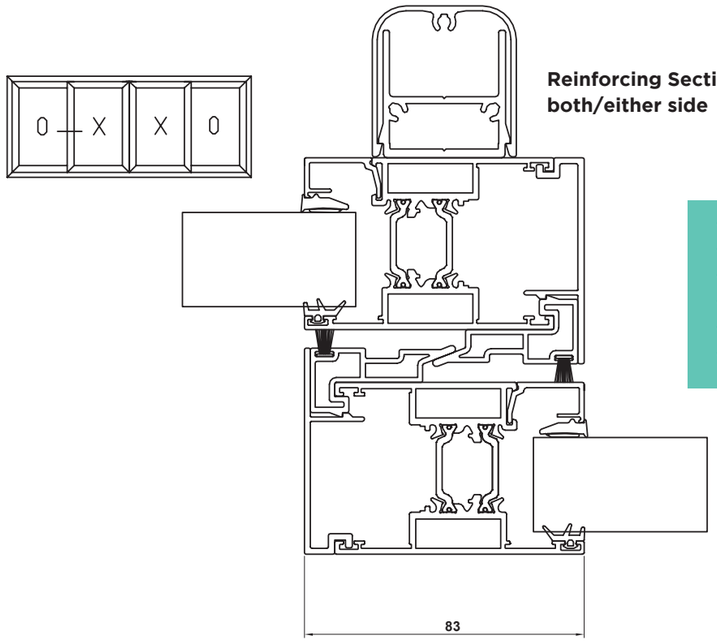
VG520 - Sash
VG551 - PVCu Interlock
VG530 - Interlock Cover
VG560 - 28mm Glazing Bead



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

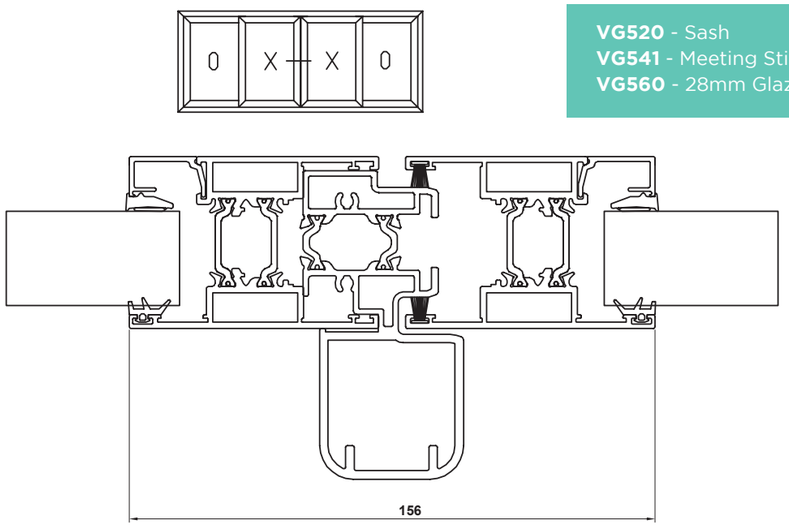
Sliding Door
Assembly Drawings

Visoglide Plus
Reinforced Mullion Details



Reinforcing Section can be used both/either side

VG520 - Sash
VG551 - PVCu Interlock
VG530 - Interlock Cover
VG560 - 28mm Glazing Bead
VG532 - Reinforcing Section
VG533 - VG532 Cover Cap

