

Uniclass L3811+L411+L413:P43	EPIC C421+D11+D13:X46
CI/SfB (21.4)+(31.4)+(31.5)	
Xh4	

September 2007

sapa:

buildingsystem

ARCHITECTURAL ALUMINIUM SOLUTIONS



Dualframe 55mm Casement Windows

Technical Data Sheet

Sapa Building System

3	Design features
4	Performance data
6	Support services
7	Profile inertia values
9	General arrangements
10	Jamb/Vent - Mullion/Vent
11	Fixed Light Jamb - Mullion Vent/Vent
12	Head Vent - Transom Vent/Vent
13	Transom/Vent - Subcill/Vent
14	Subcill/Fixed Light - Subcill
15	Frame to Frame Coupler - Heavy Duty Frame to Frame Coupler
16	Lightweight Frame to Frame Coupler
17	Frame to Frame Expansion Coupler
18	90° External Corner post
19	90° Internal Corner Post
20	Extended Outerframe - Softline Vent
21	Heavy Duty Chamfered Vent - Heavy Duty Softline Vent
22	Head Extender for Trickle Ventilation - Trickle Vent through Frame
23	Open Out Curtain Wall Outerframe
24	66mm Wide Transom with Weatherbar
25	72mm Wide Transom with Weatherbar - 72mm Wide Transom
26	72mm Wide Mullion
27	Chamfered Internal Glaze Vent - Softline Internal Glaze Vent
28	Heavy Duty Internal Glaze Vent - Internal Glaze Dummy Vent
29	Sub Cills
30	Heavy Duty Coupling Box Mullion
31	Reverse Rebate Adaptor - Glaze Out
32	Reverse Rebate Adaptor - Glaze In
33	Bead Options

- **Contemporary Design:** Dualframe signifies a new era in aluminium fenestration, with products that have been specifically designed to comply with the ever increasing complexity of Building Regulations, British Standards and other regulatory demands.
 - **Superior thermal performance:** Dualframe comfortably exceeds the requirements of Part L 2006 of the Building Regulations (2006) for both thermal insulation and air permeability, and has been designed to be compliant with future anticipated changes. Where required, Dualframe 75 casement can achieve an 'A' Window Energy Rating.
 - **Dual colour capability:** All Dualframe products can have differing finishes internally and externally.
 - **Integrated design:** The Dualframe suite consists of casement, pivot, tilt/turn, sliding and reversible windows, single and double leaf doors and glazed roofing, all of which can be combined to form composite units.
 - **Unique polyamide thermal barrier:** With integral bead retention leg to minimise projection of opening lights (patent applied for).
 - **Accreditation:** Dualframe casement and tilt/turn windows have been awarded BSI Kitemarks to BS4873 'Specification for aluminium alloy windows' and BS7950 'Specification for enhanced security performance of casement and tilt/turn windows for domestic applications'.
- Dualframe doors have been awarded BSI PAS023-1 : 1999, 'General performance requirements for door assemblies; Part 1 - single leaf door assemblies to dwellings' and PAS024-1 : 1999 'enhanced security performance requirements for door assemblies; Part 1 - single leaf external door assemblies to dwellings'.
- Dualframe casement, tilt/turn windows and Dualframe doors meet the Secured by Design specification.
- Dualframe 75 casement can achieve an 'A' Window Energy Rating (WER) where required.
- **Choice of appearance:** Chamfered and Softline profiles are available to many products within the Dualframe suite, options of internal or external beading (including BS7950 compliant security) are also available.
 - **Ease of maintenance:** The integration of a 'Eurogroove' features enables use of industry standard hardware, available from a variety of sources so that the product is competitive and easily maintained.

■ Product

Dualframe 55mm outward opening side and top hung casement windows

■ Design Variants

Can be constructed to form fixed and opening lights either as combination frames or as separate coupled lights.

■ Compatibility

Can also be integrated with other products from the Dualframe range and with Sapa Elegance 52 curtain walling.

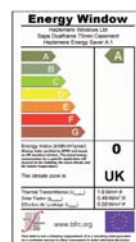
■ Application

Suitable for installation in new build or replacement projects in residential, commercial or public buildings.

■ Finishes

A wide range of polyester powder coat finishes is available to BS EN 12206:1 2004. Anodised finishes are to BS 3987 Grade AA25 etch silver with a range of special anodised finishes on application.

For more details, or to talk to a Project Consultant, contact the Marketing Department on 01684 853500.



Composition and Manufacture

Aluminium profiles are extruded from aluminium alloy 6063 or 6060 T6 complying with the recommendations of BS EN 755-9:2001.

Weatherstripping is polypropylene backed woven pile and polyurethane foam enclosed in a polythene sheath, set in undercut grooves in the sash.

The thermal barrier section is achieved using two separate aluminium extrusions and two polyamide extrusions mechanically jointed to form a single compound profile. (Except on some coupling mullions where a 'pour and cut' polyurethane resin thermal break is used).

Frame members are mitre cut at 45 degrees. Corners are reinforced with stainless steel corner ties and extruded aluminium corner cleats. All joints are sealed against water entry during fabrication.

Weather Performance

When tested in accordance with BS 6375: Part 1, all products listed in this data sheet, when manufactured, installed and glazed strictly to the details outlined in the Product Manual, will exceed exposure category '2400 Special'.

Opening Lights/Fixed Lights

Water Tightness 600 Pascals

Air Permeability 600 Pascals

Wind Resistance 2400 Pascals*

*Exposure category varies with Width/Height of window and mullion/transom used, as these are the only unsupported members. An accurate figure can be obtained using BS 6399: Part 2 calculations and the inertia values given in this Data Sheet.

Authority

BS 4873: Aluminium alloy windows

BS 6375-1: Performance of windows: Classification for weathertightness and guidance on selection and specification.

BS 6375-2: Performance of windows. Specification for operation and strength characteristics.

BS 7950: Specification for enhanced security performance of casement and tilt/turn windows for domestic applications.

BS 6262: Code of practice for glazing for buildings.

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

BS 3987: Specification for anodic oxide coatings on wrought aluminium for external architectural applications.

BS EN 12206:1 2004. Specification for powder organic coatings for application and stoving to aluminium alloy extrusions, sheet and perforated sections for external architectural purposes.

BS EN 10077-2: Thermal performance of windows, doors and shutters – Calculation of thermal transmittance – Part 2: Numerical method for frames.

Size Limitations**STANDARD CASEMENT Side Hung**

Stay Size	8"	12"	16"	Butt hinge
Max Width	400	600	700	700
Max Height	1200	1300	1300	1300
Max Weight	18kg	22kg	24kg	**
Min Width	301	22kg	24kg	**
Min Height	424	22kg	24kg	**

STANDARD CASEMENT Top Hung

Stay Size	6"	8"	10"	12"	16"	20"	24"	Butt hinge
Max Width	1200	1200	1200	1200	1200	1200	1200	1200
Max Height	300	350	400	550	750	1000	1200	1200
Max Weight	10kg	12kg	16kg	20kg	21kg	24kg	35kg	**
Min Width	424	424	424	424	424	424	424	424
Min Height	250	301	351	401	551	751	1001	**

HEAVY DUTY CASEMENT Side Hung

Stay Size	10"	16"	Butt Hinge
Max Width	660	838	838
Max Height	1524	1829	1829
Max Weight	38kg	47kg	**
Min Width	302	661	**
Min Height	424	424	424

HEAVY DUTY CASEMENT Top Hung

Stay Size	10"	12"	16"	22"	Butt Hinge
Max Width	1600	1600	1600	1600	1600*
Max Height	635	787	1090	1500	1500
Max Weight	37kg	45kg	55kg	75kg	**
Min Width	424	424	424	424	424
Min Height	302	636	788	1091	**

All sizes given are in millimetres, all maximum sizes relate to the overall size of the vent frame and not the outerframe.

** Butt Hinges - Each hinge will carry a maximum of 20Kg in both side hung and top hung applications. Where a top hung vent is hung from a transom, this figure should be reduced to 15Kg per hinge and the maximum width of the vent restricted to 1500mm.

Hardware and Security

The Dualframe casement window is available as standard with a multi-point locking system, comprising rods moving in opposing directions, with opposing centre cams and end shoot bolts operated by 'autolock' handles with key deadlocking.

Hinges as standard are stainless steel, projecting friction stays with optional restricted and egress variants.

Extruded aluminium butt hinges with stainless steel pins are available as an option.

Optional Vector Excluder hinge protectors must be used when enhanced security to BS7950 is required.

The Dualframe casement window system (in both externally and internally beaded formats), has been tested to BS7950 and BS 4873 in certain configurations, details upon request.

These butt hinges are primarily designed for use with folding openers, remote operating gear or electronic actuators. Where they are fitted in conjunction with epag gear or cockspur handles, suitable friction restrictors must also be used.

Note that a weatherbar must always be fitted over butt hinge opening lights, unless there is a soffit or similar to give protection. Therefore DF300 outerframe cannot be used where a soffit does not exist because the weatherbar cannot be fitted.

Other hardware specifications are available (eg for remote operation, trickle ventilators), consult Sapa Building Systems Ltd for details.

Glazing

Drainage in accordance with details listed in the Product Manual meets the requirements of 'Ventilated and Drained Glazing System', as specified in BS6262 for thickness and type. Insulating glass units of 24mm, 28mm and 32mm can be accommodated as standard, other depths can be accommodated on request.

Fixed/Opening Lights: Glass set against extruded synthetic rubber gaskets retained in undercut grooves within an aluminium bead profile. Final retention of the glass is achieved by the application of a co-extruded PVCu/ synthetic rubber wedge gasket between the inner face of the glass and the frame.

Thermal Performance

Dualframe 55mm can meet and surpass the area weighted average U values stipulated in Part L of the Building Regulations. Lower U-values can be achieved using double glazed units with enhanced thermal insulation, such as 'soft coat' low emissivity glass, argon gas filling and thermally broken spacer bars.

Site Work

A fabrication, installation and glazing service is available through a nationwide network of fabricators & installers. For details of suitable fabricators & installers, please contact our Marketing Department on 01684 853500.



- Our field based Project Consultants, working with our in-house Contracts Design and Administration team, provide UK specifiers with specialist advice concerning the correct application of products, giving guidance on Building Regulations, British Standards and other issues such as product specifications, usage, maintenance and safety. Complementary to this, our Product Support Department has an invaluable reservoir of experience on every aspect of our product range.
- We also appreciate that the specification process is influenced by client demands to obtain best value, and to that end, we can participate in site visits, design meetings and budgetary planning. Design stages can be formalised through written specification documents (which can be supplied in either an NBS format, or your own specification layout) and supported by samples, literature and drawings for consultation or planning issues.
- Taking this partnership approach through the whole project allows on-site monitoring of manufacturing and installation ensuring the specifier always has professional support from a worldwide group. Drawing on one of the largest fabricator and installer networks in the UK, we can provide details of specialist contractors who will quote or tender competitively for any type of contract.
- For specification assistance or details of fabricators & installers, please call our Marketing Department on 01684 853500.

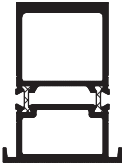
■ Sapa Group

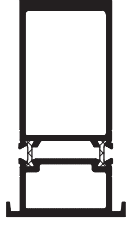
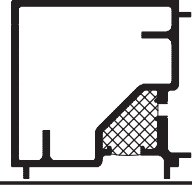
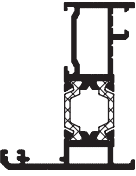
Sapa Building Systems Limited is a member of the worldwide Sapa Group. We develop and market high value-added profiles in aluminium and are the leading independent producer of aluminium profiles in the world, with customers in Europe, North America and Asia. In the UK, the Sapa Group has extensive multi-site extruding, re-melt, anodising and polyester powder coating facilities, offering total control and a fast and co-operative response.

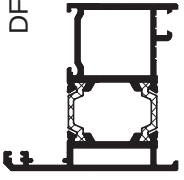
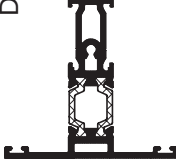
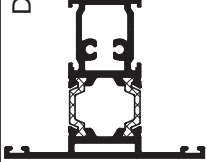
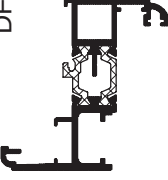
Backed by the resources of the Group, Sapa Building Systems Limited offers architects and specifiers a wide range of innovative aluminium systems for curtain walling, doors, windows and specialist applications. With a wealth of European knowledge and experience our company incorporates the highly respected Glostal, Monarch and RC System brands that have satisfied the demands of specifiers for over four decades. Our company systems have been approved under BS EN ISO 9001:2000 and we have been recognised as an Investor in People for over three years.

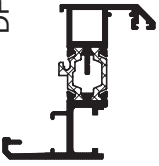
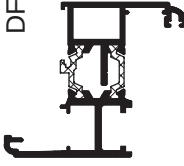
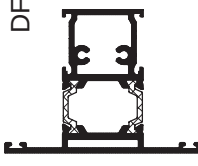
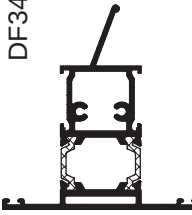
PROFILE INERTIA VALUES

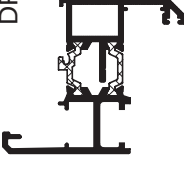
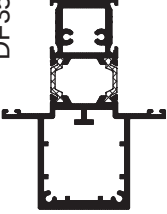
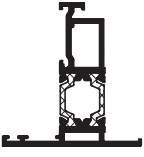
This page and the previous page gives information on the inertia values of framing and coupling profiles. BS6399 Part 2 must be used to calculate the inertia required.

