

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

August 2009

sapa:

buildingsystem

ARCHITECTURAL ALUMINIUM SOLUTIONS



Dualframe 75mm Casement Windows

Technical Data Sheet

Sapa Building System

Dualframe

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- **Contemporary Design:** The new Sapa Dualframe range signifies a new era in aluminium fenestration, with products that have been specifically designed to comply with the ever increasing complexity 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 75mm 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.

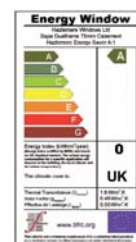
■ Application

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'.

Water Tightness	600 Pascals(static test)
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 the Product Manual.

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.outerframe.

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	302	358	601	*
Min Height	424**	424**	424**	424**

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	37kg	45kg	*
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	38kg	47kg	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.

*See Page 5 Hardware and Security

** Minimum sizes can be reduced to 302mm when using Cockspur handles.

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 cam and end shootbolts 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.

*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.

These butt hinges are primarily designed for use with folding openers, remote operating gear or electronic actuators. Where they are fitted in conjunction with espag 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 up to 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 75mm 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.

An 'A' Window Energy Rating (WER) can be achieved where required.

Site Work

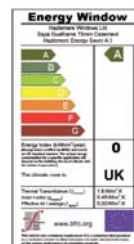
Fabrication, installation and glazing service is available through a nationwide network of fabricators & installers. For details of suitable fabricators & installers, please contact our Marketing Department on 01684 853500.



BS 4873
Licence No. KM74159



BS 7950
Licence No. KM74141

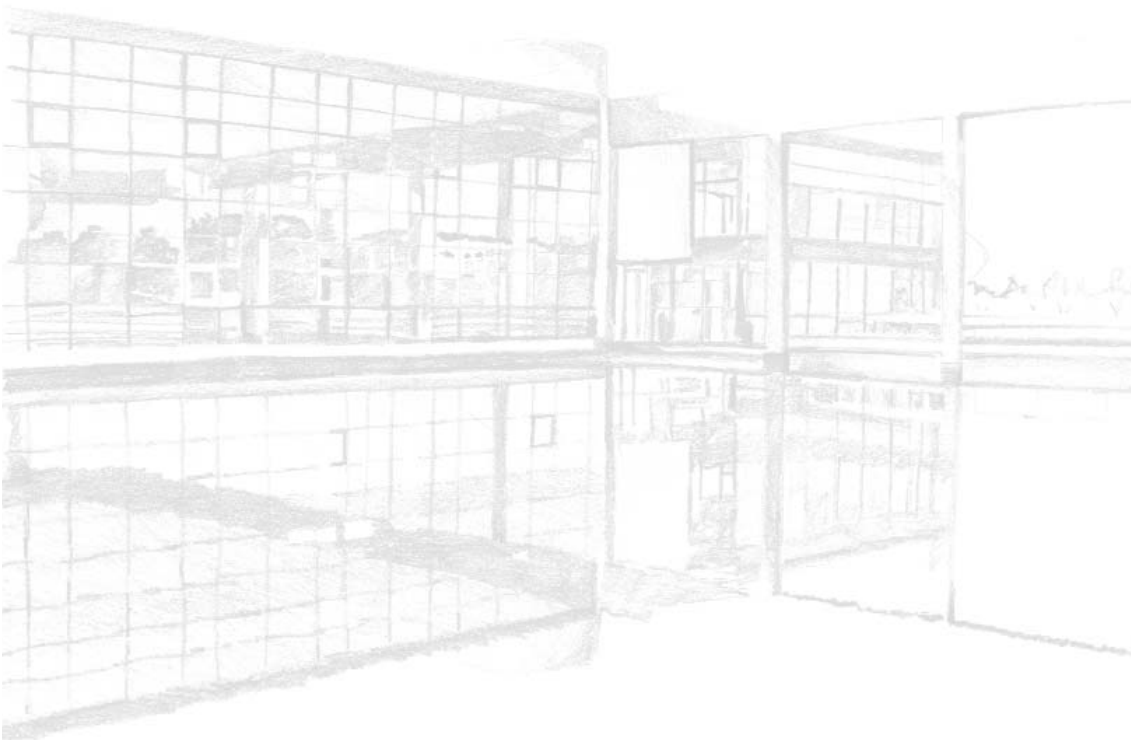


- Our field based Project Consultants, working with our in-house Contracts Design and Administration team, provide UK specifiers with specialist advice concerning the correct application of products, giving guidance on Building Regulations, British Standards and other issues such as product specifications, 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, your design meetings and budgetary planning. We can assist with 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 and installers, please call our Marketing Department on 01684 853500.

■ Sapa Group




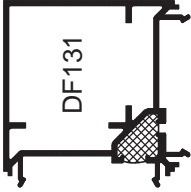








Sapa Building Systems Limited is a member of the worldwide Sapa Group. We develop and market high value-added profiles in aluminium and are the leading independent producer of aluminium profiles in the world, with customers in Europe, North America and Asia. In the UK, the Sapa Group has extensive multi-site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

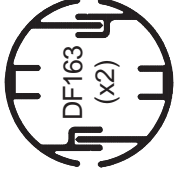





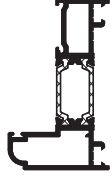


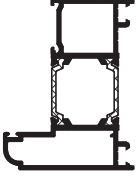


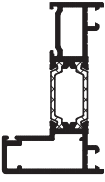


Backed by the resources of the Group, Sapa Building Systems Limited offers architects and specifiers a wide range of innovative aluminium systems for curtain walling, doors, windows and specialist applications. With a wealth of European knowledge and experience our company incorporates the highly respected 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.

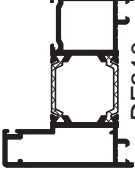











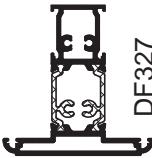




PROFILE INERTIA VALUES

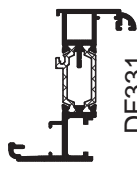
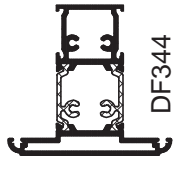
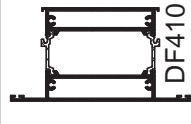
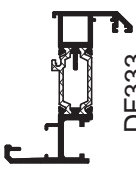
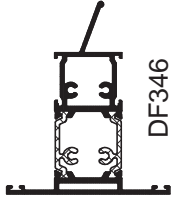
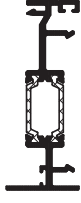
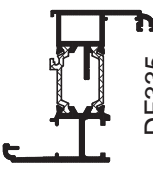
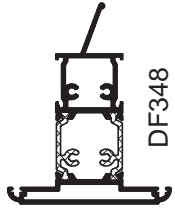
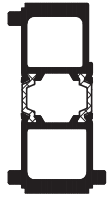
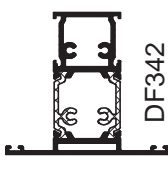
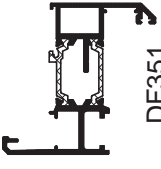
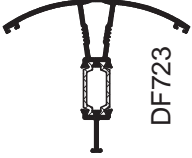
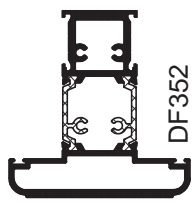

The following pages give information on the inertia values of the integral mullions, transoms, baypoles and coupling mullions. BS 6399 Part 2 must be used to calculate the inertia value required.

Profile	Inertia (mm ⁴)
 DF122	 161,075
	 2,930
 DF131	 639,861
	 659,240
 DF138	 338,423
	 115,967
 DF139	 283,774
	 55,080

Profile	Inertia (mm ⁴)
 DF163 (x2)	 228,932
	 129,348
 DF269	 55,843
	 6,248
 DF304	 178,544
	 27,226
 DF305	 222,833
	 67,130
 DF309	 183,507
	 47,603

Profile	Inertia (mm ⁴)
 DF310	 227,945
	 70,307
 DF324	 111,371
	 17,407
 DF325	 144,952
	 25,948
 DF326	 138,640
	 36,062
 DF327	 175,923
	 49,618