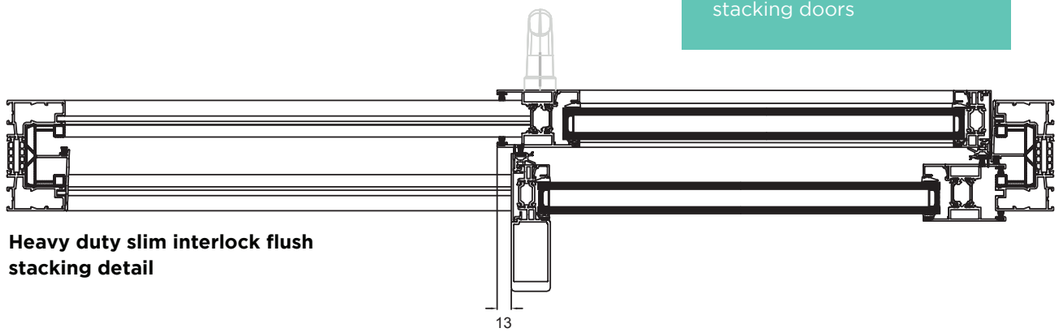


VG520 - Sash
VG541 - Meeting Stile Adaptor
VG560 - 28mm Glazing Bead

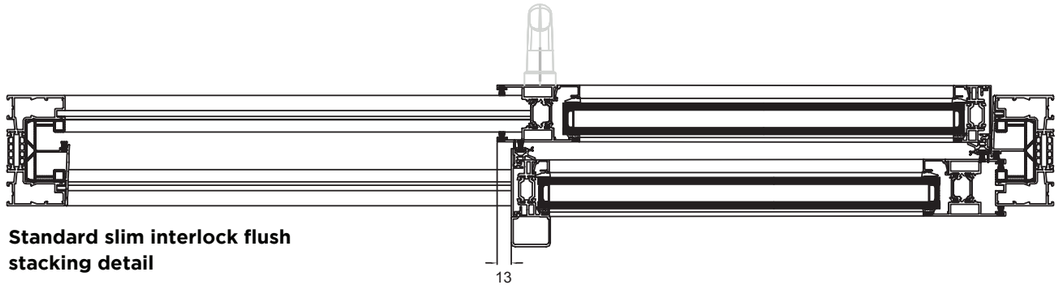
Sliding Door
Assembly Drawings

Visoglide Plus
Flush Stacking

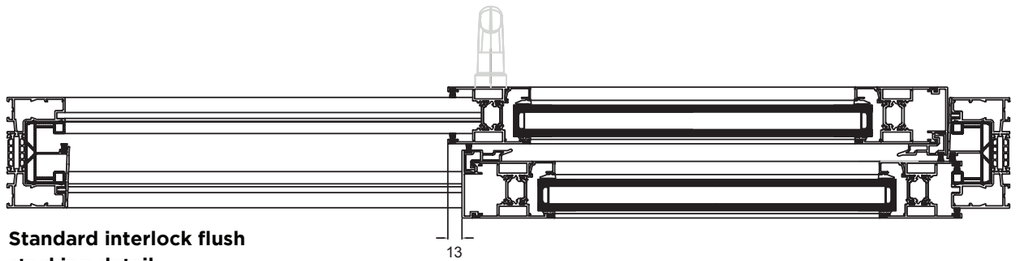
Note:
No external handle on flush stacking doors



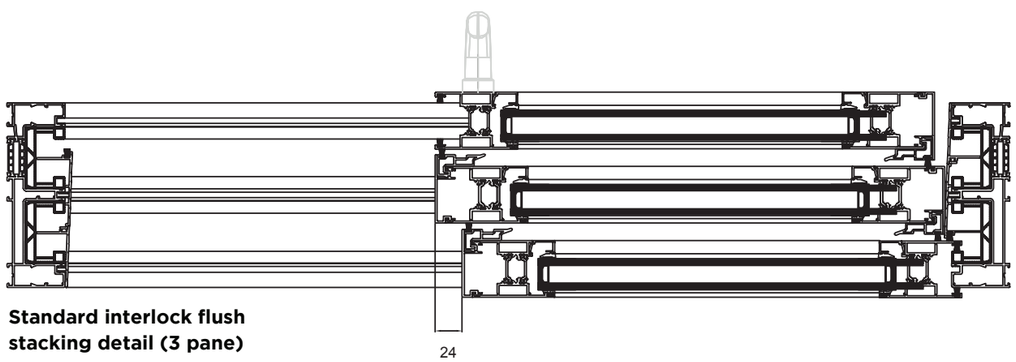
Heavy duty slim interlock flush stacking detail



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

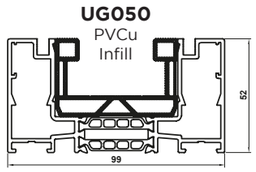


VG510 - Two Track Outer Frame
VG520 - Sash
VG535 - Internal Slim Interlock
VG539 - External Heavy Duty Slim Interlock
VG552 - PVCu Interlock
VG537 - Interlock Cover
VG565 - 28mm Glazing Bead

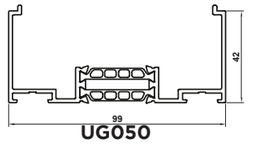
Version: A250718

Sliding Door
Main Profiles

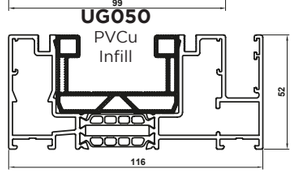
Visoglide Plus



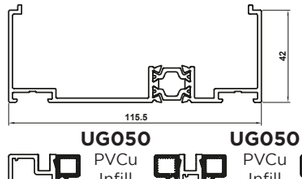
VG510
Two Track
Outer Frame



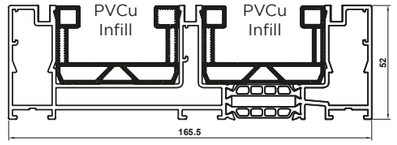
VG558
VG510 Head
Extension



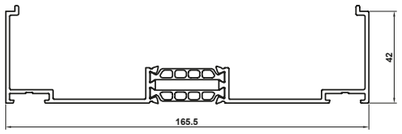
VG511
Two Track
Outer Frame
with Internal
Upstand