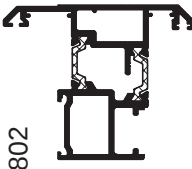
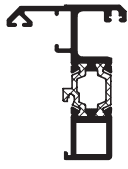
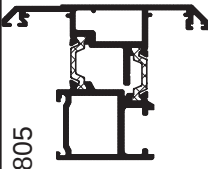
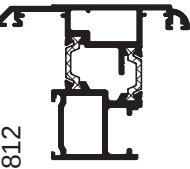
Profile	Inertia (mm ⁴)	
 16021	↓	53,629
	↓	9,051
 16022	↓	378,702
	↓	49,252
 16023	↓	154,527
	↓	27,187
 172/A/171	↓	394,519
	↓	143,922

Profile	Inertia (mm ⁴)	
 173/A/171	↓	843,547
	↓	180,056
 DF187	↓	231,768
	↓	243,324
 DF268	↓	18,460
	↓	6,156
 DF300	↓	100,248
	↓	23,553

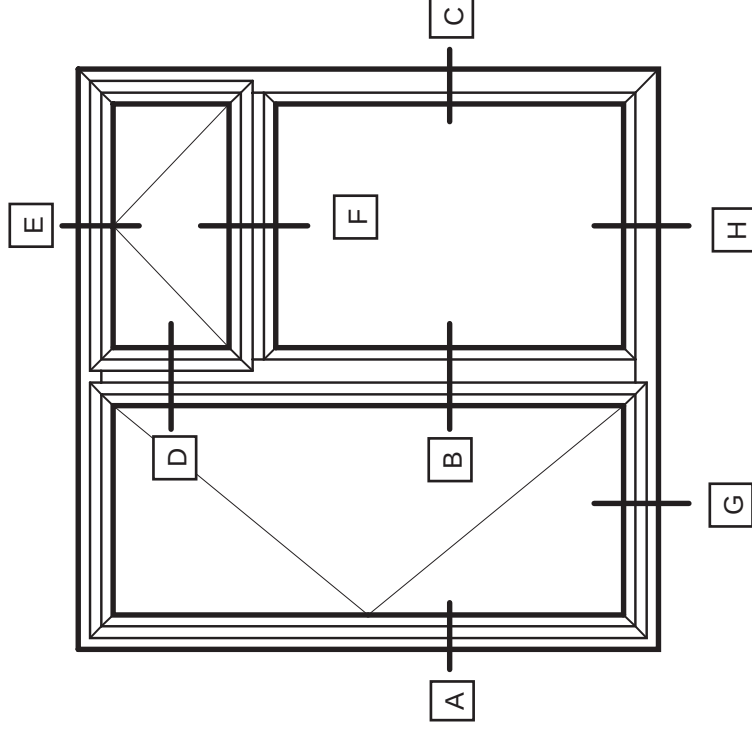
Profile	Inertia (mm ⁴)	
 DF301	↓	129,455
	↓	61,772
 DF320	↓	85,995
	↓	22,691
 DF328	↓	107,515
	↓	44,548
 DF330	↓	117,421
	↓	40,966

Profile	Inertia (mm ⁴)	
 DF332		118,199
		41,405
 DF334		142,095
		69,498
 DF340		120,641
		65,961
 DF349		173,981
		66,292

Profile	Inertia (mm ⁴)	
 DF350		142,701
		69,926
 DF353		598,719
		166,866
 DF708		54,319
		2,150
 DF709		134,415
		10,267
 DF736		78,107
		19,683

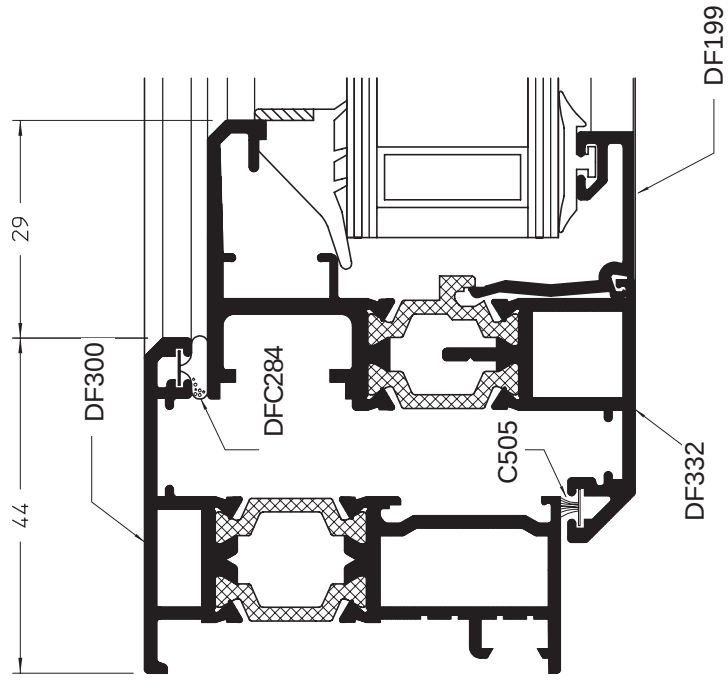
Profile	Inertia (mm ⁴)	
 DF802		136,837
		109,723
 DF803		90,419
		27,858
 DF805		148,891
		132,371
 DF812		136,603
		109,650
		
		

Detail	Elevation	Page
A	Jamb/Vent - Mullion/Vent	10
B	Fixed Light Jamb - Mullion Vent/Vent	11
C	Head Vent - Transom Vent/Vent	12
D	Transom/Vent - Subcill/Vent	13
E	Subcill/Fixed Light - Subcill	14
F	Frame to Frame Coupler - Heavy Duty Frame to Frame Coupler	15
G	Lightweight Frame to Frame Coupler	16
H	Frame to Frame Expansion Coupler	17
	90° External Corner post	18
	90° Internal Corner Post	19
	Extended Outerframe - Softline Vent	20
	Heavy Duty Chamfered Vent - Heavy Duty Softline Vent	21
	Head Extender for Trickle Ventilation - Trickle Vent through Frame	22
	Open Out Curtain Wall Outerframe	23
	66mm Wide Transom with Weatherbar	24
	72mm Wide Transom with Weatherbar - 72mm Wide Transom	25
	72mm Wide Mullion	26
	Chamfered Internal Glaze Vent	27
	Softline Internal Glaze Dummy Vent	27
	Heavy Duty Internal Glaze Vent - Internal Glaze Dummy Vent	28
	Sub Cills	29
	Heavy Duty Coupling Box Mullion	30
	Reverse Rebate Adaptor - Glaze Out	31
	Reverse Rebate Adaptor - Glaze In	32

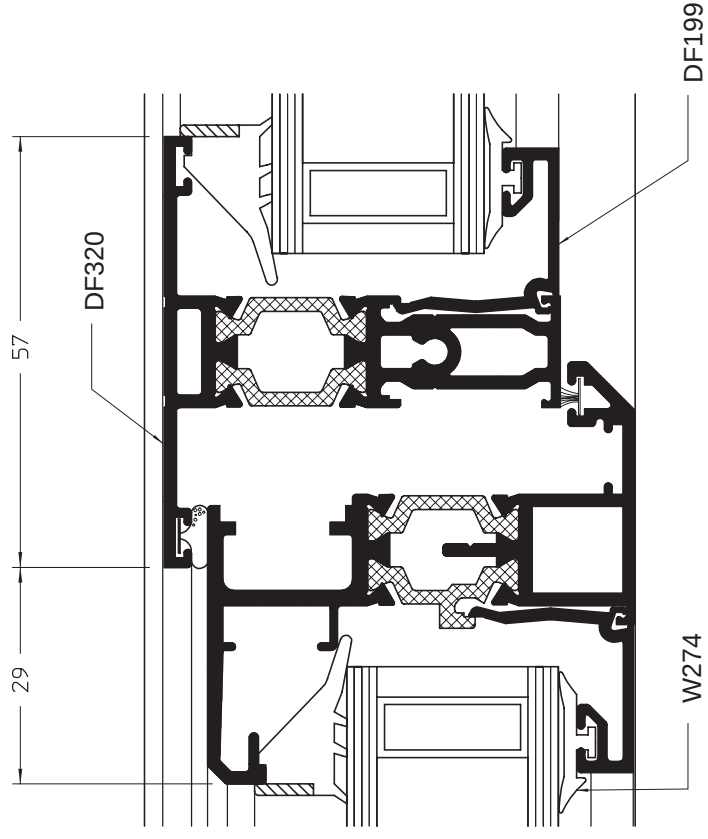


These drawings illustrate a number of the available profile combinations. Other combinations are available please consult Sapa Building Systems for further details.