PROFILE INERTIA VALUES


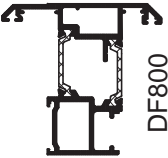


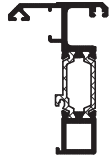

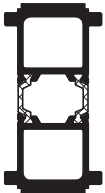
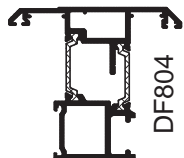
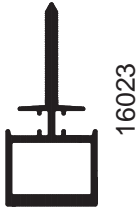
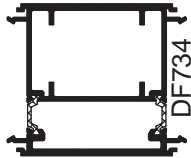
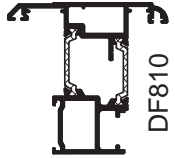
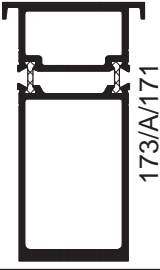
Profile	Inertia (mm ⁴)	Profile	Inertia (mm ⁴)	Profile	Inertia (mm ⁴)
 DF331	↙ 144,814	 DF344	↙ 193,769	 DF410	↙ 308,535
	↘ 36,292		↘ 72,009		
 DF333	↙ 145,670	 DF346	↙ 209,575	 DF711	↙ 220,050
	↘ 36,715		↘ 55,090		
 DF335	↙ 176,027	 DF348	↙ 256,423	 DF714	↙ 384,692
	↘ 61,567		↘ 72,340		
 DF342	↙ 155,242	 DF351	↙ 176,722	 DF723	↙ 167,251
	↘ 54,757		↘ 61,975		
		 DF352	↙ 342,537	 DF724	↙ 162,597
			↘ 105,544		↘ 101,164

75mm Casement Window

DUALFRAME

PROFILE INERTIA VALUES

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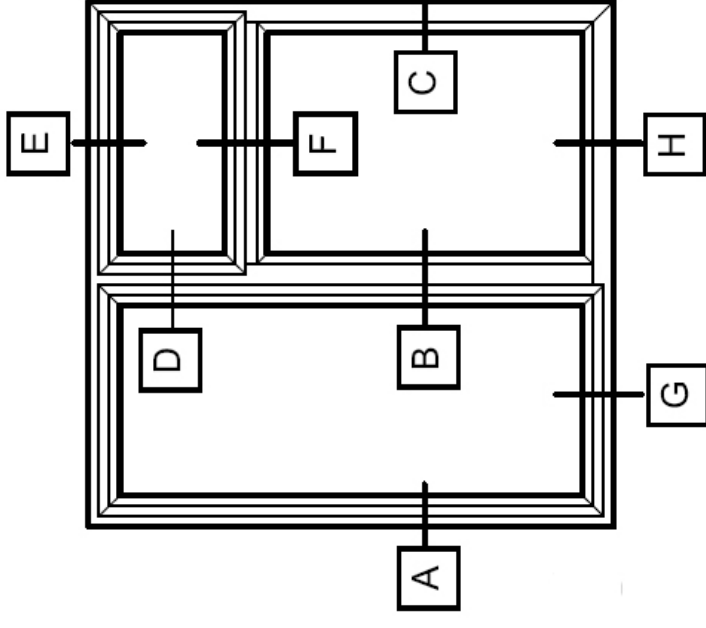
Profile	Inertia (mm ⁴)	Profile	Inertia (mm ⁴)	Profile	Inertia (mm ⁴)
 DF725	147,017	 DF800	102,612	 16021	53,629
	21,456		15,595		9,051
 DF729	738,637	 DF801	169,931	 16022	378,702
	412,253		106,253		49,252
 DF730	411,283	 DF804	108,363	 16023	154,527
	69,611		26,955		27,187
 DF734	651,786	 DF810	184,302	 173/A/171	843,547
	608,189		127,924		180,056
			169,688		
			106,183		

DUALFRAME 75mm Casement Window

sapa:

GENERAL ARRANGEMENTS

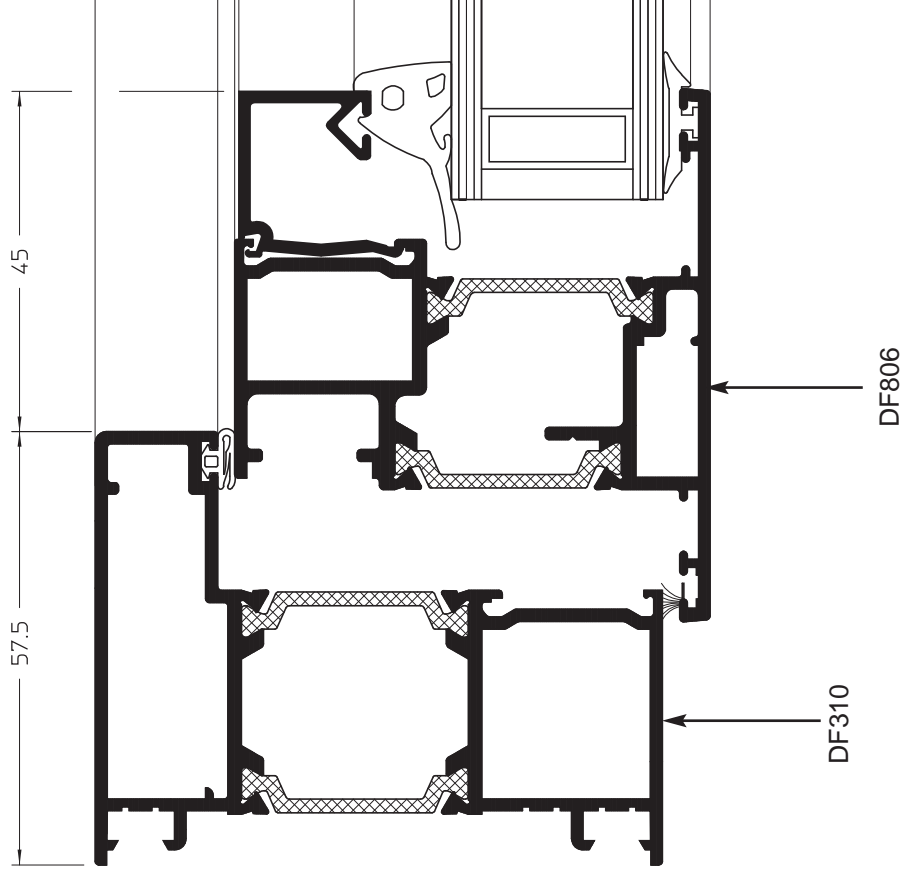
Detail	Elevation	Page
A	Jamb/Flat Vent	11
A	Curtain Wall Jamb/Flat Vent	12
A,B	Jamb/Vent - Mullion/Vent	13
C,D	Fixed Light Jamb - Mullion Vent/Vent	14
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These drawings illustrate a number of the available profile combinations. Other combinations are available please consult Sapa Building Systems for further details.