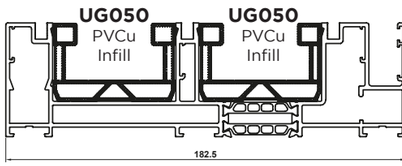
VG570
VG511 Head
Extension



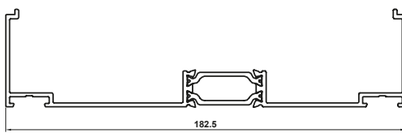
VG512
Three Track
Outer Frame



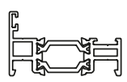
VG559
VG512 Head
Extension



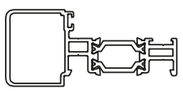
VG513
Three Track
Outer Frame
with Internal
Upstand



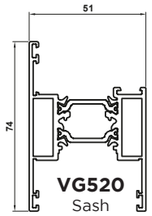
VG571
VG513 Head
Extension



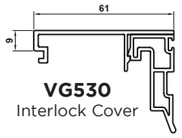
VG535
Internal Slim Interlock



VG536
External Slim Interlock

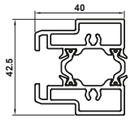


VG520
Sash

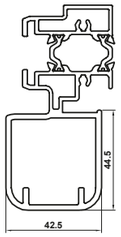


VG530
Interlock Cover

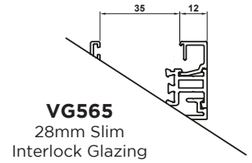
VG551
PVCu Interlock



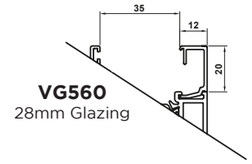
VG540
Meeting Stile
Adaptor



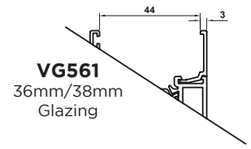
VG541
Meeting Stile
Adaptor



VG565
28mm Slim
Interlock Glazing



VG560
28mm Glazing



VG561
36mm/38mm
Glazing

VG53
Stainless
Steel Track



VG52
PVCu Infill



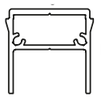
VL75
Coupling Piece



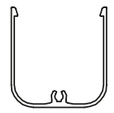
VL72
Weather Drip



VG557
Frame Extension



VG532
Reinforcing
Section



VG533
VG532
Cover Cap

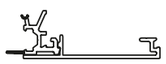


VG514
Two Track
Cover

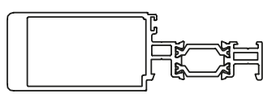


VG515
Three Track
Cover

VG552
PVCu
Interlock



VG537
Slim Interlock
Cover



VG539
External Slim Interlock

Version: C250718

Non-Stock RAL Colour Options

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

3099ST	RAL 1001S	RAL 1035S	RAL 3017M
9LAANO	RAL 1002G	RAL 1036M	RAL 3018G
AN1003	RAL 1002M	RAL 1037G	RAL 3018M
BS 00A01M	RAL 1003G	RAL 2000G	RAL 3020G
BS 00A05	RAL 1003M	RAL 2000M	RAL 3020M
BS 00A05M	RAL 1004G	RAL 2001G	RAL 3020S
BS 00A05S	RAL 1004M	RAL 2002G	RAL 3022G
BS 00A09	RAL 1005G	RAL 2002M	RAL 3022M
BS 00A13M	RAL 1005M	RAL 2002S	RAL 3031S
BS 00E55M	RAL 1006G	RAL 2003G	RAL 4002G
BS 04C39	RAL 1006M	RAL 2004G	RAL 4003G
BS 04C39M	RAL 1007G	RAL 2004M	RAL 4005G
BS 04E53M	RAL 1007M	RAL 2008G	RAL 4005M
BS 04E53S	RAL 1011G	RAL 2008M	RAL 4008G
BS 08B15	RAL 1011M	RAL 2009G	RAL 4009G
BS 08B15M	RAL 1012G	RAL 2009M	RAL 5000G
BS 08B15S	RAL 1013G	RAL 2010G	RAL 5000M
BS 08B17	RAL 1013M	RAL 2010M	RAL 5001G
BS 08B29	RAL 1013S	RAL 2011G	RAL 5001M
BS 08B29M	RAL 1013ST	RAL 2011M	RAL 5001S
BS 08B29S	RAL 1014G	RAL 2012G	RAL 5002G
BS 08C31	RAL 1014M	RAL 2013M	RAL 5002M
BS 08C37	RAL 1014S	RAL 2236M	RAL 5002S
BS 10A01M	RAL 1015G	RAL 3000G	RAL 5003G
BS 10A03M	RAL 1015M (KL001)	RAL 3000M	RAL 5003M
BS 10A03S	RAL 1015S	RAL 3001G	RAL 5003S
BS 10A05M	RAL 1015ST	RAL 3001M	RAL 5004G
BS 10B15	RAL 1016G	RAL 3002G	RAL 5004M
BS 10B15M	RAL 1016M	RAL 3002M	RAL 5005G
BS 10B15S	RAL 1017G	RAL 3003G	RAL 5005M
BS 10B19M	RAL 1017M	RAL 3003M	RAL 5005S
BS 18B25M	RAL 1018G	RAL 3003S	RAL 5007G
BS 288C	RAL 1018M	RAL 3004G	RAL 5007M
BS 381C63	RAL 1019G	RAL 3004M (KL002)	RAL 5008G
BS 48A09	RAL 1019M	RAL 3004S	RAL 5008M
BS 538	RAL 1019S	RAL 3005G	RAL 5008S