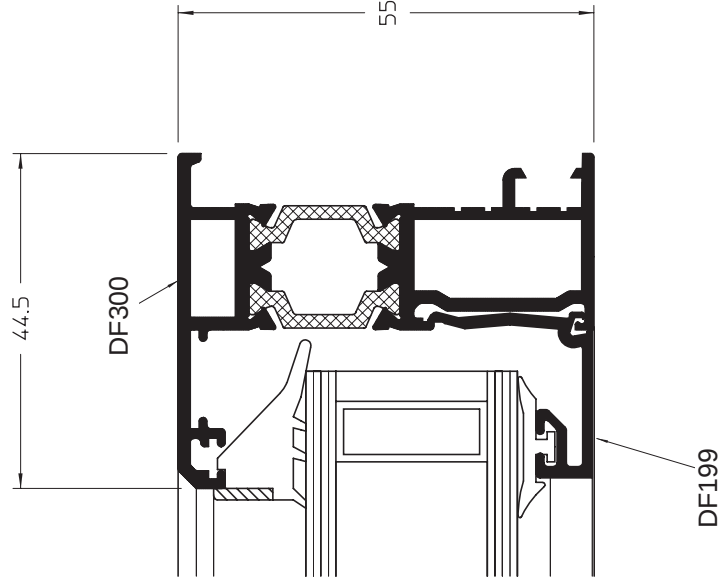
A Jamb / Vent



B Mullion / Vent



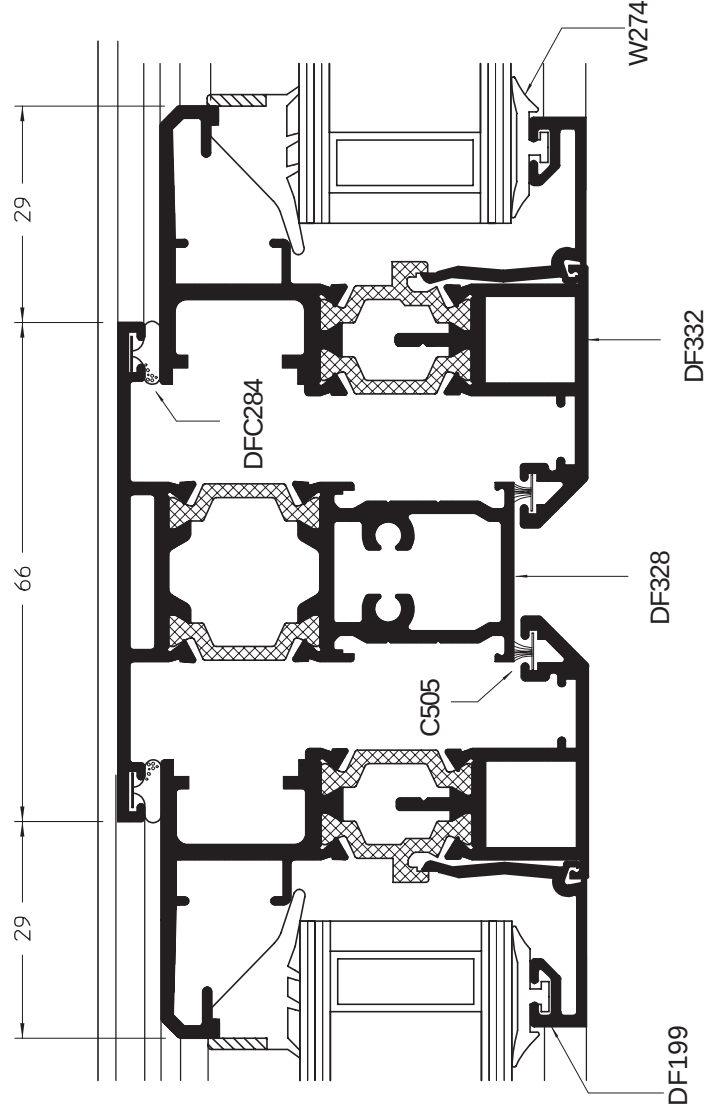
C Fixed Light Jamb



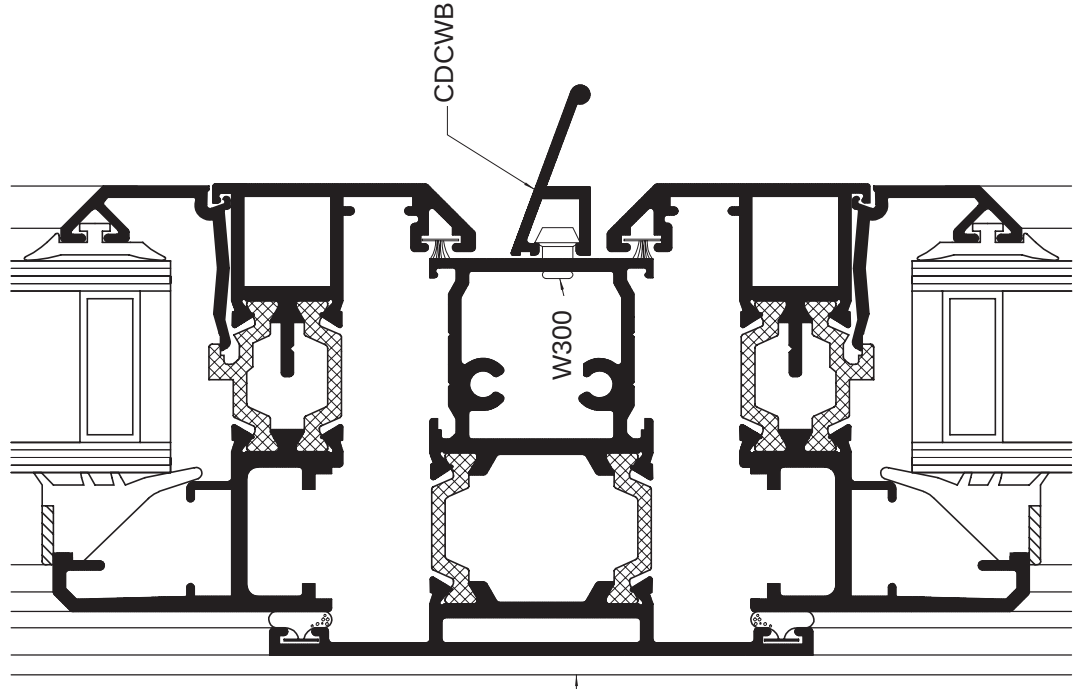
D Mullion Vent / Vent

Note:-

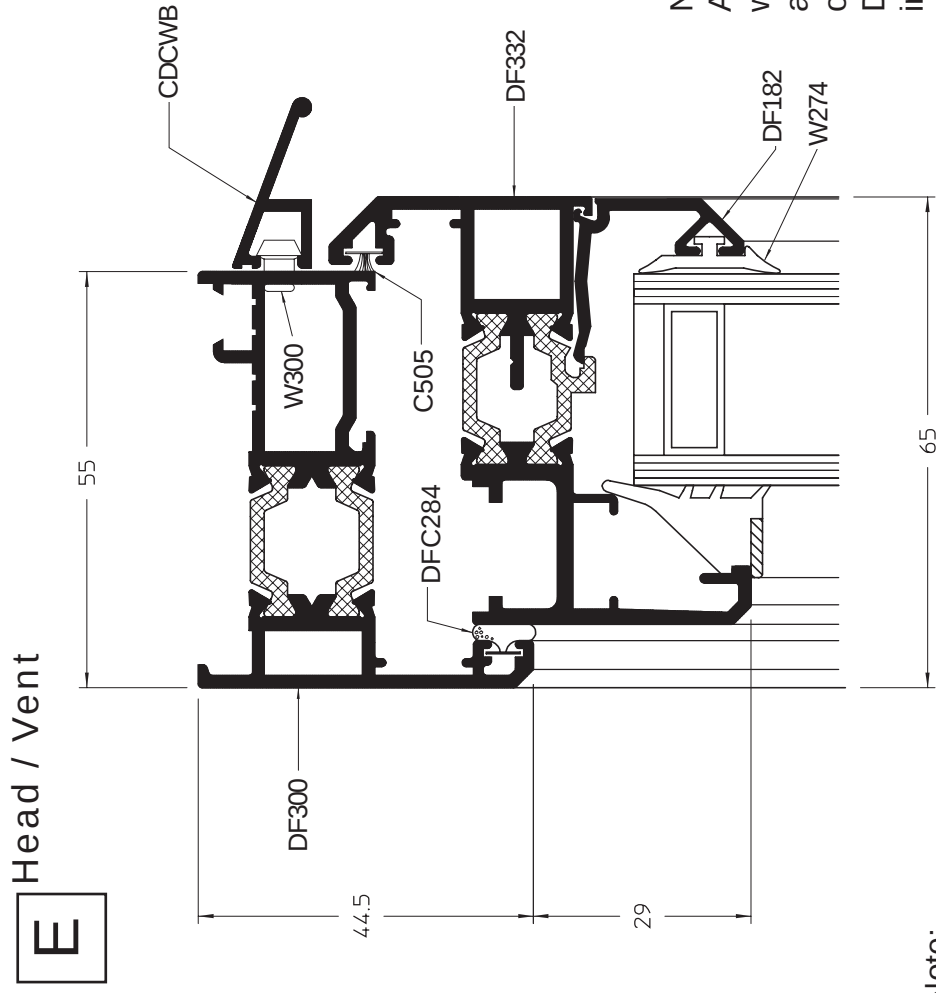
57mm Mullion/Transom DF320 must not be used with a vent on both sides.



Transom Vent/Vent

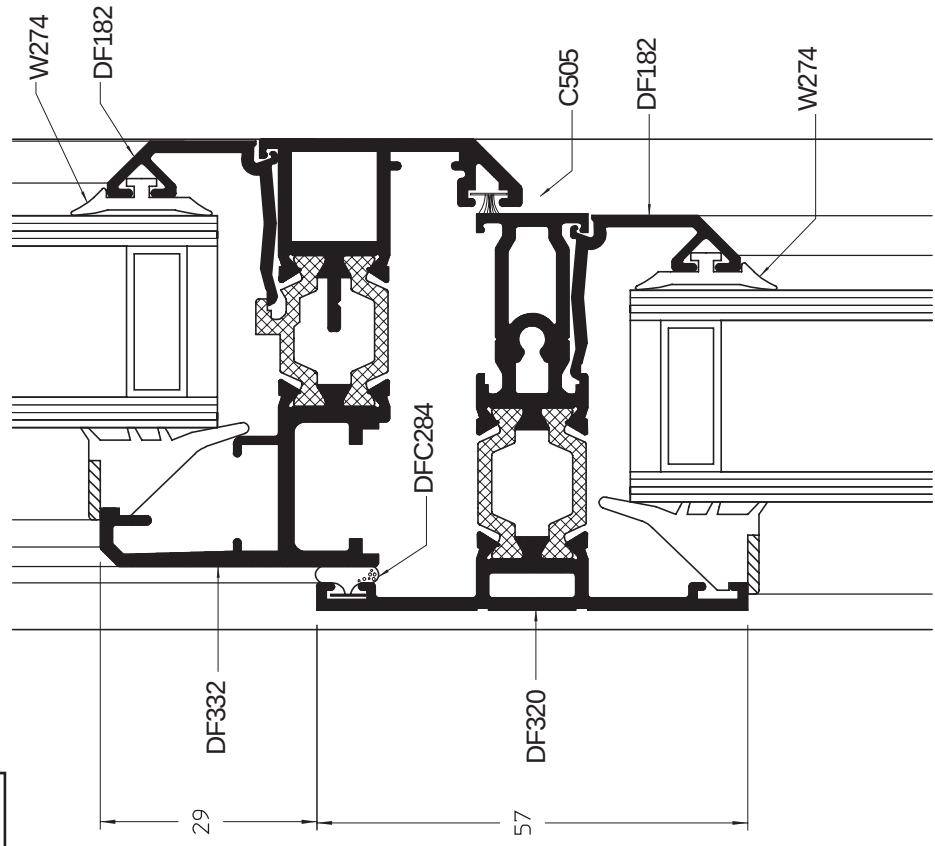


Note:-
A weatherbar or transom with drip, must be fitted above all casement opening lights. Transom DF320 is not to be used immediately above an opening light as there is no room to fit a weatherbar.

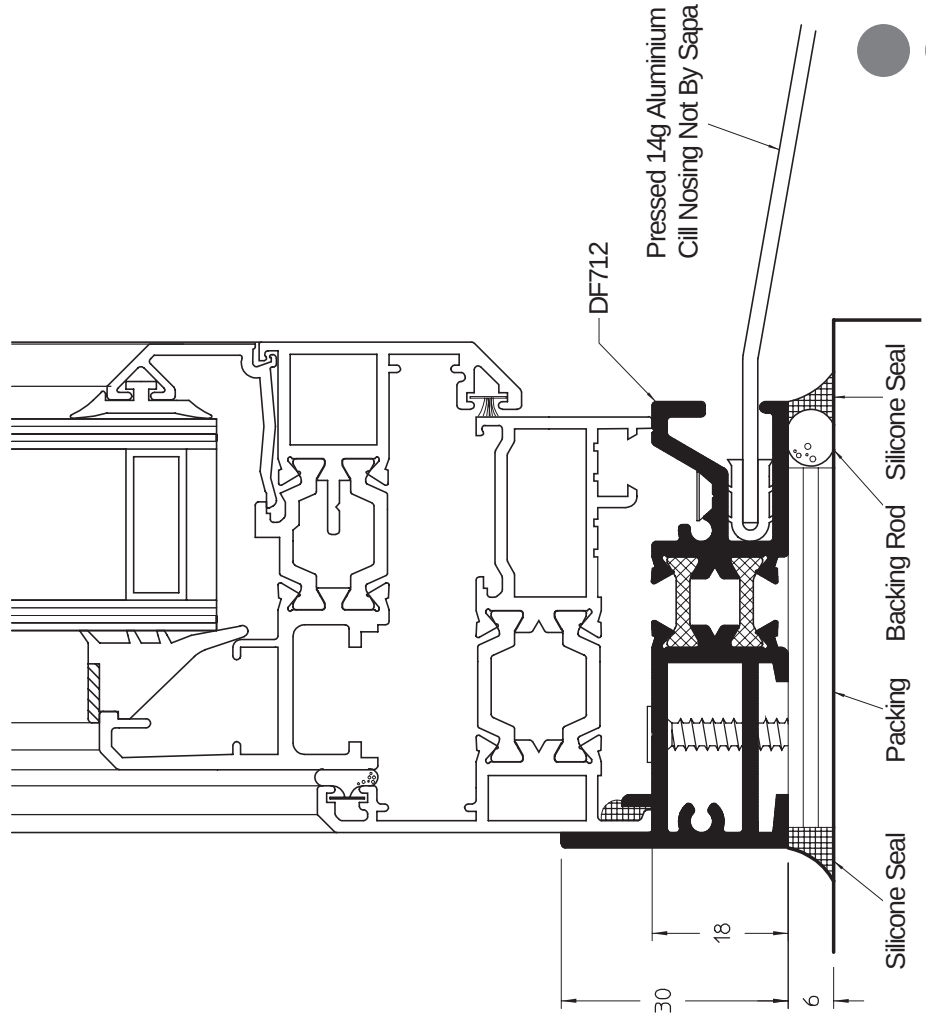


Note:-
A weatherbar must be fitted above all casement opening lights, except where the window is protected by a structural overhang at the head.

F Transom / Vent



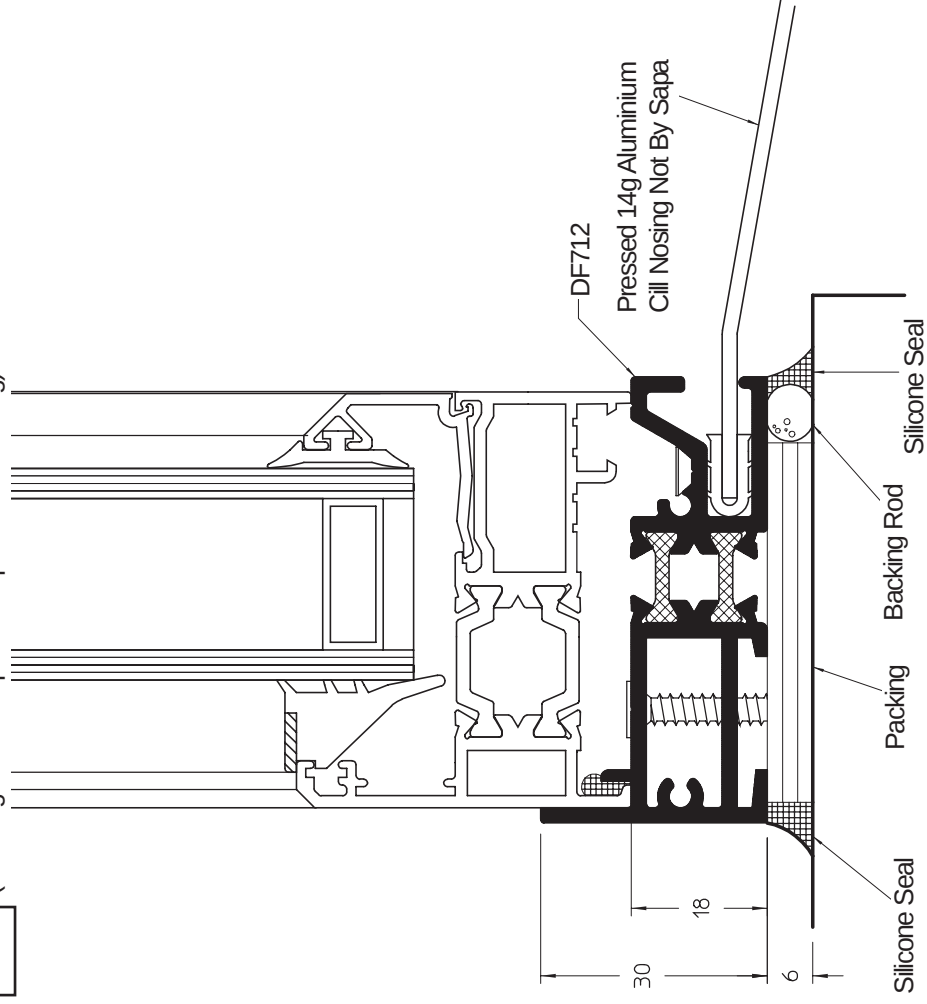
G Subcill / Vent



Subcill / Fixed Light

H

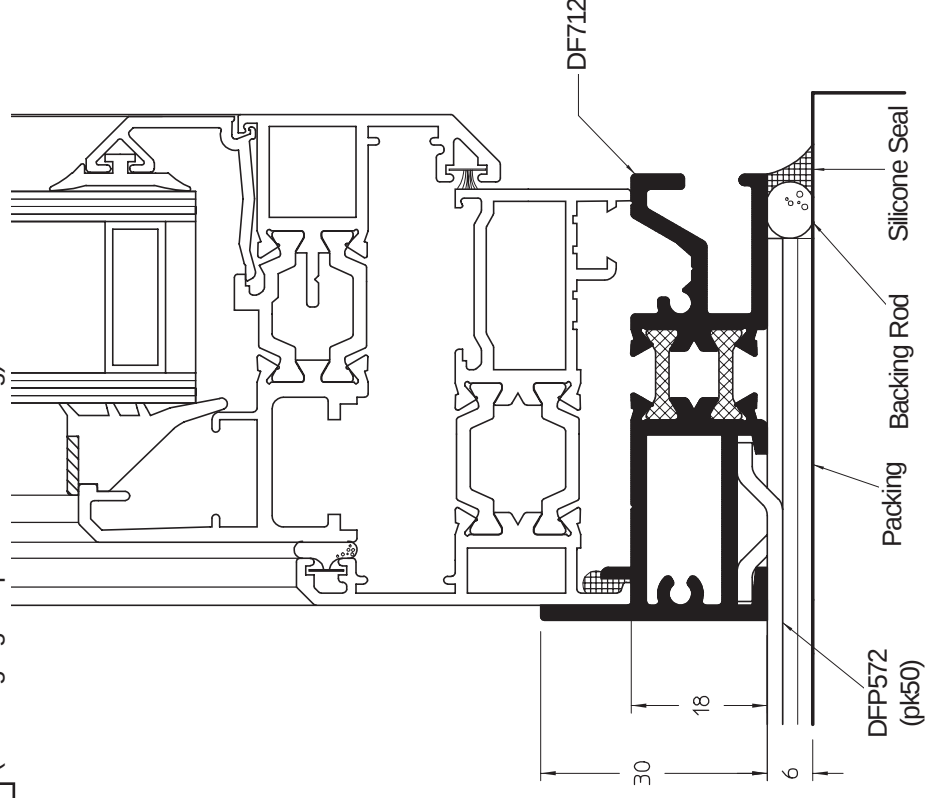
(Showing direct fix option and pressed cill nosing)