Jamb / Flat Vent

A

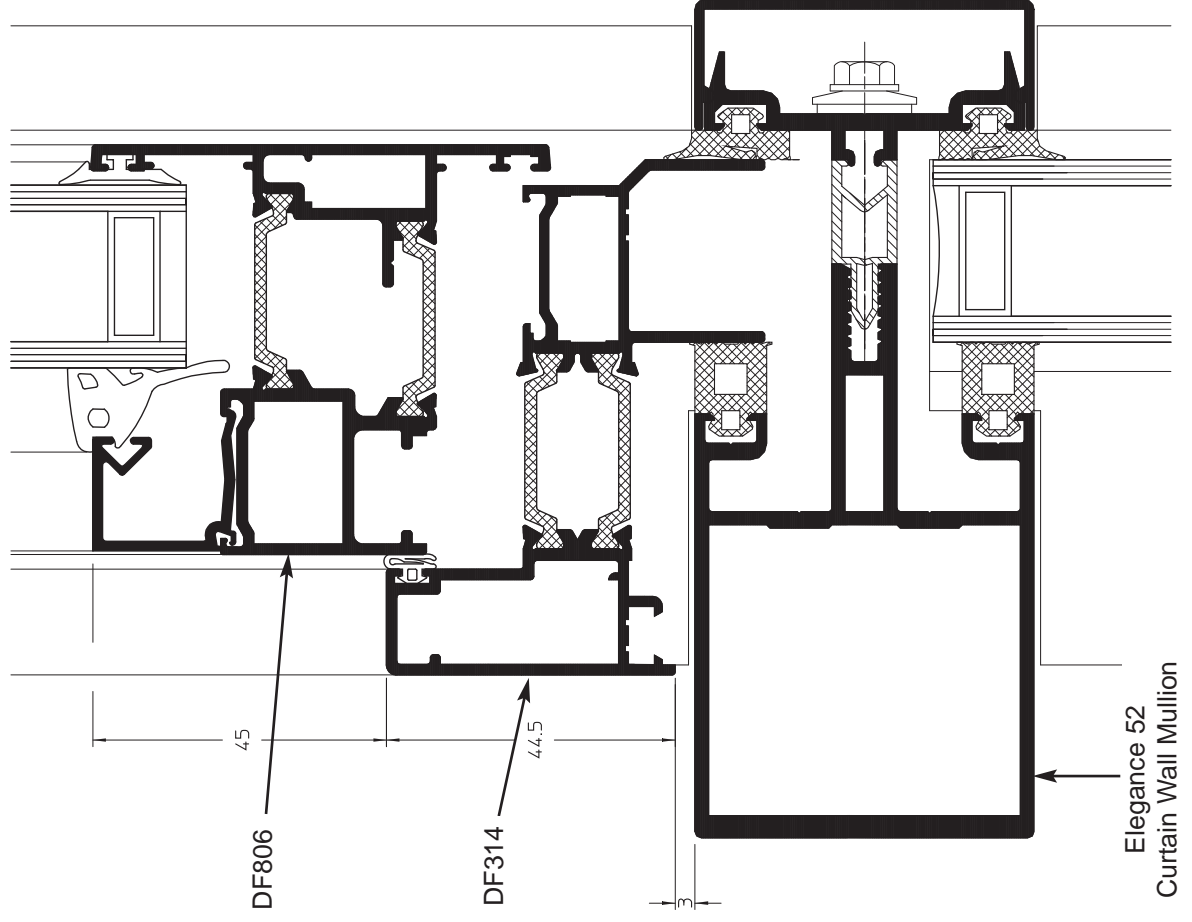


DUALFRAME 75mm Casement Window

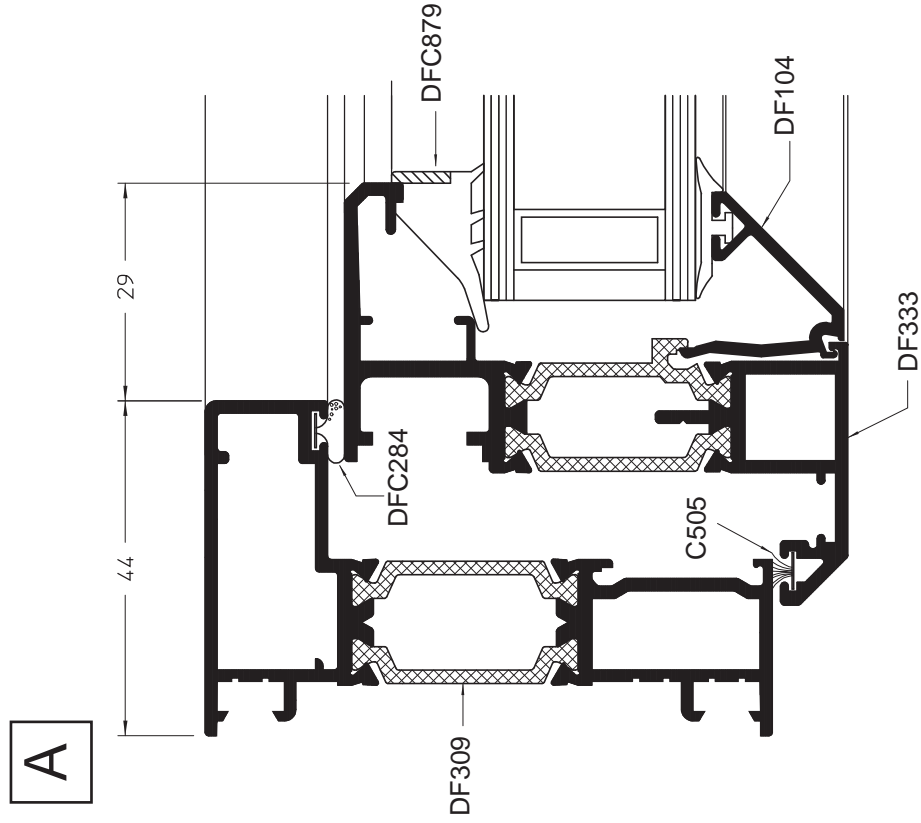
GENERAL ARRANGEMENTS

Curtain Wall Jamb / Flat Vent

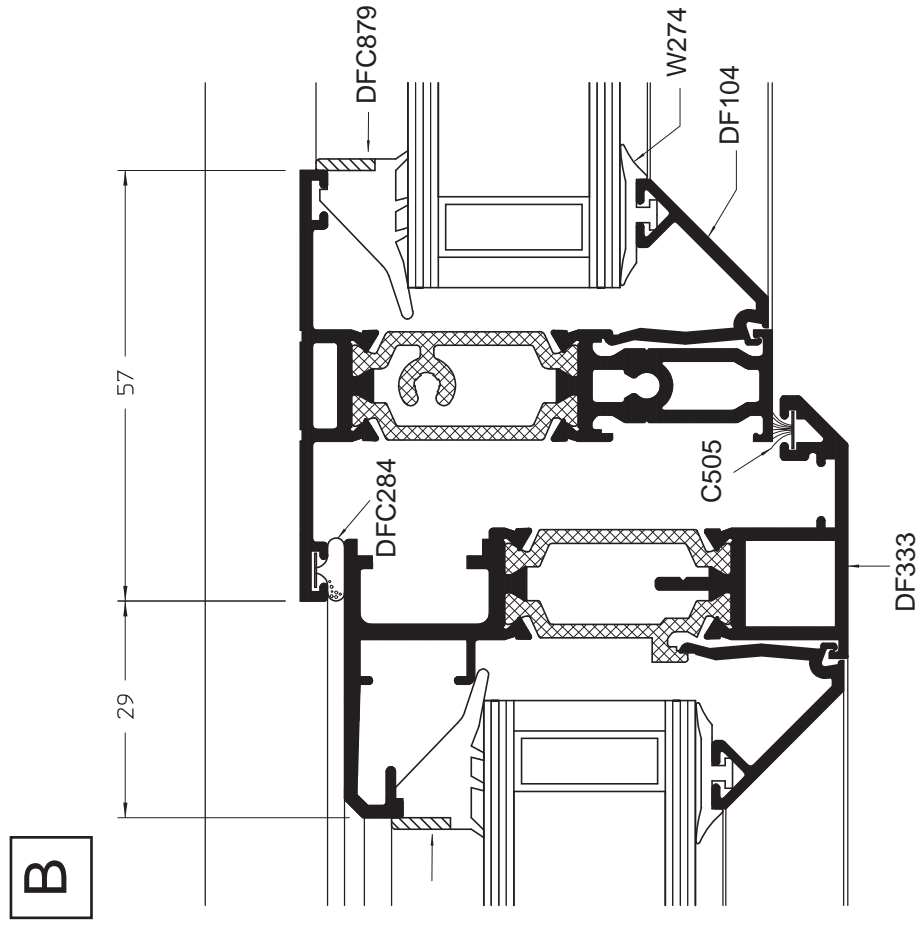