BS 81C628	RAL 1020G	RAL 3005M	RAL 5009G
BS 81C631	RAL 1020M	RAL 3005ST	RAL 5009M
BS OA7000	RAL 1020S	RAL 3007M	RAL 5009S
KL001	RAL 1021G	RAL 3009M	RAL 5010G
KL002	RAL 1021M	RAL 3009S	RAL 5010M
KL003	RAL 1023G	RAL 3009ST	RAL 5010S
KL004	RAL 1023M	RAL 3011G	RAL 5011G
KL006	RAL 1024G	RAL 3012G	RAL 5011M (KL003)
KL007	RAL 1024M	RAL 3012M	RAL 5011S
KL009D	RAL 1027G	RAL 3013G	RAL 5011ST
KL010	RAL 1027M	RAL 3013M	RAL 5012G
KL011	RAL 1028G	RAL 3014G	RAL 5012M
KL012	RAL 1028M	RAL 3014M	RAL 5012S
KL013	RAL 1032G	RAL 3015G	RAL 5013G
RAL 1000G	RAL 1032M	RAL 3015M	RAL 5013M
RAL 1000M	RAL 1033G	RAL 3016G	RAL 5013S
RAL 1001G	RAL 1034G	RAL 3016M	RAL 5014G
RAL 1001M	RAL 1034M	RAL 3017G	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 7000G	RAL 7000ST	RAL 7030G
RAL 5015G	RAL 7000M	RAL 7001G	RAL 7030M
RAL 5015M	RAL 7000S	RAL 7001M	RAL 7030S
RAL 5015S	RAL 6011G	RAL 7001S	RAL 7031G
RAL 5017G	RAL 6011M	RAL 7002G	RAL 7031M
RAL 5017M	RAL 6011S	RAL 7002M	RAL 7031S
RAL 5017S	RAL 6012G	RAL 7002S	RAL 7032G
RAL 5018G	RAL 6012M	RAL 7003G	RAL 7032M
RAL 5018M	RAL 6013G	RAL 7003M	RAL 7032S
RAL 5019G	RAL 6013M	RAL 7003S	RAL 7033G
RAL 5019M	RAL 6013S	RAL 7004G	RAL 7033M
RAL 5019S	RAL 6014G	RAL 7004M	RAL 7033S
RAL 5020G	RAL 6014M	RAL 7004S	RAL 7034G
RAL 5020M	RAL 6015G	RAL 7005G	RAL 7034M
RAL 5020S	RAL 6015M	RAL 7005M	RAL 7034S
RAL 5021G	RAL 6015S	RAL 7005S	RAL 7034ST
RAL 5021M	RAL 6016G	RAL 7006G	RAL 7035G
RAL 5021S	RAL 6016M	RAL 7006M	RAL 7035M
RAL 5022G	RAL 6016S	RAL 7006S	RAL 7035S
RAL 5022M	RAL 6017G	RAL 7009G	RAL 7036G
RAL 5022S	RAL 6017M	RAL 7009M	RAL 7036M
RAL 5023G	RAL 6018G	RAL 7010G	RAL 7036S
RAL 5023M	RAL 6018M	RAL 7010M	RAL 7037G
RAL 5024G	RAL 6019G	RAL 7010S	RAL 7037M
RAL 5024M	RAL 6019M	RAL 7011G	RAL 7037S
RAL 5024S	RAL 6019S	RAL 7011M	RAL 7038G
RAL 5111ST	RAL 6020G	RAL 7011S	RAL 7038M
RAL 6000G	RAL 6020M	RAL 7012G	RAL 7038S
RAL 6000M	RAL 6021G	RAL 7012M	RAL 7039G
RAL 6001G	RAL 6021M	RAL 7012S	RAL 7039M
RAL 6001M	RAL 6021S	RAL 7013G	RAL 7039S
RAL 6001S	RAL 6022G	RAL 7013M	RAL 7040G
RAL 6002G	RAL 6022M	RAL 7015G	RAL 7040M
RAL 6002M	RAL 6024G	RAL 7015M	RAL 7040S
RAL 6002S	RAL 6024M	RAL 7015S	RAL 7040ST
RAL 6003G	RAL 6025G	RAL 7016G	RAL 7042G
RAL 6003M	RAL 6026G	RAL 7016S	RAL 7042M
RAL 6003S	RAL 6026M	RAL 7016ST	RAL 7042S
RAL 6004G	RAL 6026S	RAL 7021G	RAL 7043G
RAL 6005G	RAL 6027G	RAL 7021M	RAL 7043M
RAL 6005M	RAL 6027M	RAL 7021S	RAL 7043S
RAL 6005S	RAL 6028G	RAL 7021ST	RAL 7044G
RAL 6006G	RAL 6028M	RAL 7022G	RAL 7044M
RAL 6006M	RAL 6029G	RAL 7022M	RAL 7044S
RAL 6006S	RAL 6029M	RAL 7022S	RAL 7045G
RAL 6007G	RAL 6032G	RAL 7023G	RAL 7045M
RAL 6007M	RAL 6032M	RAL 7023M	RAL 7045S
RAL 6008G	RAL 6033G	RAL 7023S	RAL 7046G
RAL 6009G	RAL 6033M	RAL 7024G	RAL 7046M
RAL 6009M (KL004)	RAL 6034G	RAL 7024M	RAL 7046S
RAL 6009S	RAL 6034M	RAL 7024S	RAL 7047G
RAL 6009ST	RAL 6034S	RAL 7026G	RAL 7047M
RAL 6010G	RAL 6099ST	RAL 7026M	RAL 7047S
RAL 6010M	RAL 6999ST	RAL 7026S	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)