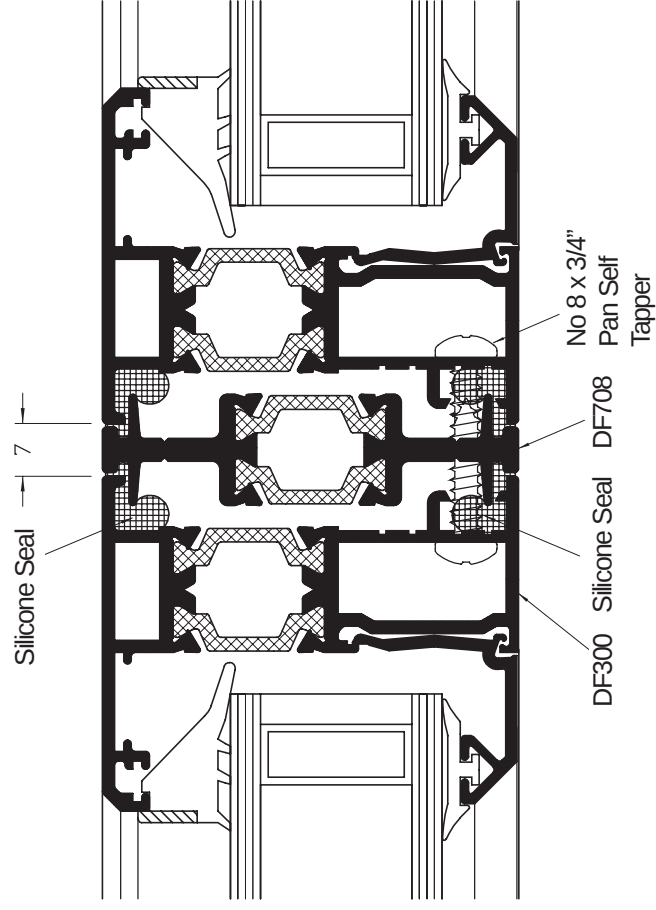
Subcill

H

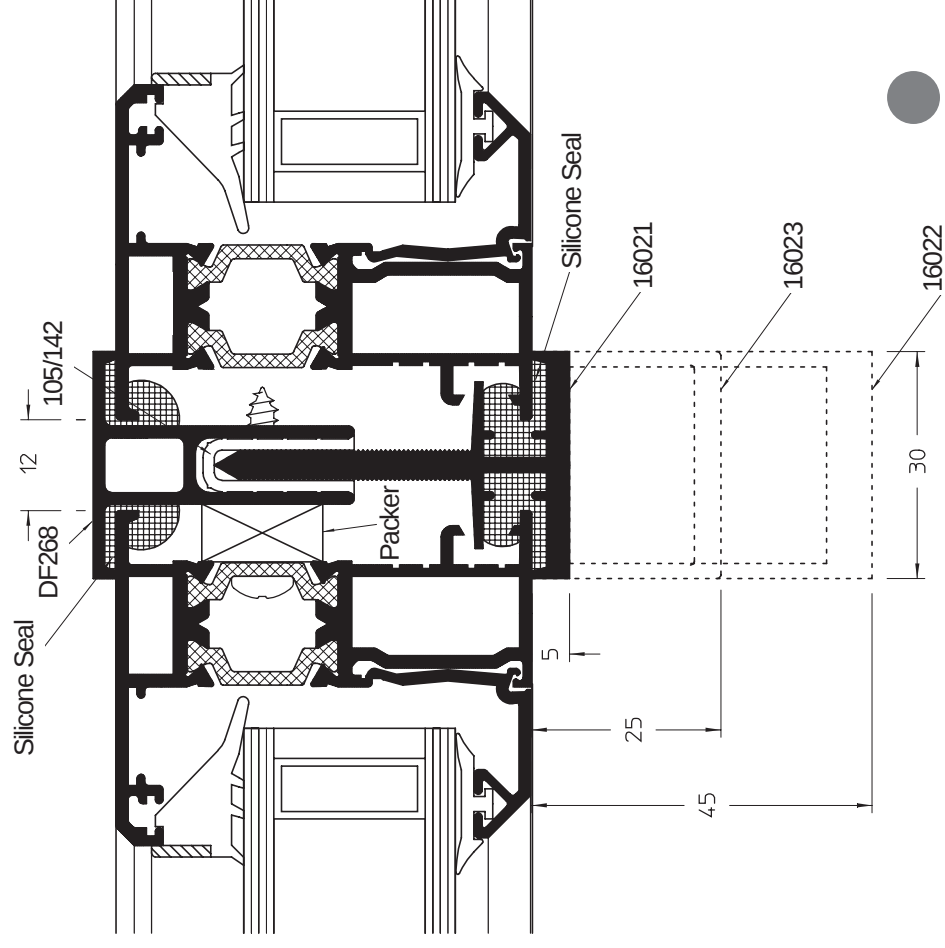
(Showing lug fix option without nosing)