A



Jamb / Vent

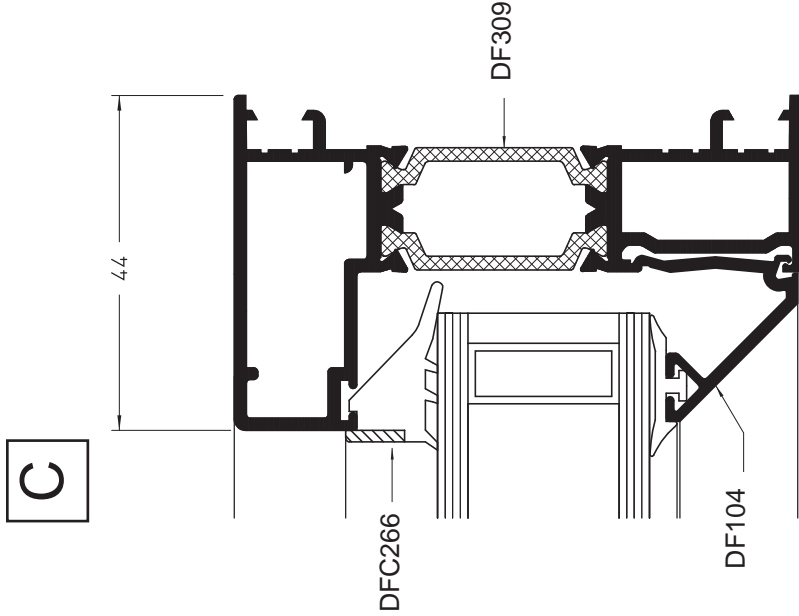


Mullion / Vent

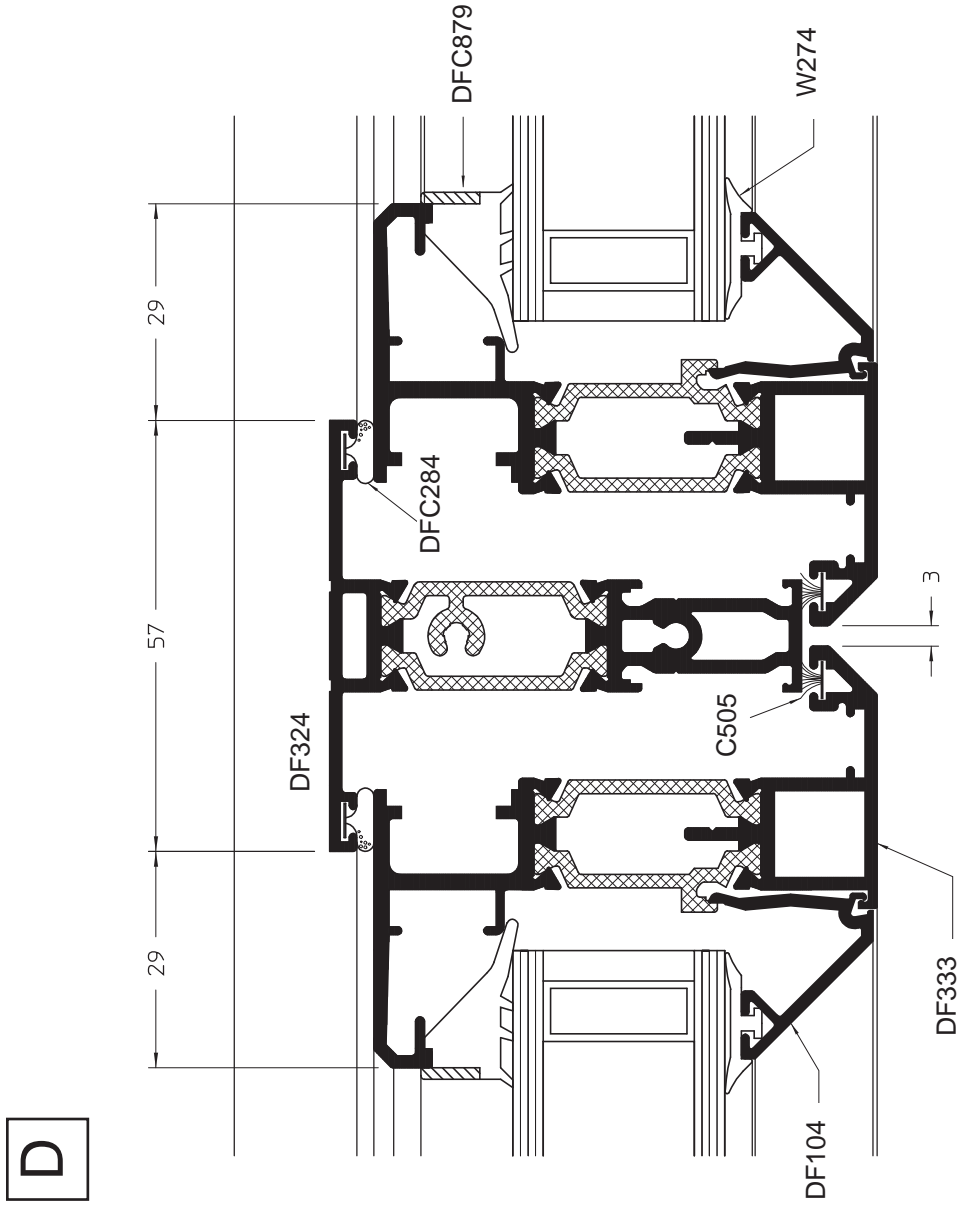


GENERAL ARRANGEMENTS

Fixed Light Jamb

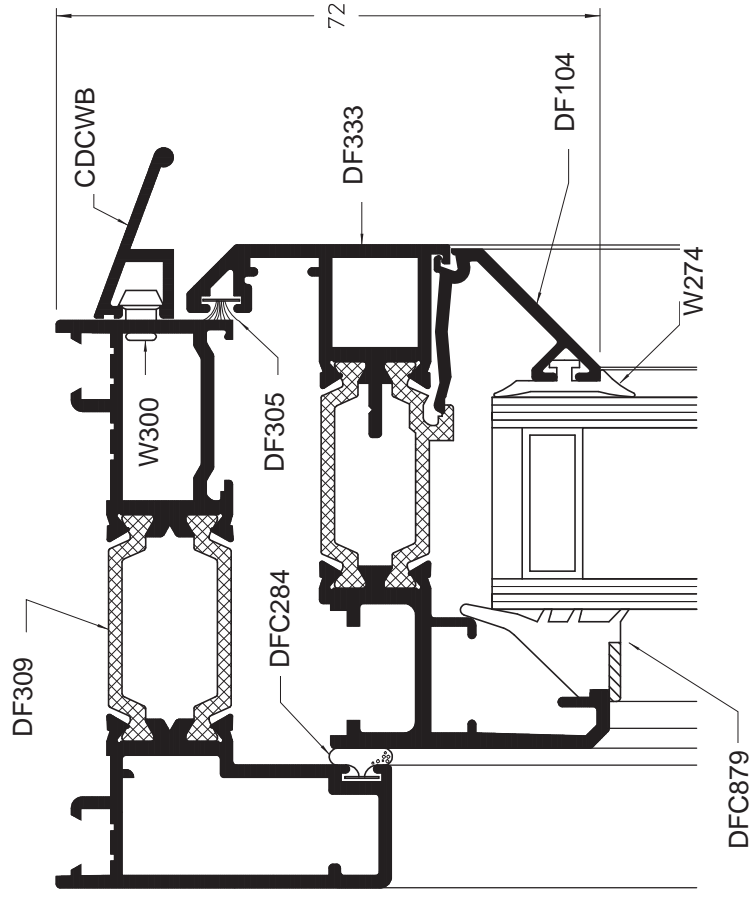