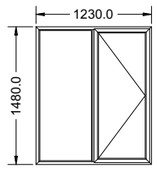
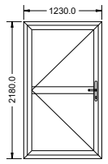
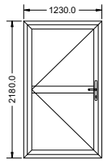
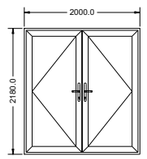
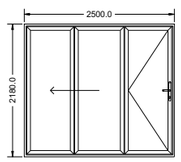
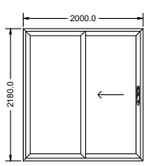
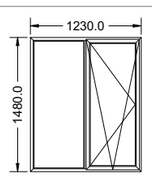
At REAL, we are proud to be a responsible manufacturer. That means we take changes in Regulations seriously – to ensure we're compliant, you're compliant and your customers enjoy products that meet the current standards. Our aluminium profiles are manufactured using the highest quality materials but 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

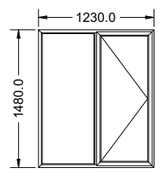
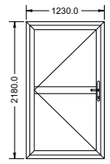
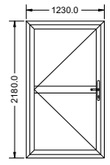
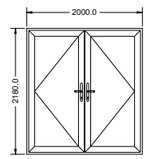
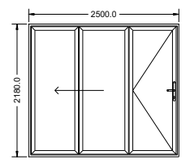
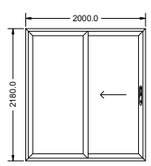
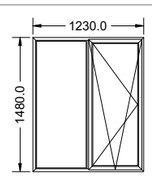
(Energy Ratings)

REQUIREMENT	WINDOW/DOOR DESIGN	SYSTEM	DOUBLE GLAZED UNIT SPEC	ACTUAL RATING	
B rated or Uw 1.4 W/m²k		**NEW PRODUCT** Alitherm 400 Window (F)	28mm unit clear/argon/softcoat 1.2 Centre pane 1.22 W/m²k warm edge spacer	A	
		Alitherm Heritage 47	28mm unit clear/argon/softcoat 1.2 Centre pane 1.22 W/m2k warm edge spacer	B	
>60% glazed door C rated or Ud 1.4 W/m²k		**NEW PRODUCT** Alitherm 400	Double glazed 28mm unit clear/argon/softcoat 1 Centre pane 1.068W/m2k Warm edge spacer	C	
>60% glazed door C rated or Ud 1.4 W/m²k		**NEW PRODUCT** Heritage 60	Double glazed 28mm unit clear/argon/softcoat 1 Centre pane 1.068W/m2k Warm edge spacer		
C rated or Ud 1.4 W/m²k		**NEW PRODUCT** Alitherm 400 French Door (F)	28mm unit clear/argon/softcoat 1.2 Centre pane 1.22 W/m²k warm edge spacer	C	Band B achievable with low iron glass
C rated or Ud 1.4 W/m²k		Visofold SLIM 1000 Bi-fold door	28mm unit clear/argon/softcoat 1.2 Centre pane 1.22 W/m²k warm edge spacer	C	Band B achievable with low iron glass
C rated or Ud 1.4 W/m²k		Visoglide Plus Sliding Door	28mm unit clear/argon/softcoat 1.2 Centre pane 1.22 W/m²k warm edge spacer	B	
B rated or Uw 1.4 W/m²k		Alitherm 400 TBT	28mm unit clear/argon/softcoat 1.2 Centre pane 1.22 W/m²k warm edge spacer	B	