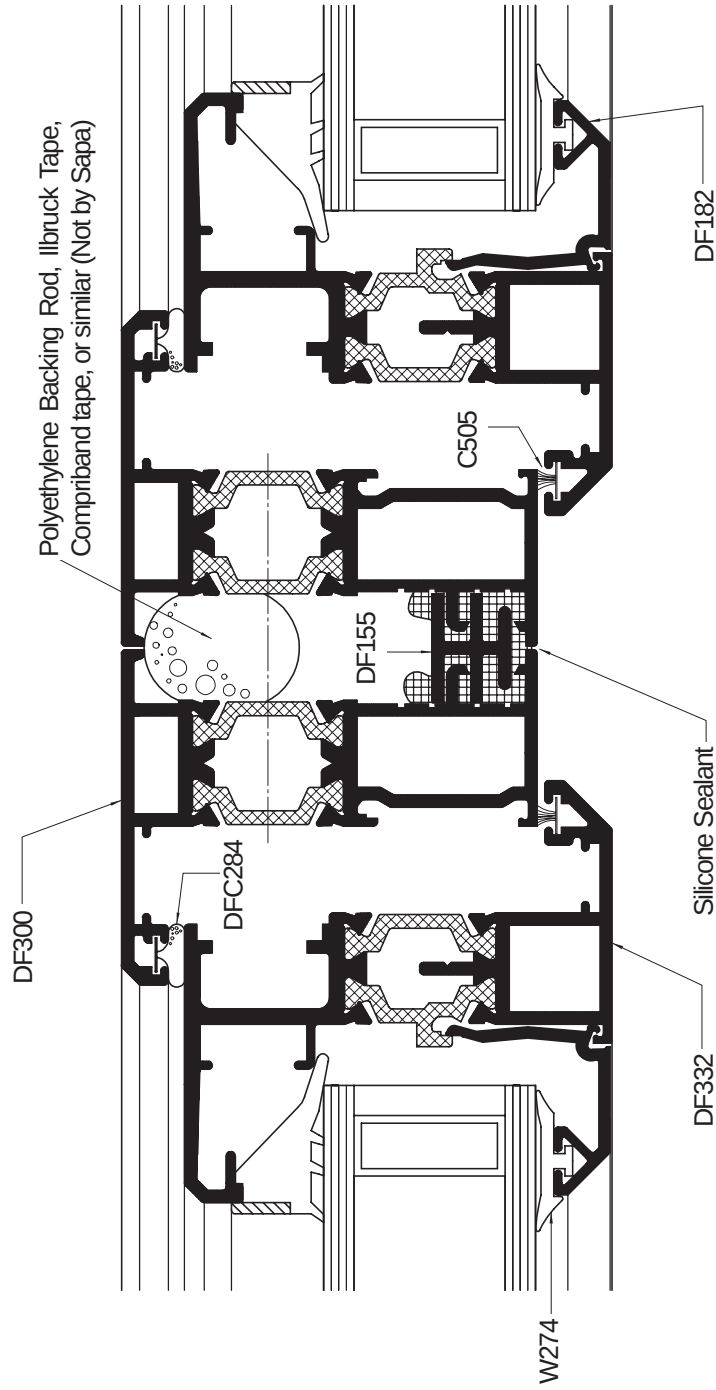
Frame To Frame Coupler



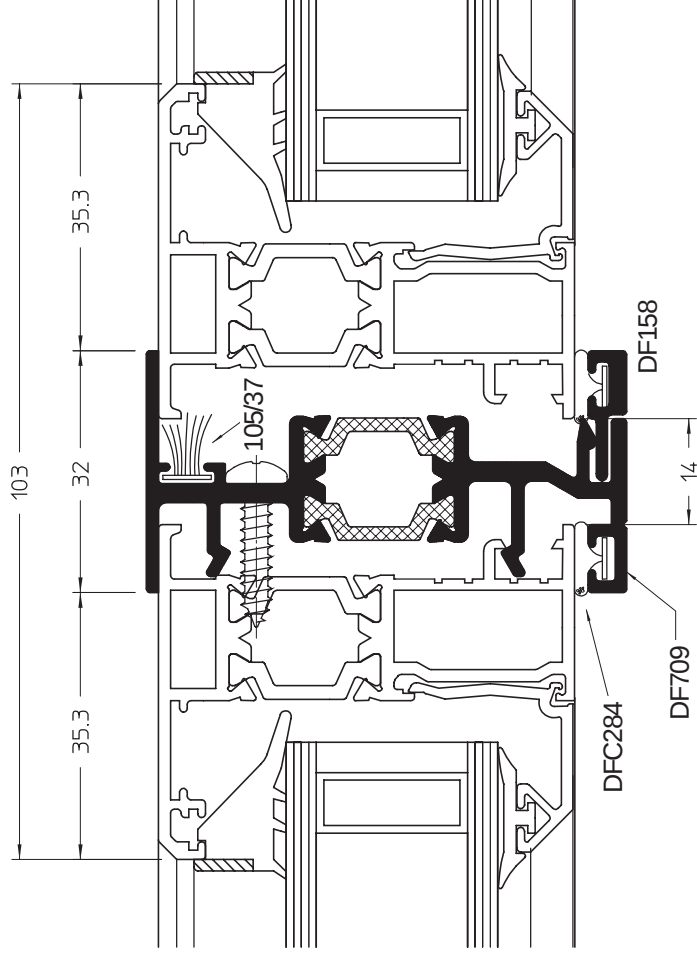
Heavy Duty Frame To Frame Coupler



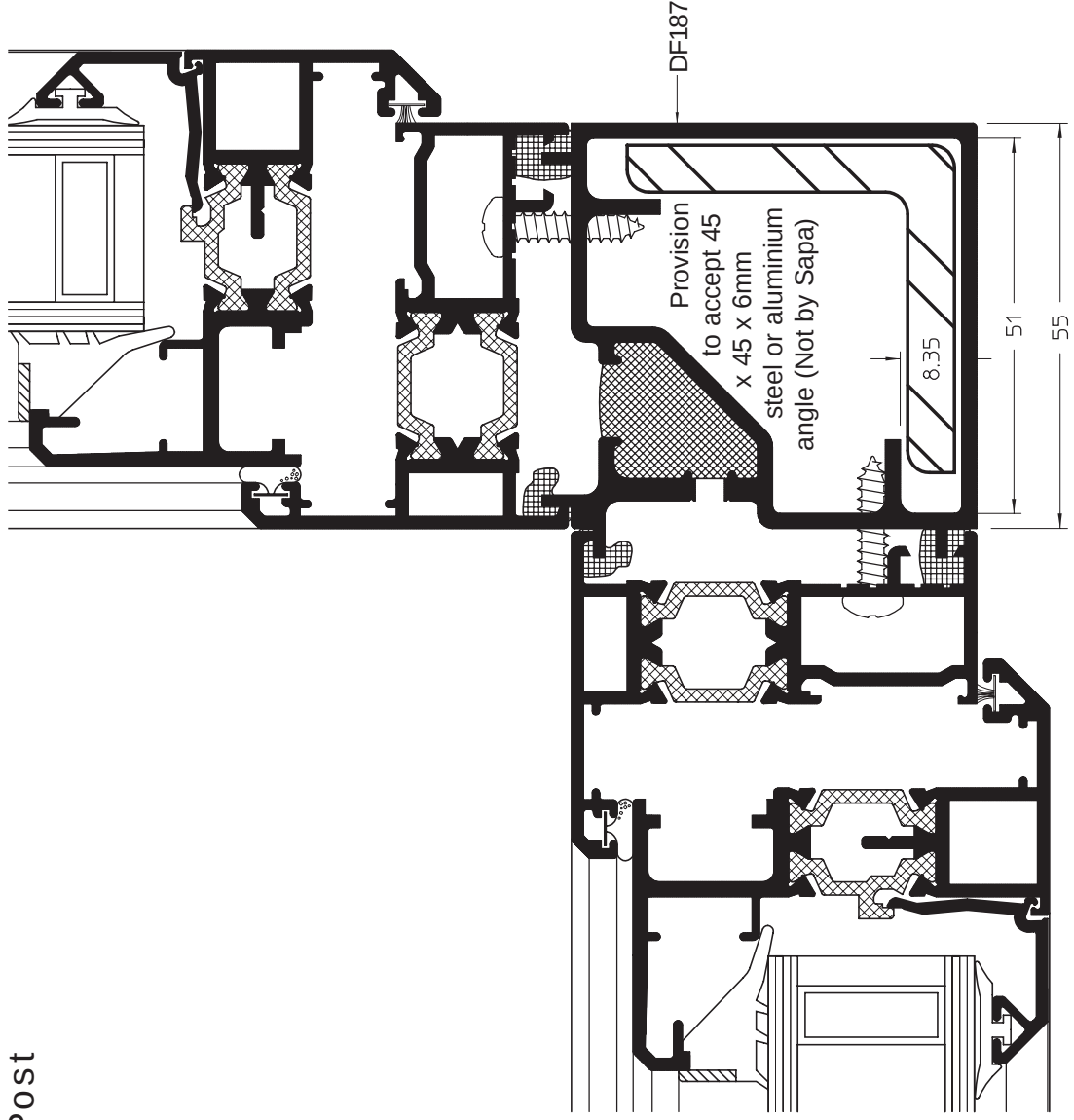
Lightweight Frame to Frame Coupler



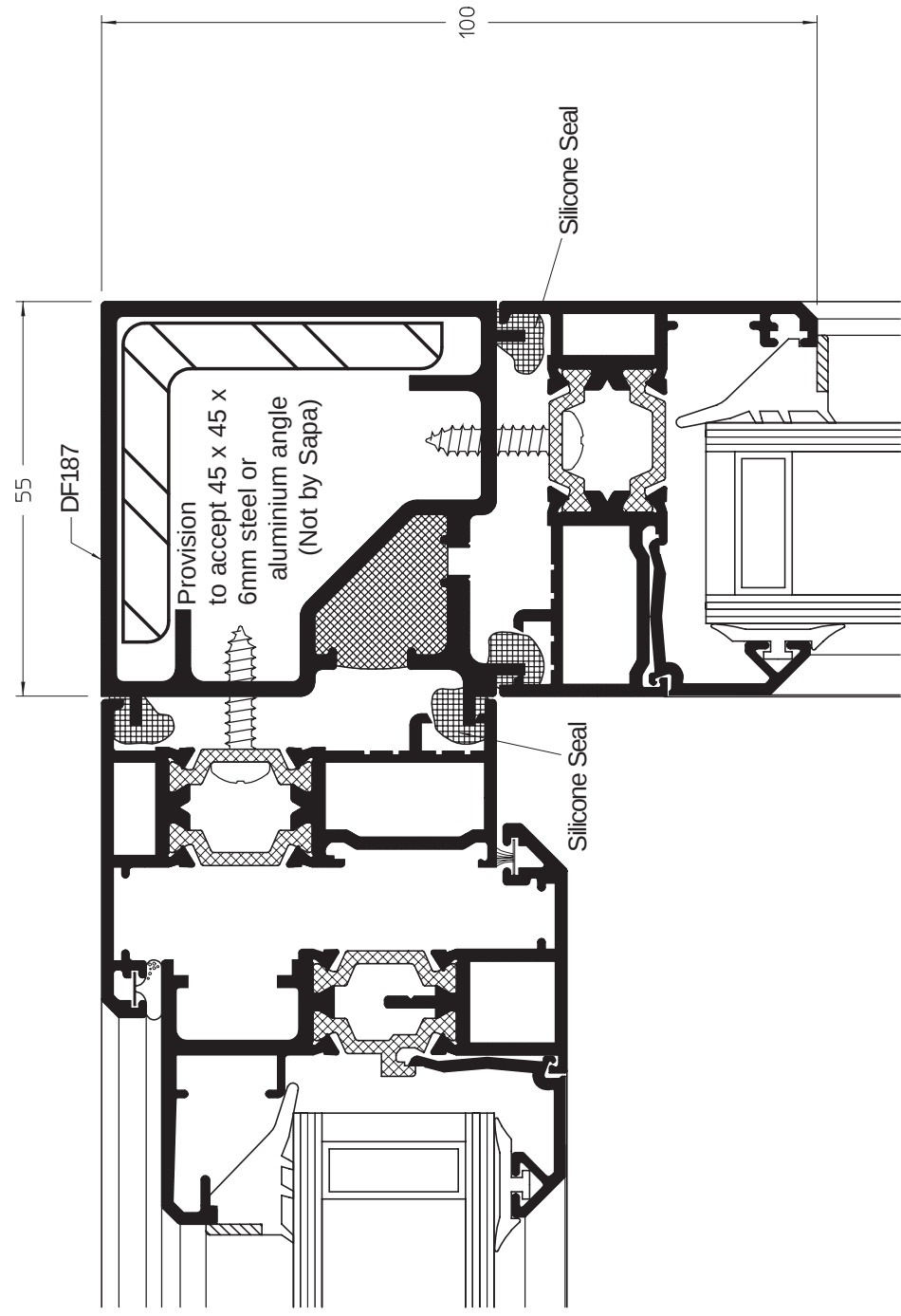
Frame to frame expansion coupler



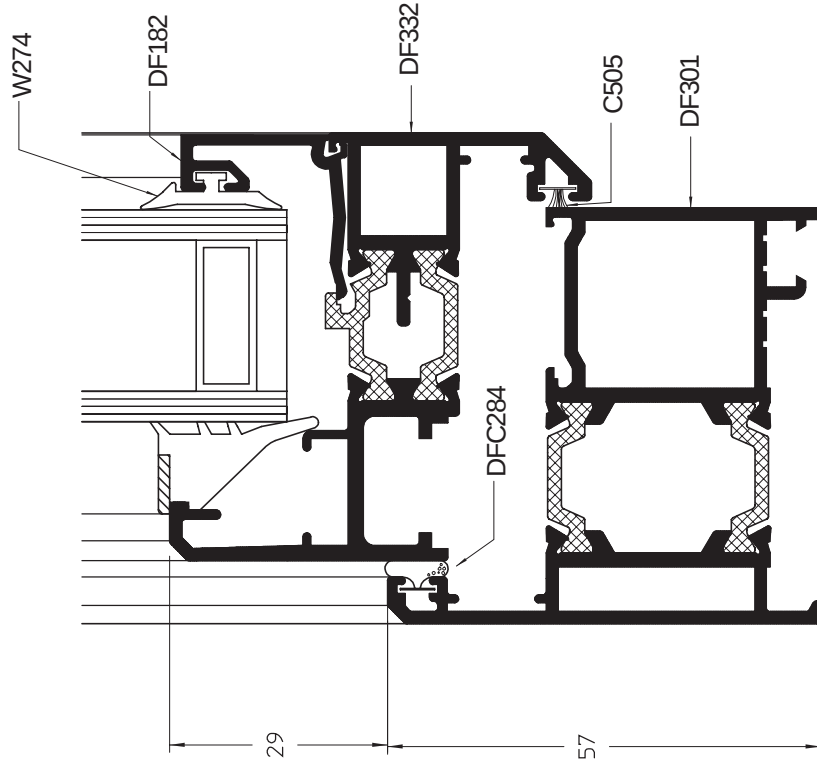
90° External Corner Post



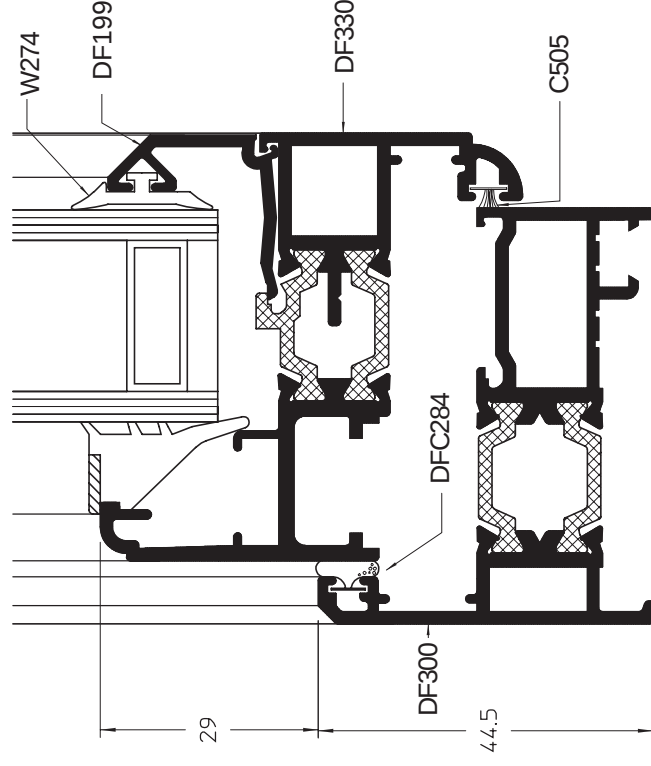
90° Internal Corner Post



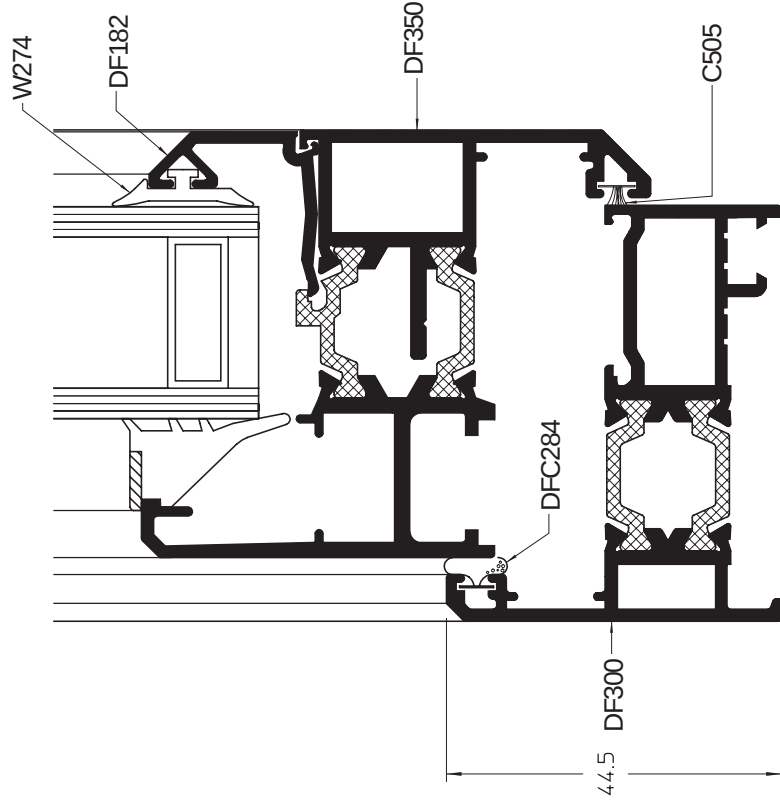
Extended Outerframe



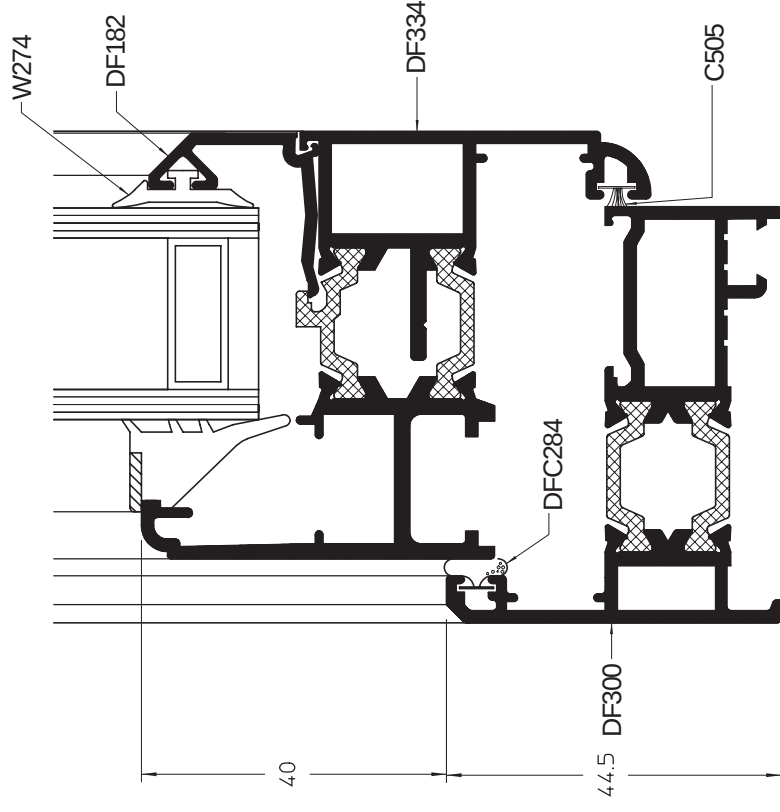
Softline Vent



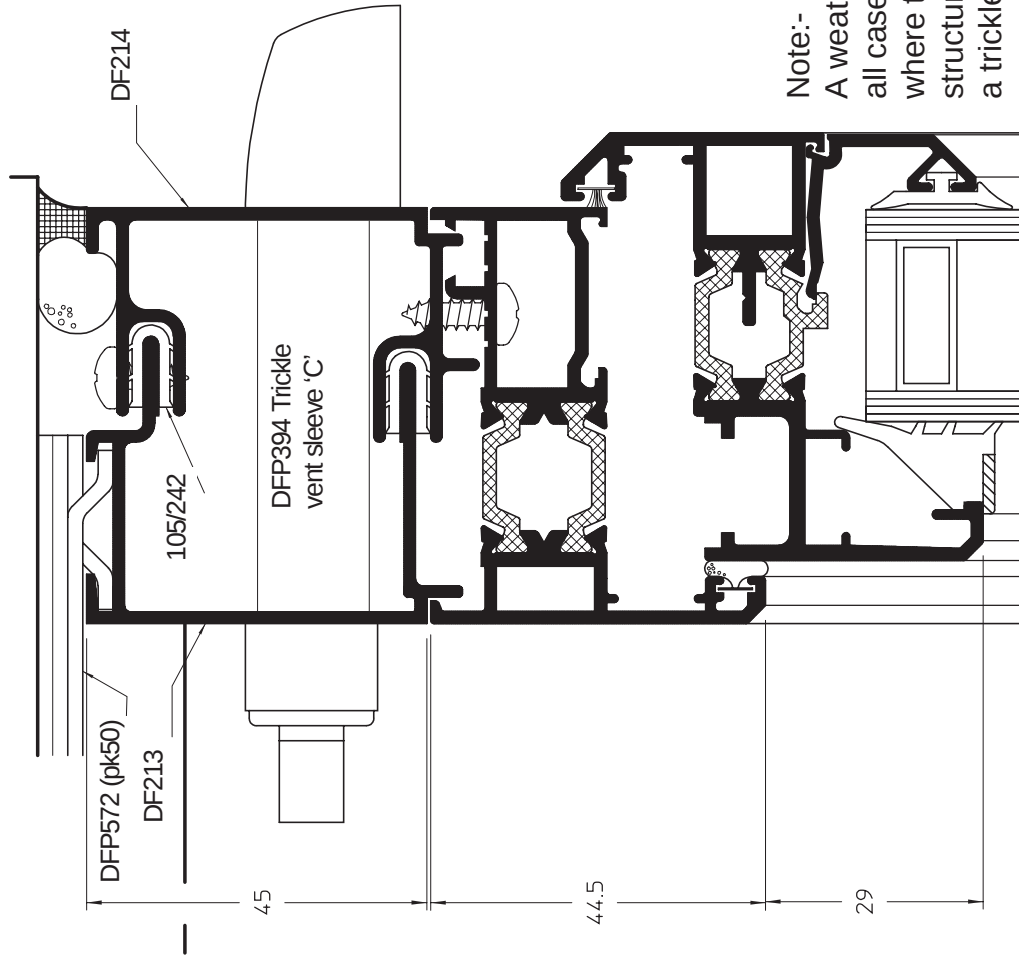
Heavy Duty Chamfered Vent