Mullion Vent / Vent



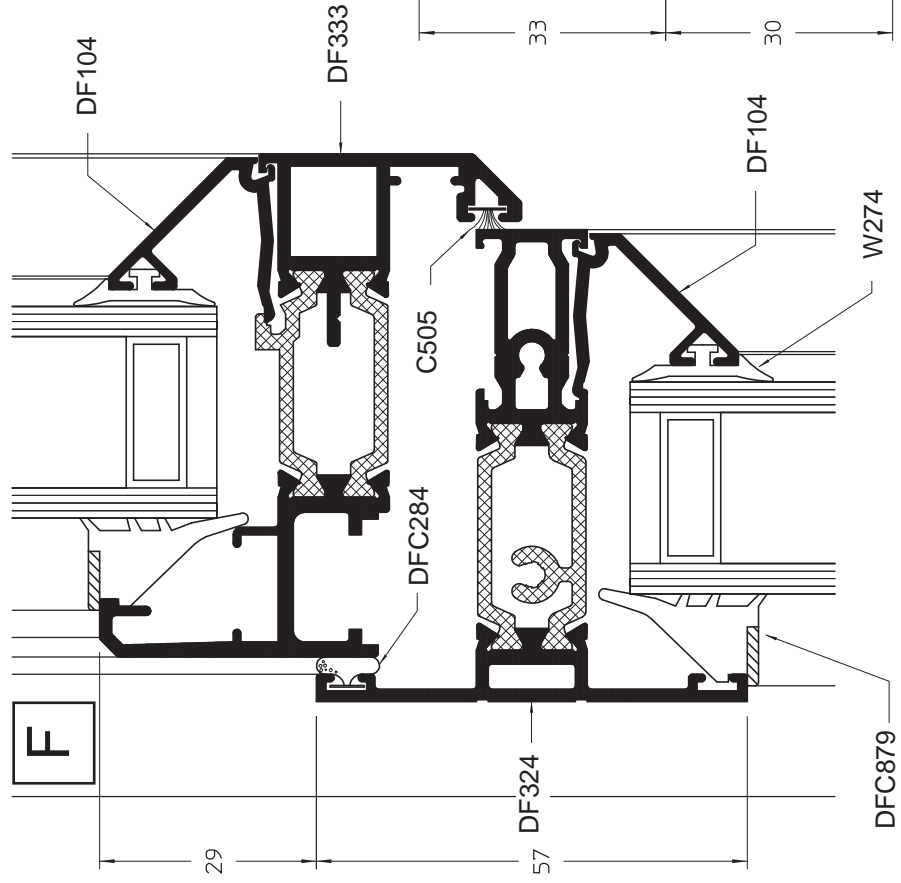
Head / Vent

E

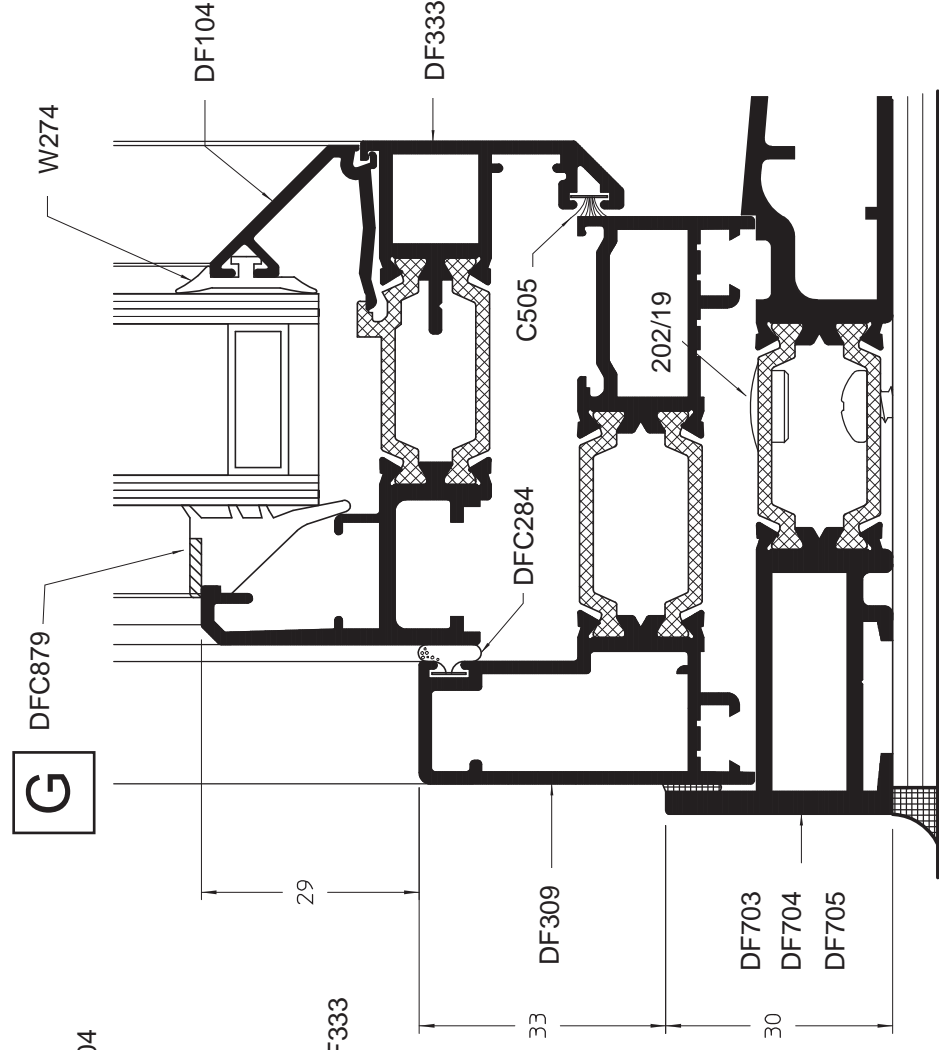


GENERAL ARRANGEMENTS

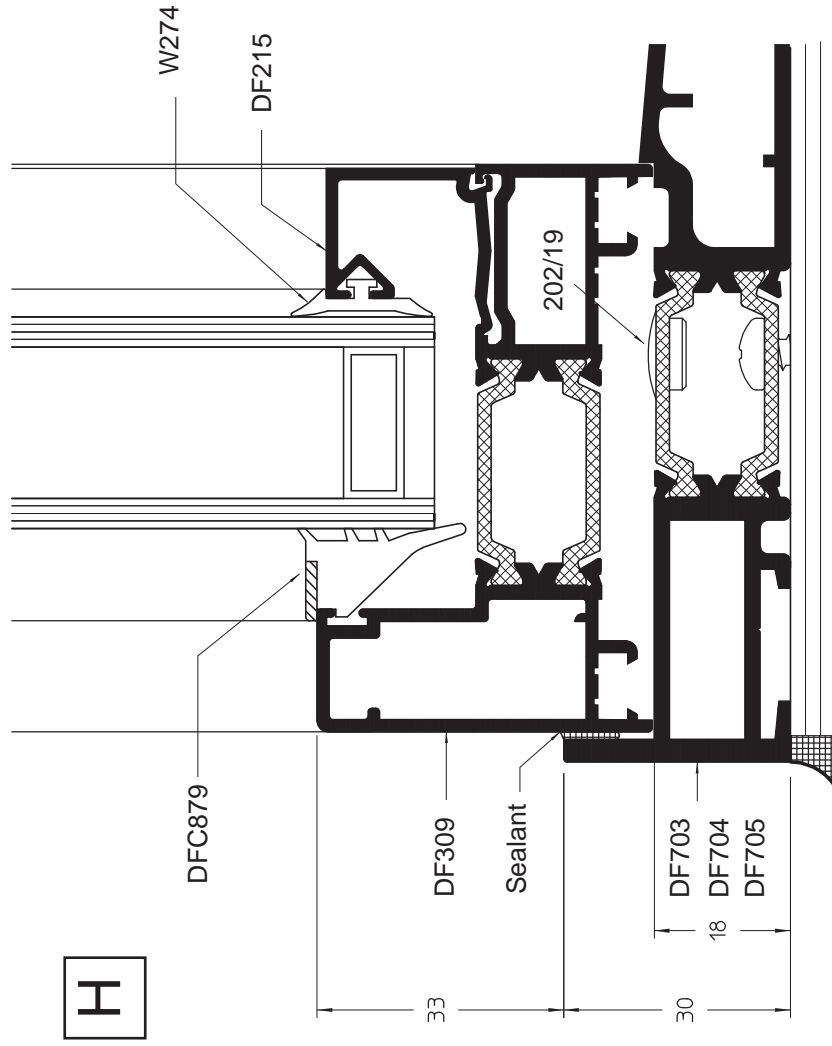
Transom / Vent