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

Extensions U Values

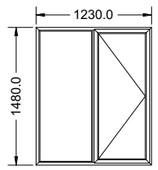
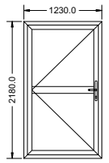
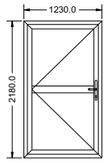
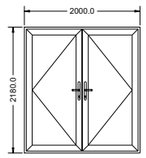
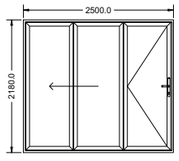
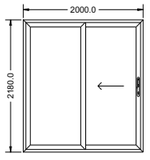
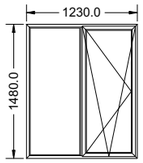
(Limiting U Value 1.4 W/m²k)

REQUIREMENT	WINDOW/DOOR DESIGN	SYSTEM	GLAZED UNIT SPEC	ACTUAL UW/UD
B rated or Uw 1.4W/m²k		**NEW PRODUCT** Alitherm 400 Window (F)	Double glazed 28mm unit clear/argon/softcoat 1 Centre pane 1.068 W/m²k warm edge spacer	1.4 W/m²K
		Heritage 47	Triple glazed 36mm unit clear/ softcoat 1.2/ softcoat 1.2 Centre pane 0.81 W/m2k warm edge space	1.3 W/m²K
>60% glazed door C rated or Ud 1.4 W/m²k		**NEW PRODUCT** Alitherm 400	Double glazed 28mm unit clear/argon/softcoat 1 Centre pane 1.068W/m²k warm edge spacer	1.3 W/m²K
>60% glazed door C rated or Ud 1.4 W/m²k		**NEW PRODUCT** Heritage 60	Triple glazed 36mm unit clear/ clear/softcoat 1.2 Centre pane 1.1W/m2k warm edge spacer	1.4 W/m²K
C rated or Ud 1.4W/m²k		**NEW PRODUCT** Alitherm 400 French Door (F)	Double glazed 28mm unit clear/argon/softcoat 1 Centre pane 1.07W/m²k warm edge spacer	1.4 W/m²K
C rated or Ud 1.4W/m²k		Visofold Slim 1000 Bi-fold door	Triple glazed 44mm unit clear/softcoat 1.2/softcoat 1.2 Centre pane 0.65 W/m²k warm edge spacer	1.2 W/m²K
C rated or Ud 1.4W/m²k		Visoglide Plus Sliding Door (F)	Double glazed 28mm unit clear/argon/softcoat 1 Centre pane 1.07W/m²k warm edge spacer	1.4 W/m²K
B rated or Uw 1.4W/m²k		Alitherm 400 TBT	Double glazed 28mm unit clear/argon/softcoat 1 Centre pane 1.068W/m²k warm edge spacer	1.4 W/m²K

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

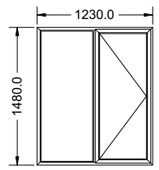
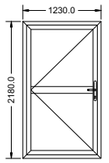
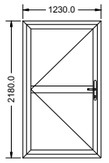
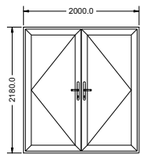
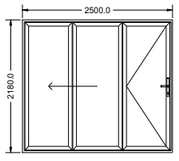
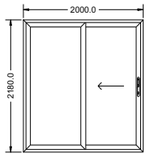
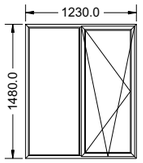
(Limiting U Value 1.6 W/m²k)