Heavy Duty Softline Vent

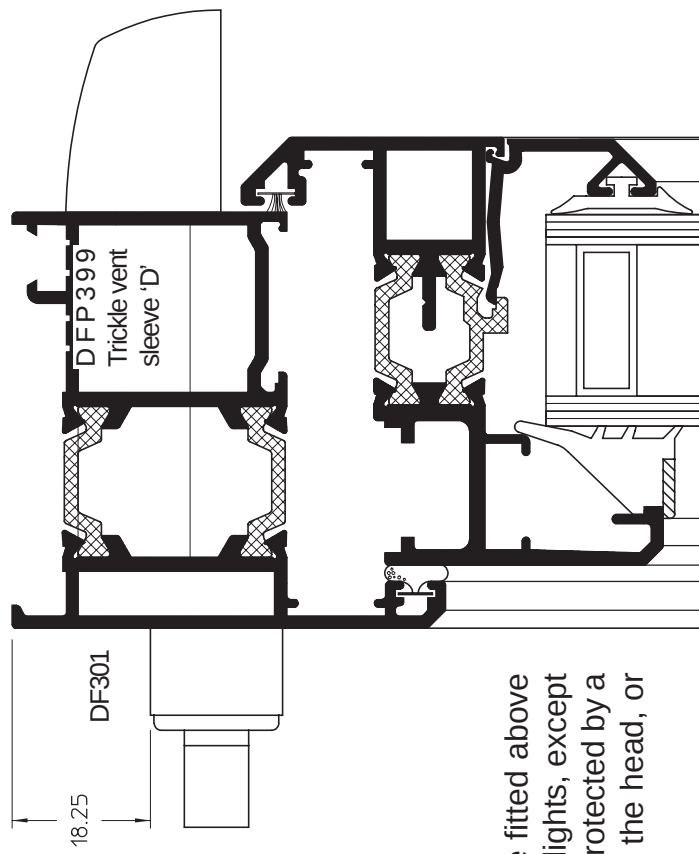


Head Extender for Trickle Ventilation

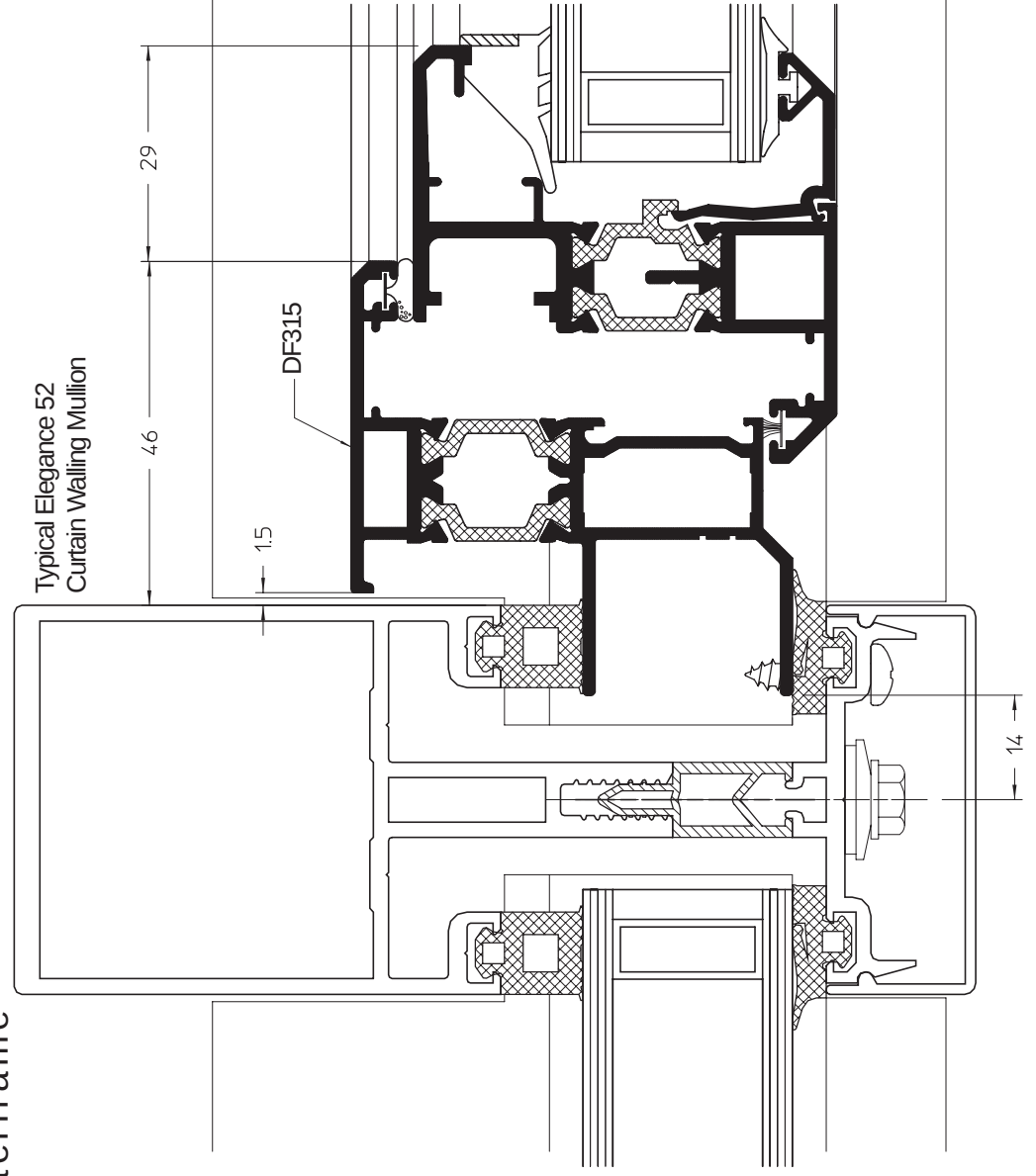


Trickle Vent trough Frame

Note that when using this option, the total free air through the trickle vent is reduced to 2000mm² each.



Open Out Curtain Wall Outerframe

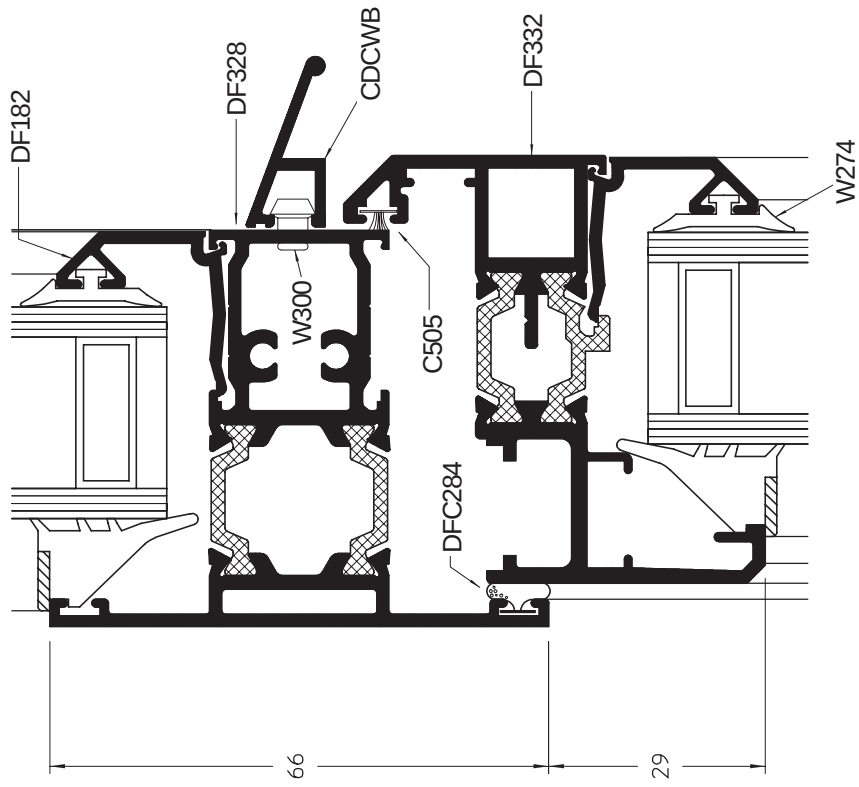


55mm Casement Window

DUALFRAME

GENERAL ARRANGEMENTS

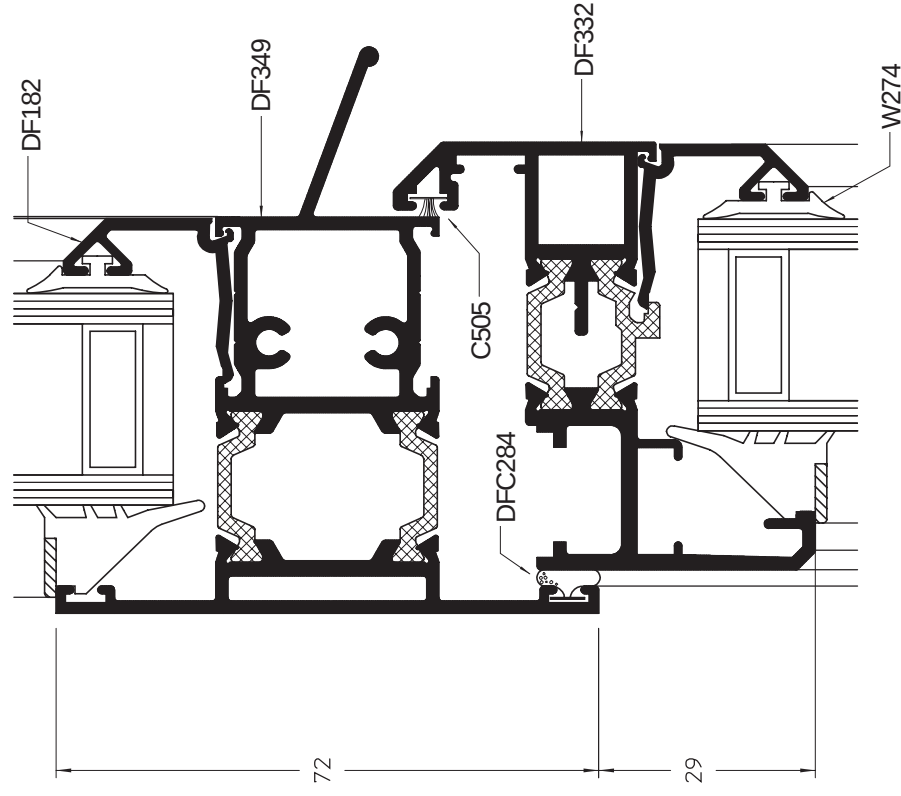
66mm Wide Transom with Weatherbar



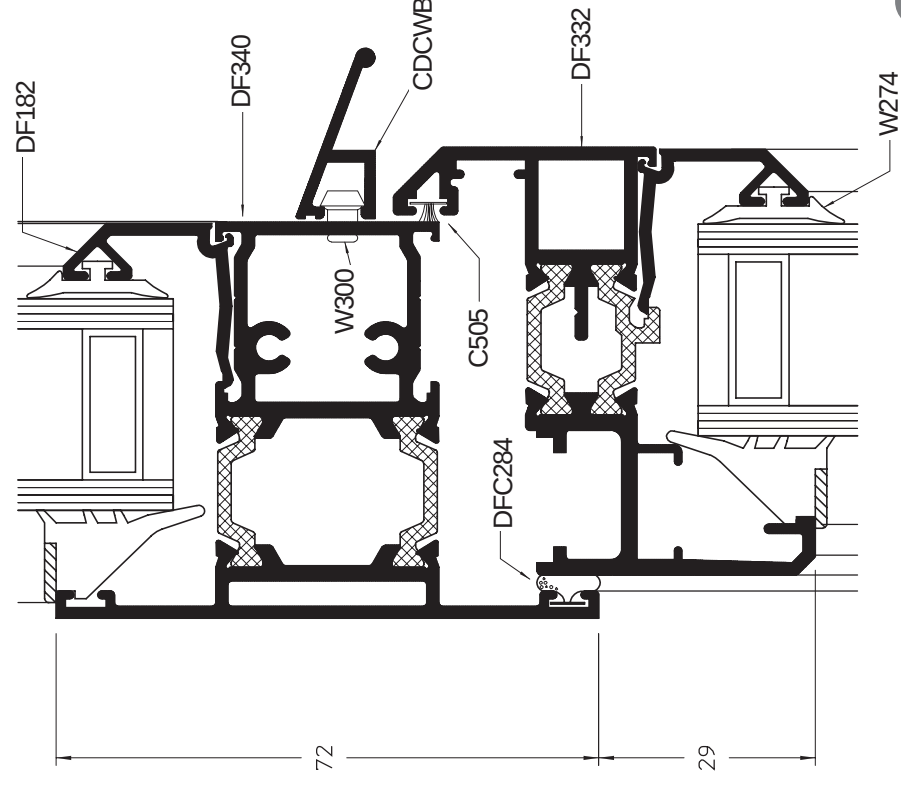
Note:-
Only use DF349 when a casement is fitted both sides of a transom.