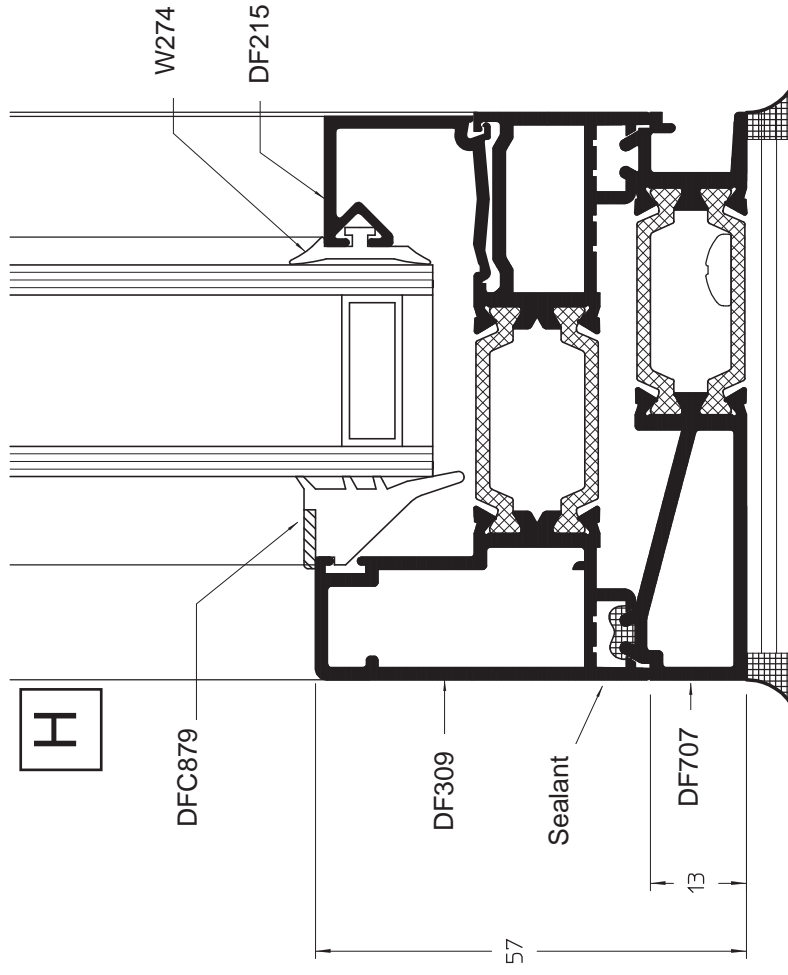
Subcill / Vent



Subcill / Fixed Light / Square Bead



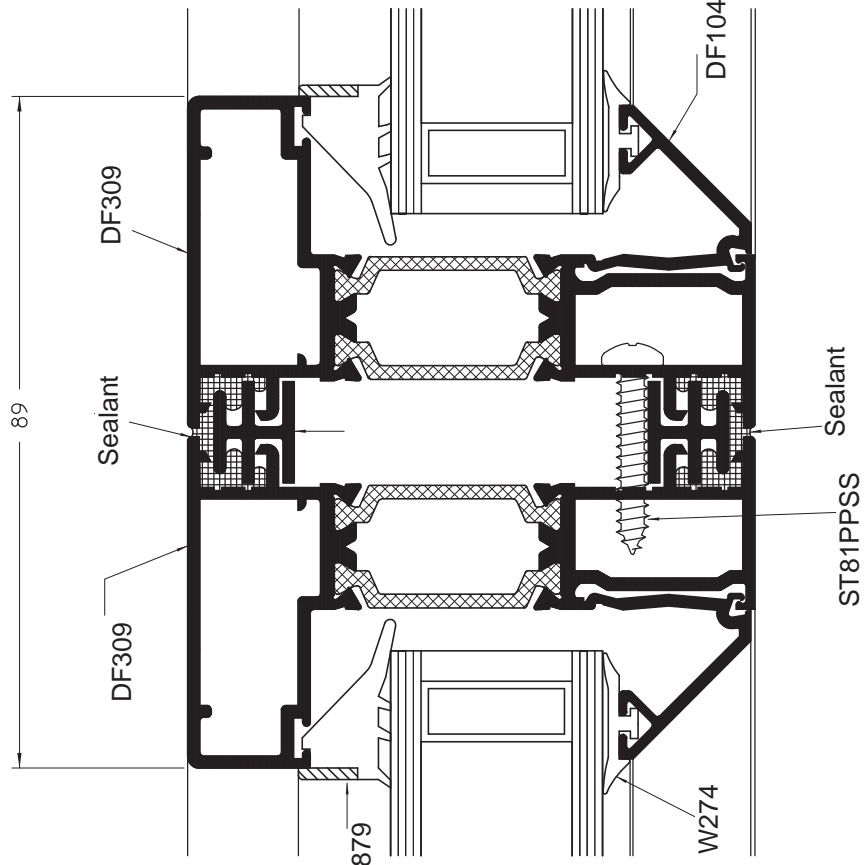
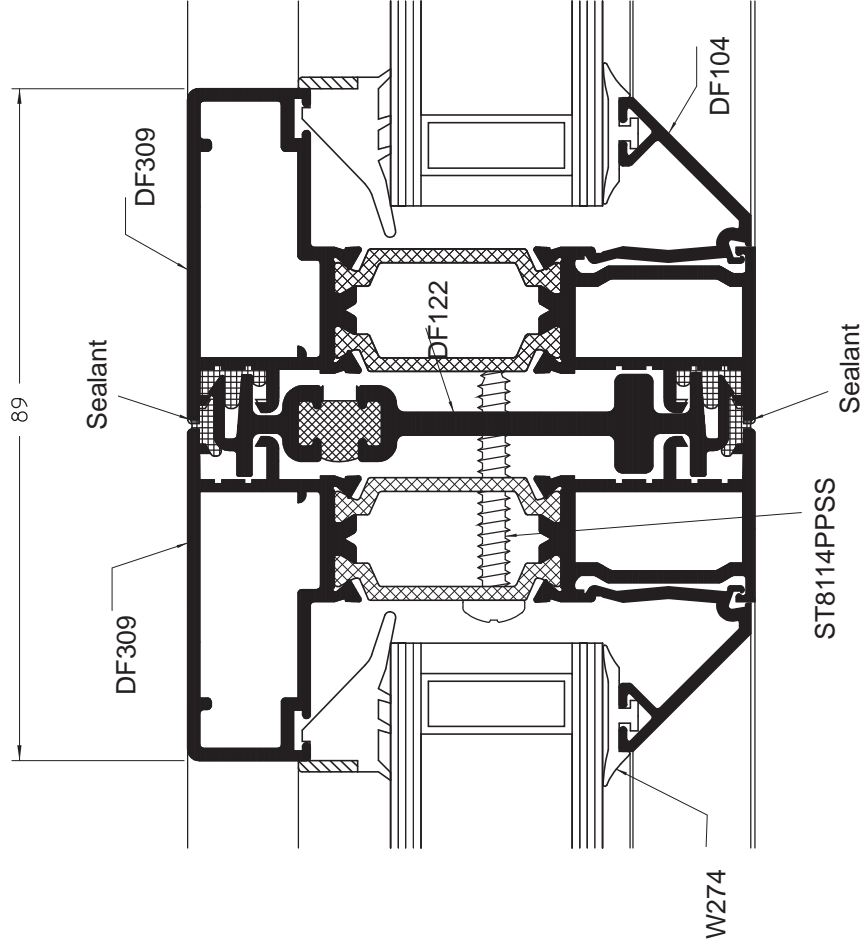
Drainage Tray / Fixed Light / Square Bead