REQUIREMENT	WINDOW/DOOR DESIGN	SYSTEM	DOUBLE GLAZED UNIT SPEC	ACTUAL UW/UD
Uw 1.6 W/m²k minimum Uw 1.2 W/m²k Target		**NEW PRODUCT** Alitherm 400 Window (F)	28mm unit clear/argon/softcoat 1 Centre pane 1.068 W/m²k warm edge spacer	1.4 W/m²K
		NEW PRODUCT Heritage	28mm unit clear/argon/softcoat 1 Centre pane 1.068 W/m²k warm edge spacer	1.6 W/m²K
>60% glazed door Ud 1.6 W/m²k minimum Ud 1.2 W/m²k Target		**NEW PRODUCT** Alitherm 400 Resi Door (F)	40mm unit clear/softcoat /softcoat Centre pane 0.72 W/m²k warm edge spacer	1.3 W/m²K
>60% glazed door Ud 1.6 W/m²k minimum Ud 1.2 W/m²k Target		**NEW PRODUCT** Heritage 60	36mm unit clear/softcoat /softcoat 1 Centre pane 0.7 W/m2k Warm edge spacer	1.5 W/m²K
Ud 1.6 W/m²k minimum Ud 1.2 W/m²k Target		**NEW PRODUCT** Alitherm 400 French Door (F)	28mm unit clear/argon/softcoat 1 Centre pane 1.068 W/m²k warm edge spacer	1.4 W/m²K
Ud 1.6 W/m2k minimum Ud 1.2 W/m2k Target		Visofold Slim 1000 Bi-fold door	28mm unit clear/argon/softcoat 1 Centre pane 1.068 W/m²k warm edge spacer	1.6 W/m²K
Ud 1.6 W/m2k minimum Ud 1.2 W/m2k Target		Visoglide Plus Sliding Door (F)	28mm unit clear/argon/softcoat 1 Centre pane 1.068 W/m²k warm edge spacer	1.4 W/m²K
Uw 1.6 W/m²k minimum Uw 1.2 W/m²k Target		Alitherm 400 TBT	28mm unit clear/argon/softcoat 1 Centre pane 1.068 W/m²k warm edge spacer	1.4 W/m²K

Glass type 1 -examples Pilkington S1, Planitherm One, Climaguard 1

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/m²k minimum Uw 1.2 W/m²k Target		**NEW PRODUCT** Alitherm 400	40mm unit clear/softcoat1.2/softcoat 1.2 Centre pane 0.72 W/m2k warm edge spacer	1.1 W/m²K
		NEW PRODUCT Heritage	36mm unit clear/softcoat1/softcoat1 Centre pane 0.67 W/m2k warm edge spacer	1.2 W/m²K
>60% glazed door Ud 1.6 W/m²k minimum Ud 1.2 W/m²k Target		**NEW PRODUCT** Alitherm 400 Resi Door (F)	40mm unit clear/softcoat1.2/softcoat 1.2 Centre pane 0.72 W/m2k warm edge spacer	1.1 W/m²K
>60% glazed door Ud 1.6 W/m²k minimum Ud 1.2 W/m²k Target		**NEW PRODUCT** Heritage 60	36mm unit clear/softcoat1/softcoat1 Centre pane 0.67 W/m2k warm edge spacer	1.2 W/m²K
Ud 1.6 W/m²k minimum Ud 1.2 W/m²k Target		**NEW PRODUCT** Alitherm 400 French Door (F)	40mm unit clear/softcoat /softcoat Centre pane 0.72 W/m²k warm edge spacer	1.1 W/m²K
Ud 1.6 W/m²k minimum Ud 1.2 W/m²k Target		Visofold Slim 1000 Bi-fold door **NEW BEAD**	44mm unit clear/softcoat /softcoat Centre pane 0.65 W/m²k warm edge spacer	1.2 W/m²K
Ud 1.6 W/m²k minimum Ud 1.2 W/m²k Target		Visoglide Plus Sliding Door (F)	36mm unit clear/softcoat /softcoat Centre pane 0.81 W/m²k warm edge spacer	1.2 W/m²K
Uw 1.6 W/m2k minimum Uw 1.2 W/m2k Target		Alitherm 400 TBT	36mm unit clear/softcoat 1/softcoat Centre pane 0.81 W/m2k warm edge spacer	1.2 W/m2K

Glass type 1 -examples Pilkington S1, Planitherm One, Climaguard 1
+Note: Triple glazing reduces light transmission to the inside

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/m²K
Doors with glazed area greater than 60%	1.2 W/m²K
Other doors	1.0 W/m²K

Table 4.1 from Doc L

DESCRIPTION	LIMITING 'U' VALUE
Windows	1.6 W/m²K
Doors	1.6 W/m²K

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/m²K	B
Doors with glazed area greater than 60%	1.4 W/m²K	C
Other doors	1.4 W/m²K	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 neded

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)	8,000mm²	10,000mm²
Kitchen (see note 2 & 3)	8,000mm²	10,000mm²
Utility Room	NO MINIMUM	NO MINIMUM
Bathroom (see note 4)	4,000mm²	4,000mm²
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.

1a) If the dwelling has only one exposed facade (e.g. within a multi-storey building).

1b) If the dwelling has 70% of its openings on the same facade.

1c) If a kitchen has no windows or external facade where a ventilator could be installed.

2) 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).

3) 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.

4) 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:-

i) No smaller than the background ventilators in the original windows.

ii) 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:-

i) Incorporating background ventilators in the replacement windows equivalent to column one in the above table 1.7.

ii) 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.

iii) 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.