Note:-
A weatherbar or transom with drip, must be fitted above all casement opening lights. Transom DF320 is not to be used immediately above an opening light as there is no room to fit a weatherbar.

72mm Wide Transom with Weather Bar

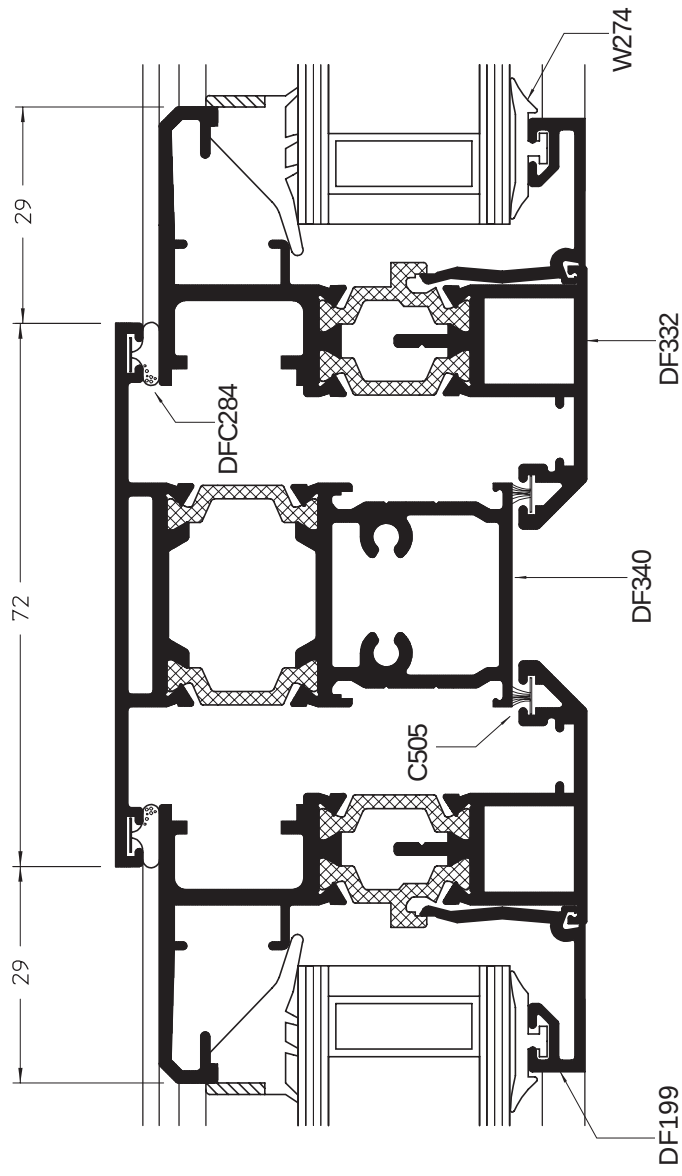


72mm Wide Transom

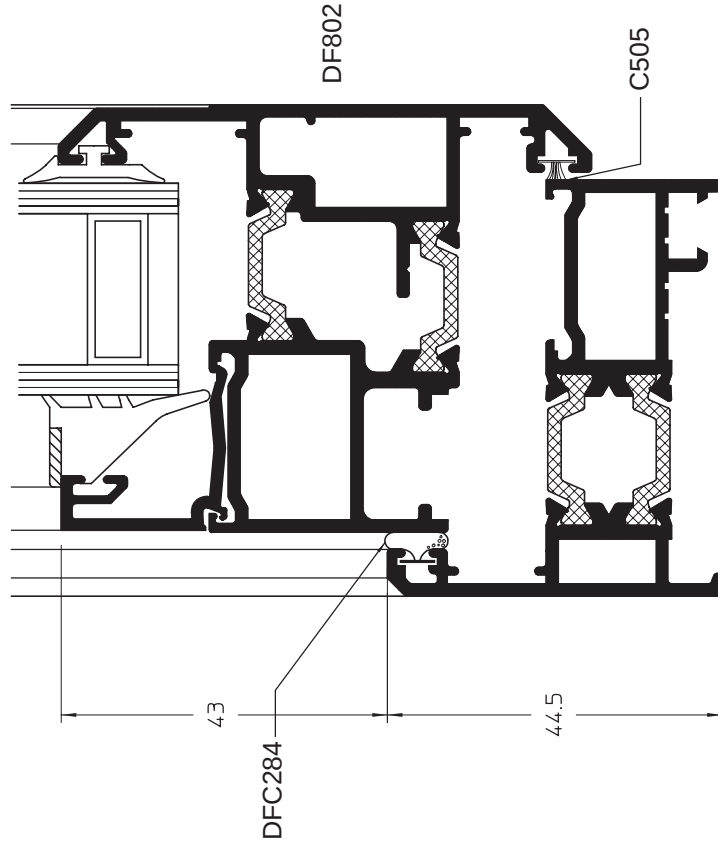


Note:-
A weatherbar or transom with drip, must be fitted above all casement opening lights. Transom DF320 is not to be used immediately above an opening light as there is no room to fit a weatherbar.