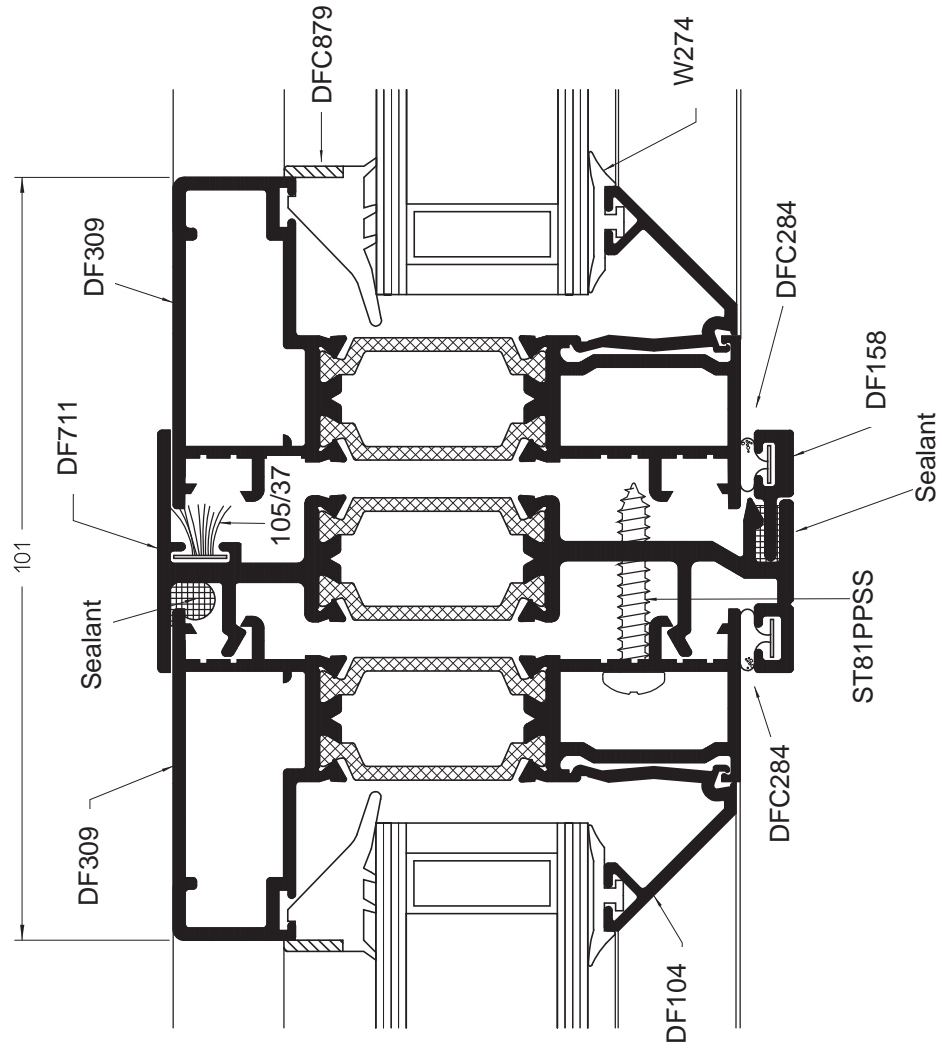
GENERAL ARRANGEMENTS

Concealed Frame to Frame Coupler

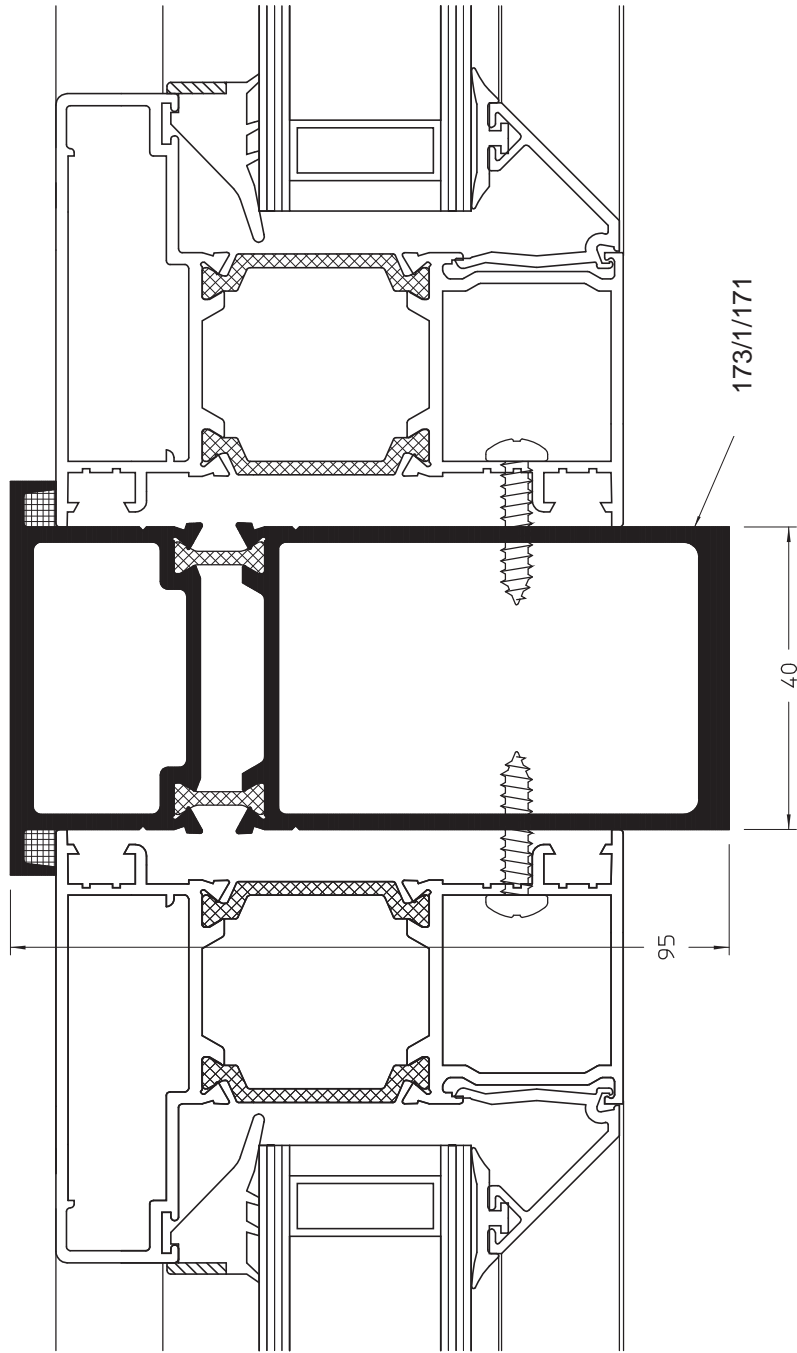
Lightweight Concealed Frame to Frame Coupler