For full clarity and guidance on New Part L and Part F regulations, please visit www.gov.uk

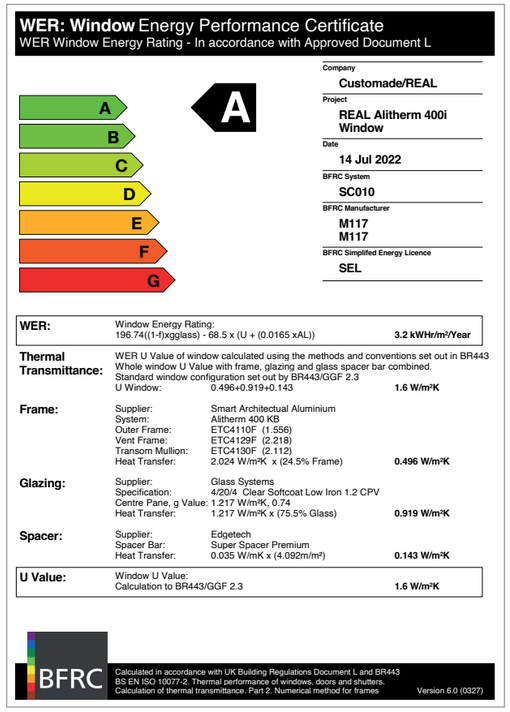
Building Regulation Compliance, Window Energy Ratings (WER) and Doorset Energy Ratings (DSER)

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

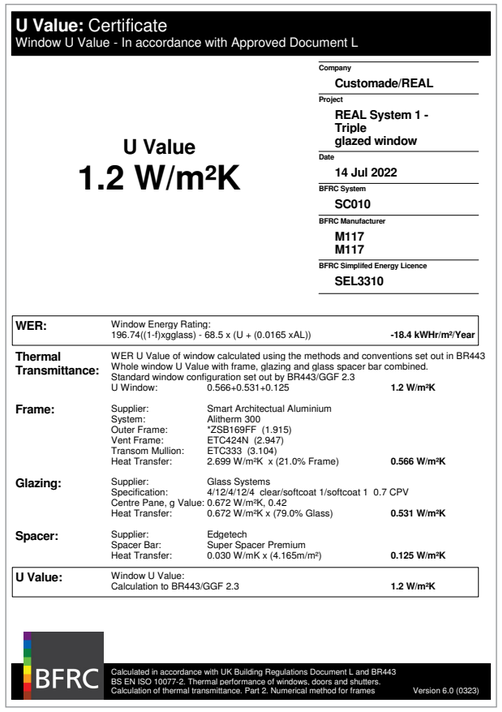
A
B
C
D
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F
G

A

Company: Customade/REAL
Project: REAL Alitherm 400i Window
Date: 14 Jul 2022
BFRC System: SC010
BFRC Manufacturer: M117 M117
BFRC Simplified Energy Licence: SEL

WER:	Window Energy Rating: 196.74((1-f)xglass) - 68.5 x (U + (0.0165 xAL))	**3.2 kWHr/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	**1.6 W/m²K**
Frame:	Supplier: Smart Architectual 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/m²K 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/m²K, 0.74 Heat Transfer: 1.217 W/m²K x (75.5% Glass)	**0.919 W/m²K**
Spacer:	Supplier: Edgetech Spacer Bar: Super Spacer Premium Heat Transfer: 0.035 W/mK x (4.092m/m²)	**0.143 W/m²K**
U Value:	Window U Value: Calculation to BR443/GGF 2.3	**1.6 W/m²K**

BFRC
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
BFRC System: SC010
BFRC Manufacturer: M117 M117
BFRC Simplified Energy Licence: SEL3310

WER:	Window Energy Rating: 196.74((1-f)xglass) - 68.5 x (U + (0.0165 xAL))	**-18.4 kWHr/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	**1.2 W/m²K**
Frame:	Supplier: Smart Architectual Aluminium System: Alitherm 300 Outer Frame: *ZSB169FF (1.915) Vent Frame: ETC424N (2.947) Transom Mullion: ETC333 (3.104) Heat Transfer: 2.699 W/m²K 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/m²K, 0.42 Heat Transfer: 0.672 W/m²K x (79.0% Glass)	**0.531 W/m²K**
Spacer:	Supplier: Edgetech Spacer Bar: Super Spacer Premium Heat Transfer: 0.030 W/mK x (4.165m/m²)	**0.125 W/m²K**
U Value:	Window U Value: Calculation to BR443/GGF 2.3	**1.2 W/m²K**

BFRC
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
VISOGLIDE PLUS

System	Visoglide Plus
Finish	Polyester powder coated
U Value	up to 1.1 w/m²k 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/m²k with triple-glazing
Handles	Espag locking handles by ERA
Frame depth	70mm
Typical sight line	67.5mm
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	down to 1.0 w/m²k 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	down to 1.1 w/m²k using suitable triple-glazed unit
Security tested	PAS 24: 2022 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.

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