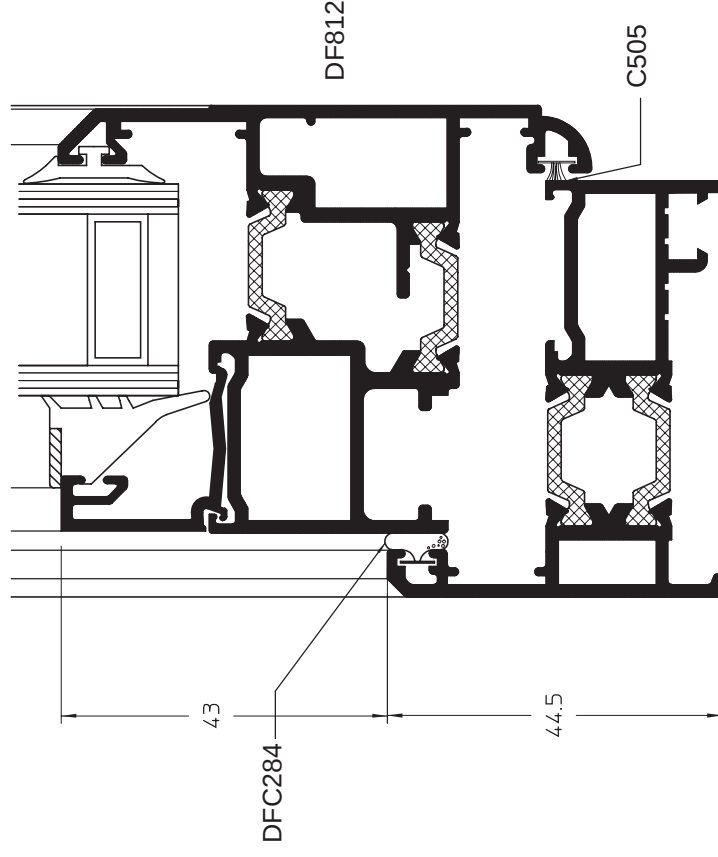
72mm Wide Mullion



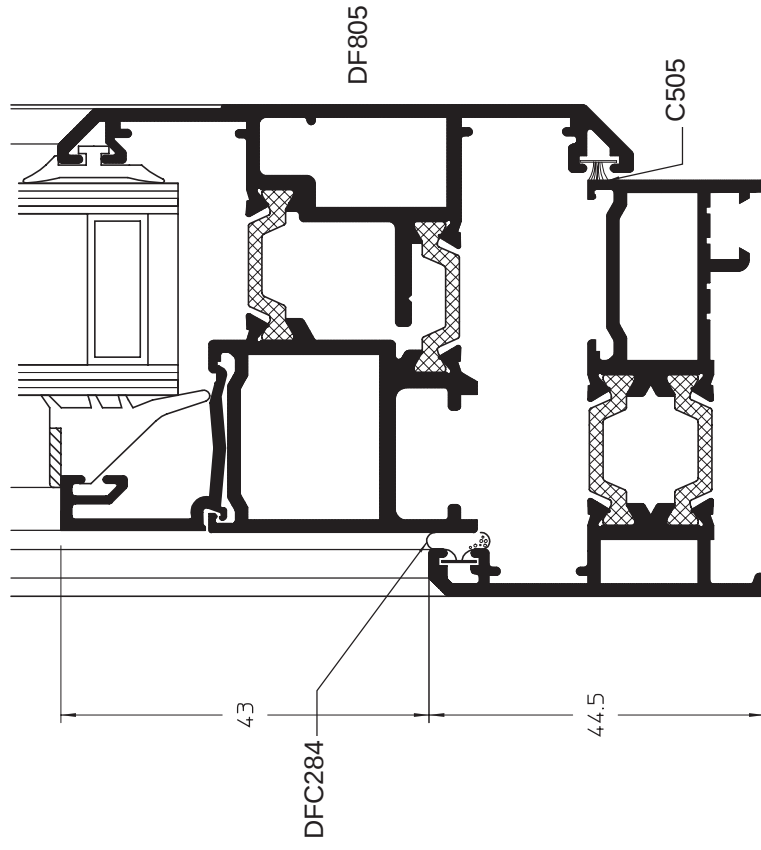
Chamfered Internal Glaze Vent



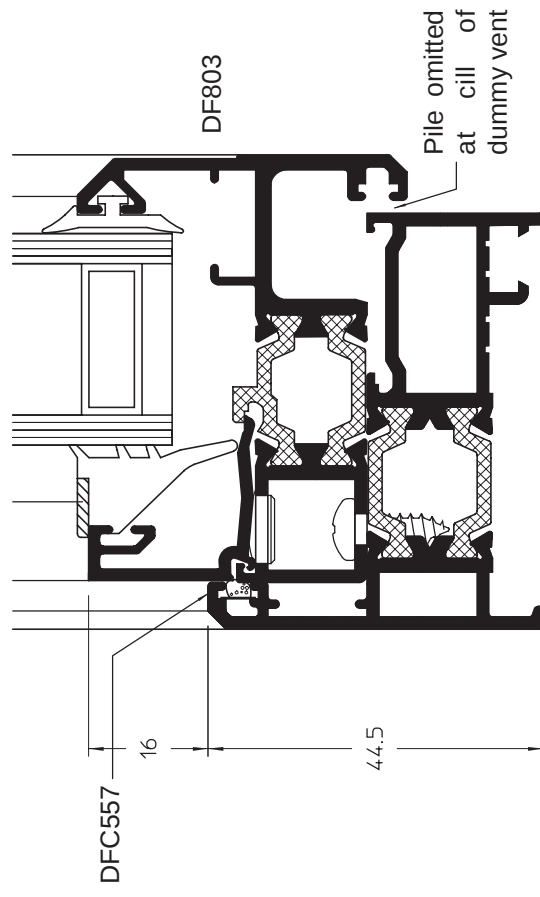
Softline Internal Glaze Vent



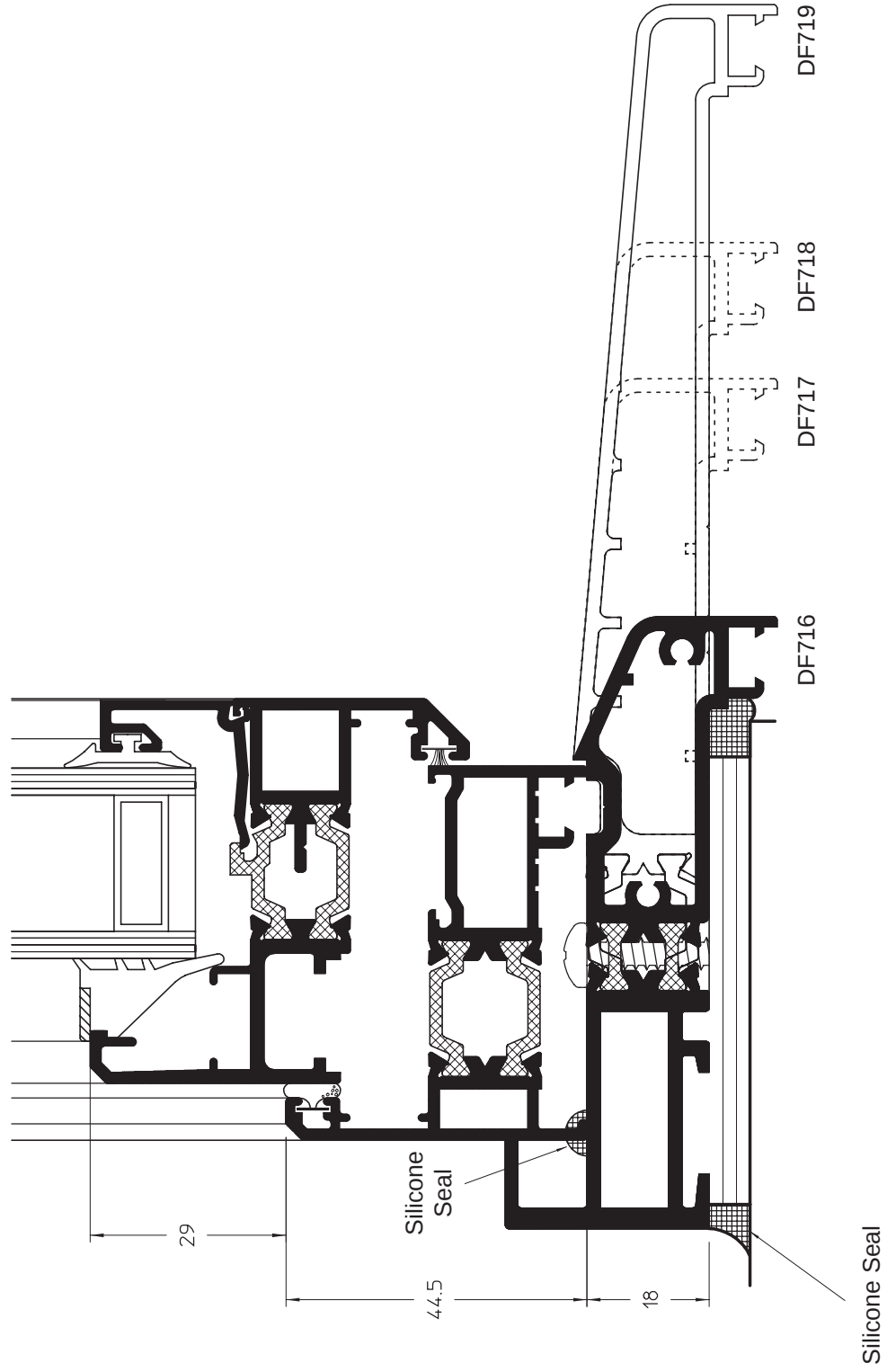
Heavy Duty Internal Glaze Vent



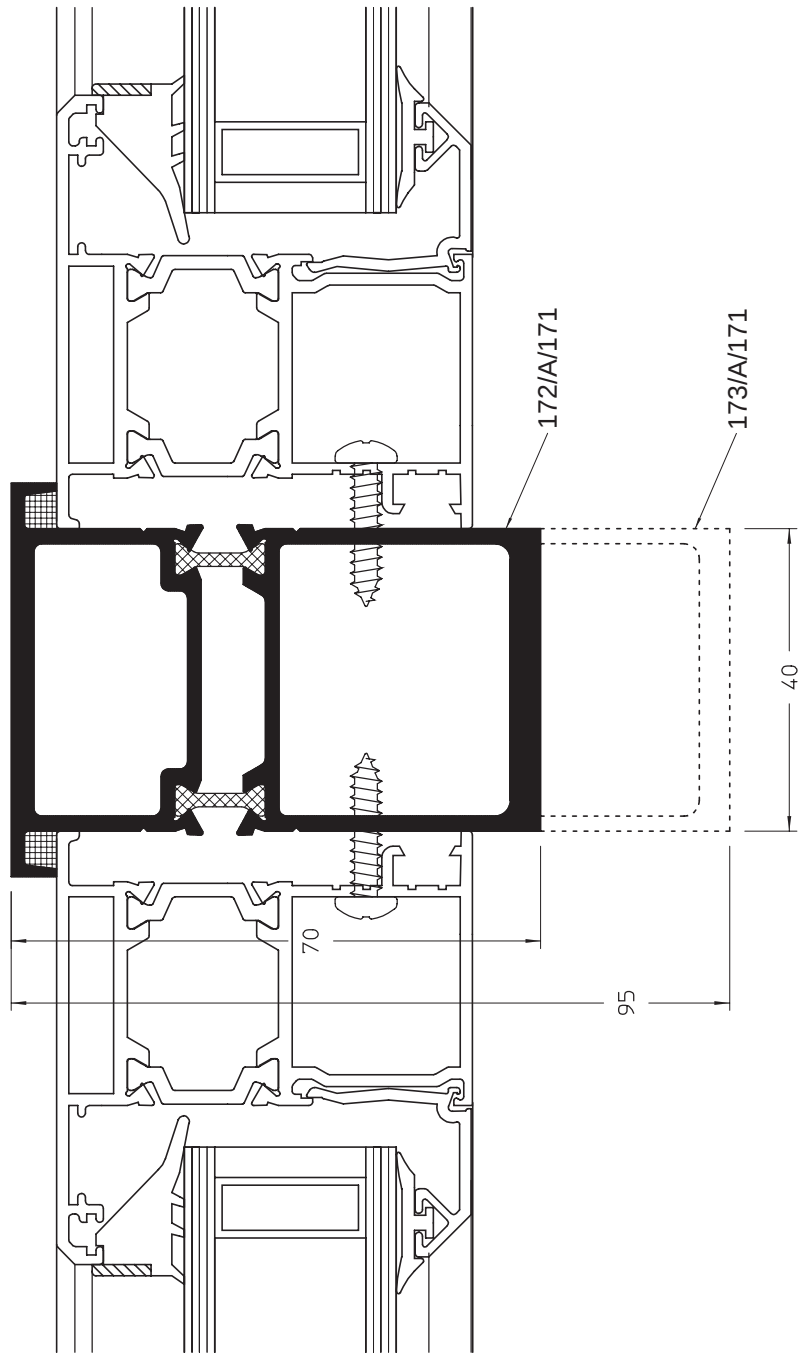
Internal Glaze Dummy Vent



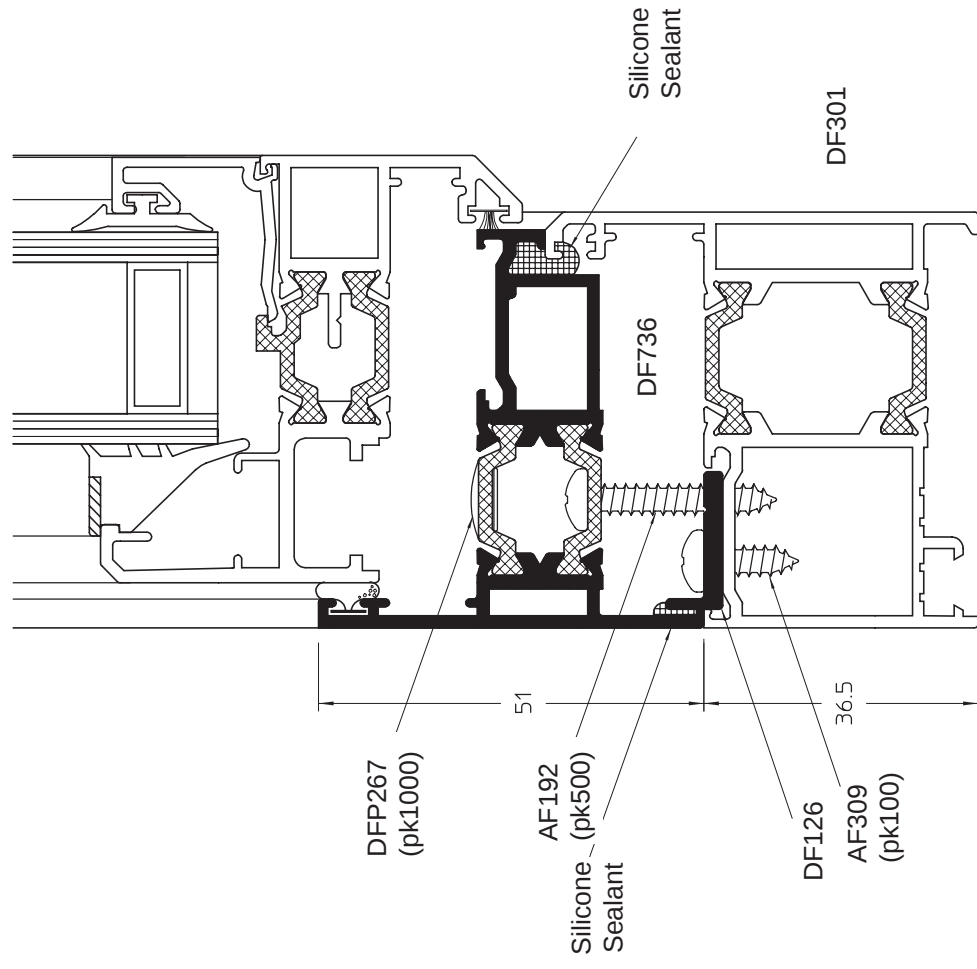
Subcills



H/D Coupling Box Mullion



Reverse Rebate Adaptor - Glaze Out



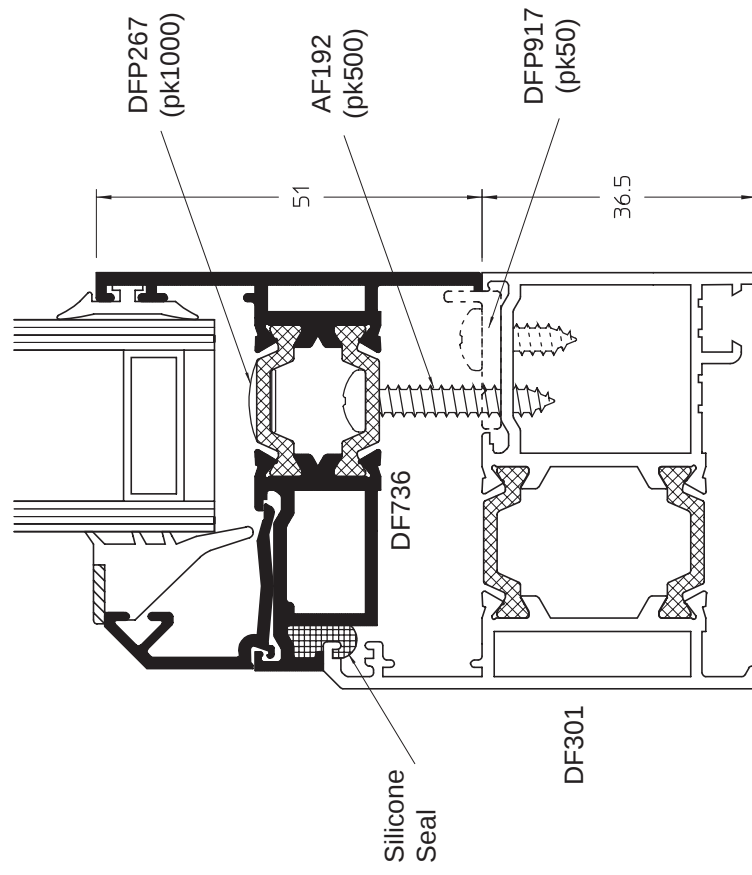
Note:-
When framing profiles are dual coloured, they have an (A or B) postfix after there part number.

'A' denotes open out
'B' denotes open in

An example of dual coloured profiles required for the general arrangement shown on this page would be:-

DF301/5000/SP/SP/B
DF736/5000/SP/SP/A

Reverse Rebate Adaptor - Glaze In



Note:-

When framing profiles are dual coloured, they have an (A or B) postfix after their part number.

'A' denotes open out

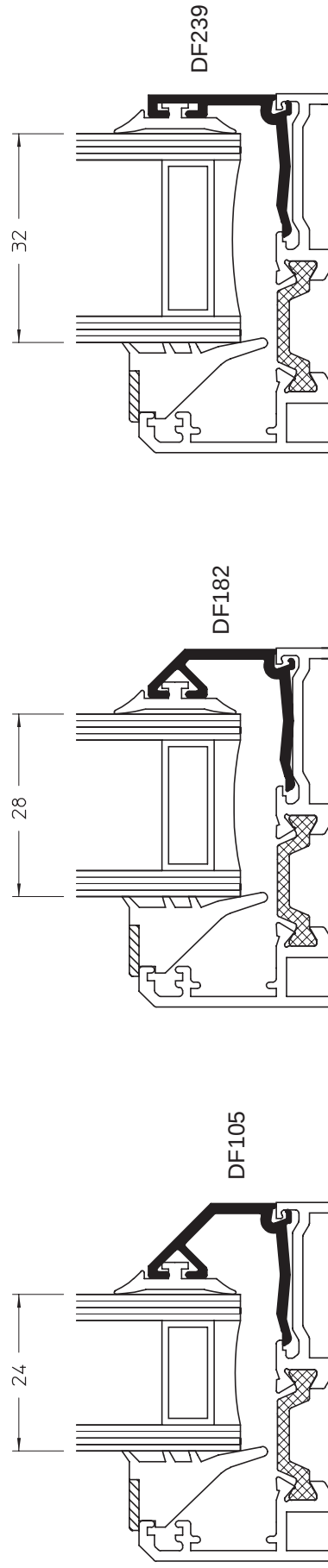
'B' denotes open in

An example of dual coloured profiles required for the general arrangement shown on this page would be:-

DF301/5000/SP/SP/A

DF736/5000/SP/SP/B

Bead Options





sapa:

This page has been left intentionally blank

This page has been left intentionally blank

Our policy is one of continuous development and consequently we reserve the right to vary the products and their performance specification shown in this literature without notice.

All products and systems which Sapa supply are supplied subject to Sapa's standard Terms and Conditions of Sale which may vary from time to time.

This Technical Data Sheet is for specification guidance only. It should not be relied on for manufacturing or installation details which must instead be obtained from Sapa Building Systems' Fabrication Manuals. For further assistance please contact one of our Project Consultants by calling the Marketing Department on the number below.

© Sapa Building Systems Limited. This data sheet is issued subject to the condition that it shall not be reproduced without the consent of Sapa Building Systems Limited in writing

Brochure reference DFC60 0907

Sapa Building Systems Limited

Postal address **Alexandra Way, Ashchurch, Tewkesbury, Gloucestershire GL20 8NB**
Telephone **01684 853500** Fax **01684 851850**
E-mail **info@sapabuildingsystems.co.uk** Website **www.sapabuildingsystems.co.uk**