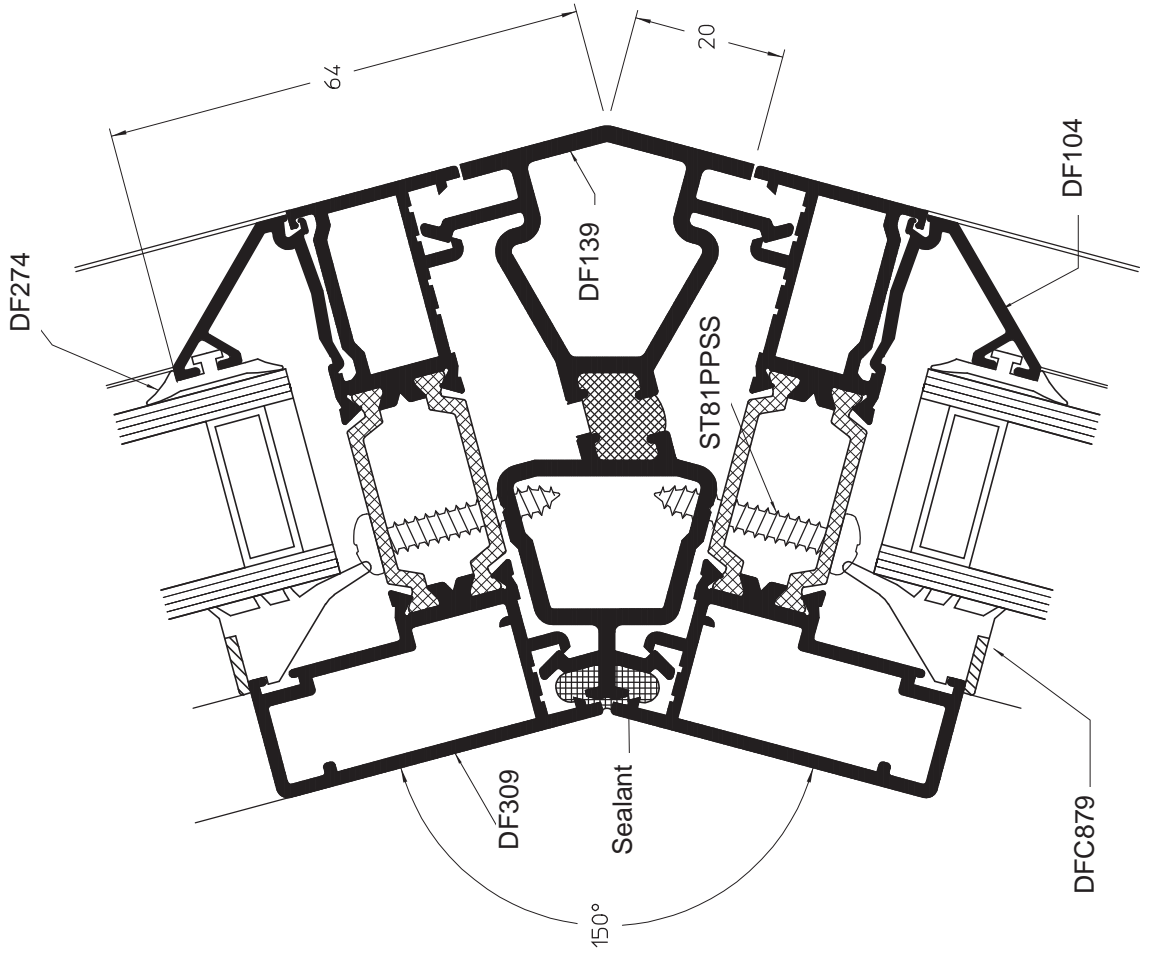
Frame to Frame Expansion Coupler



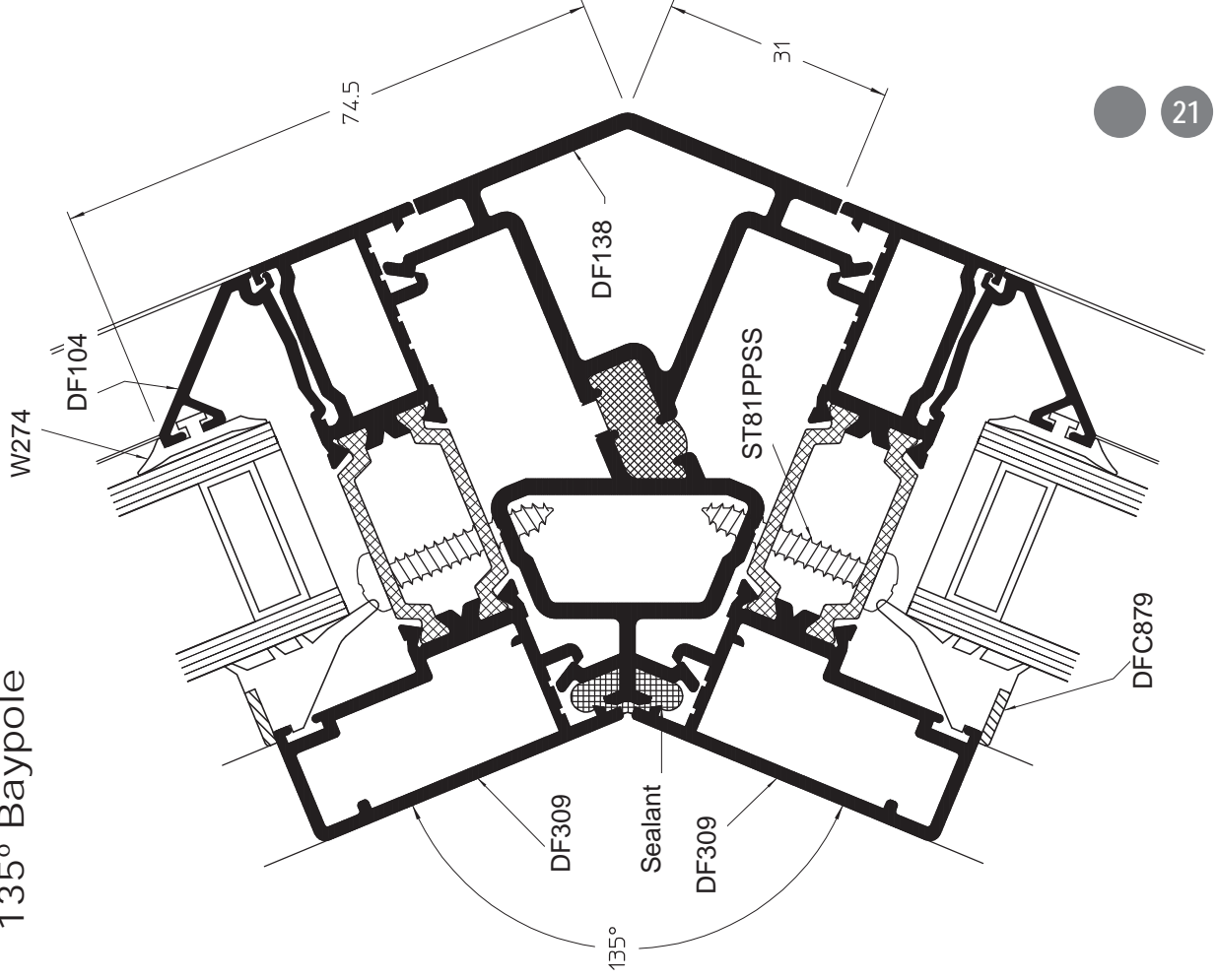
Heavy Duty Coupling Box Mullion



150° Baypole



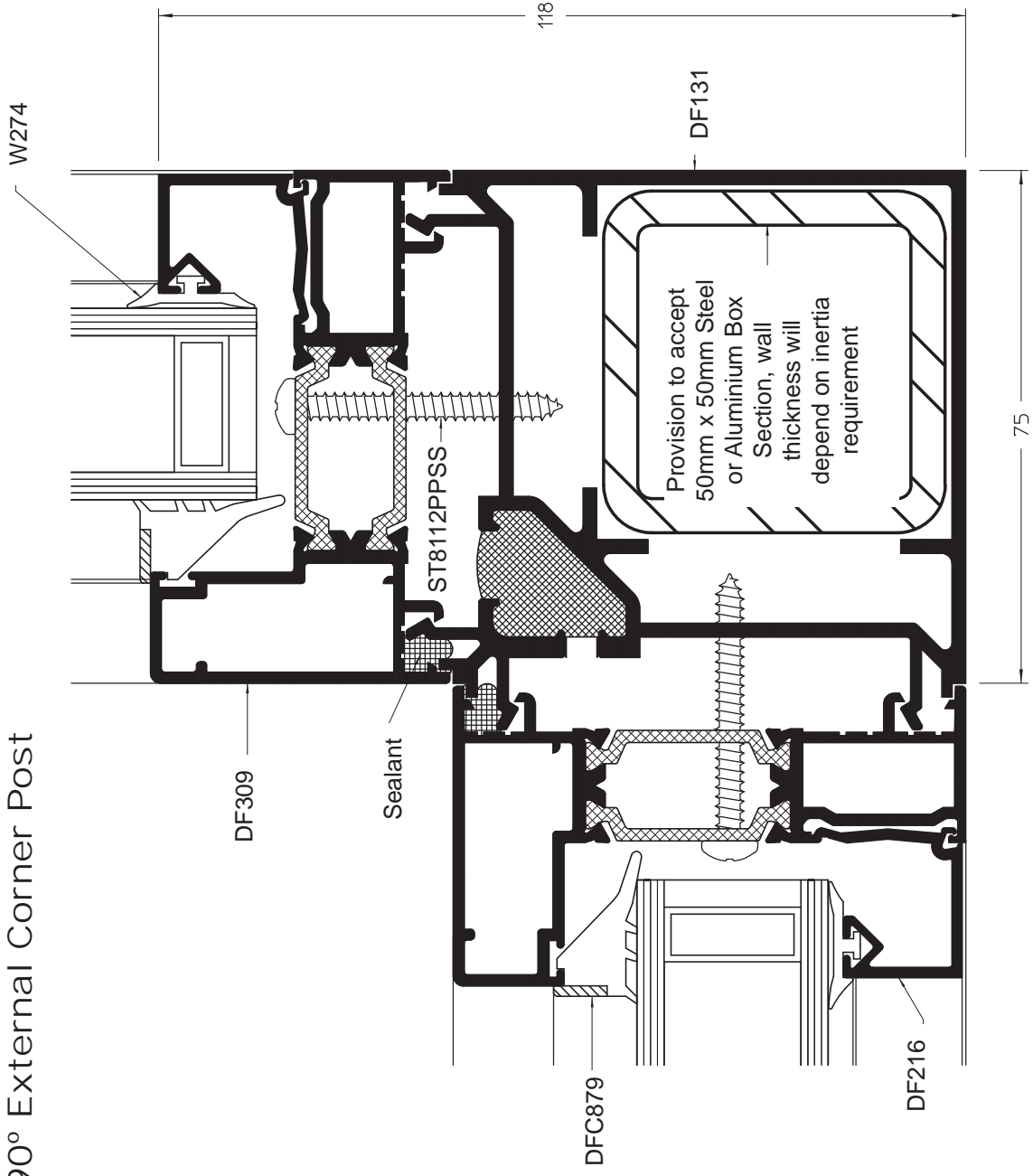
135° Baypole



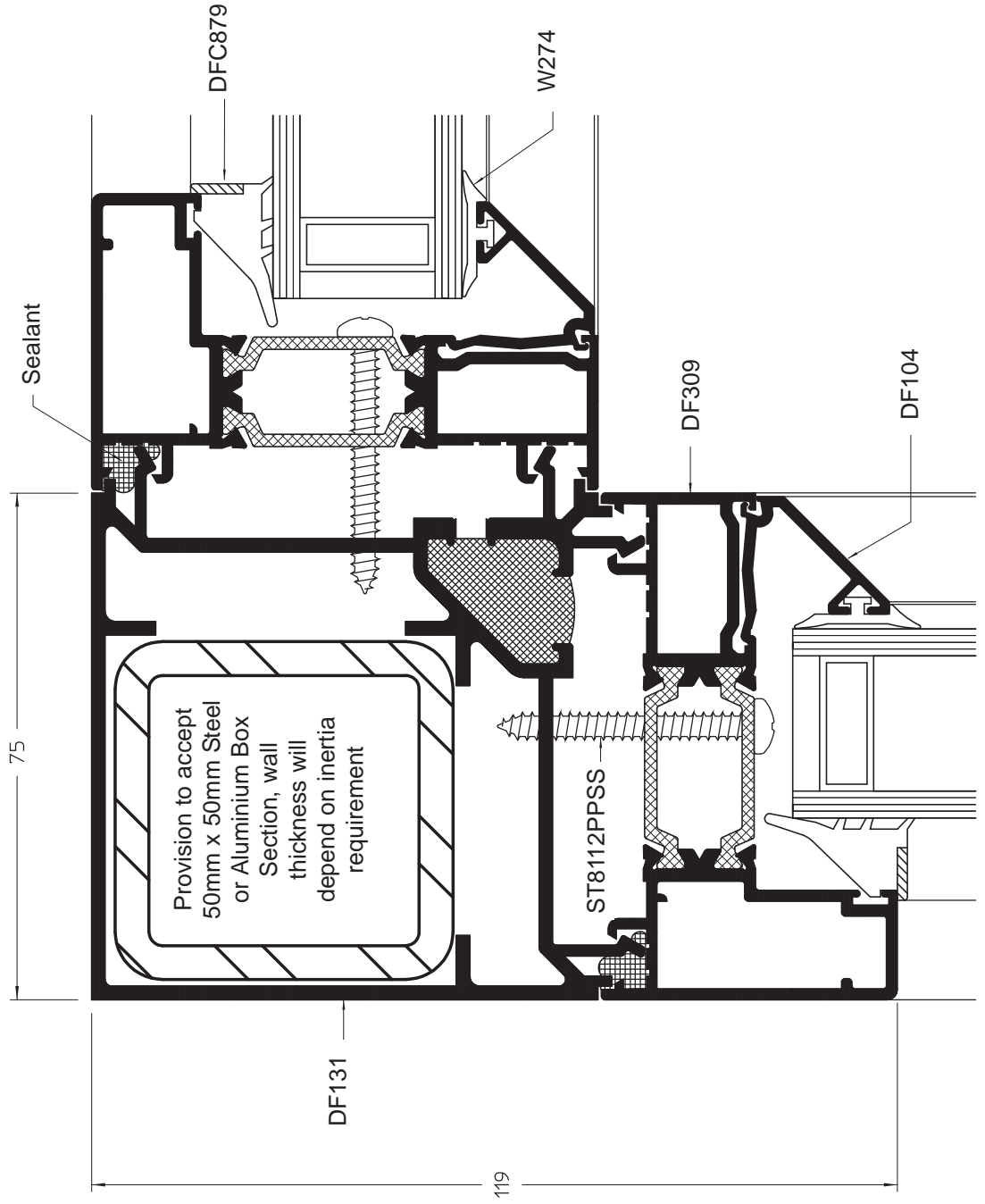
DUALFRAME 75mm Casement Window

GENERAL ARRANGEMENTS

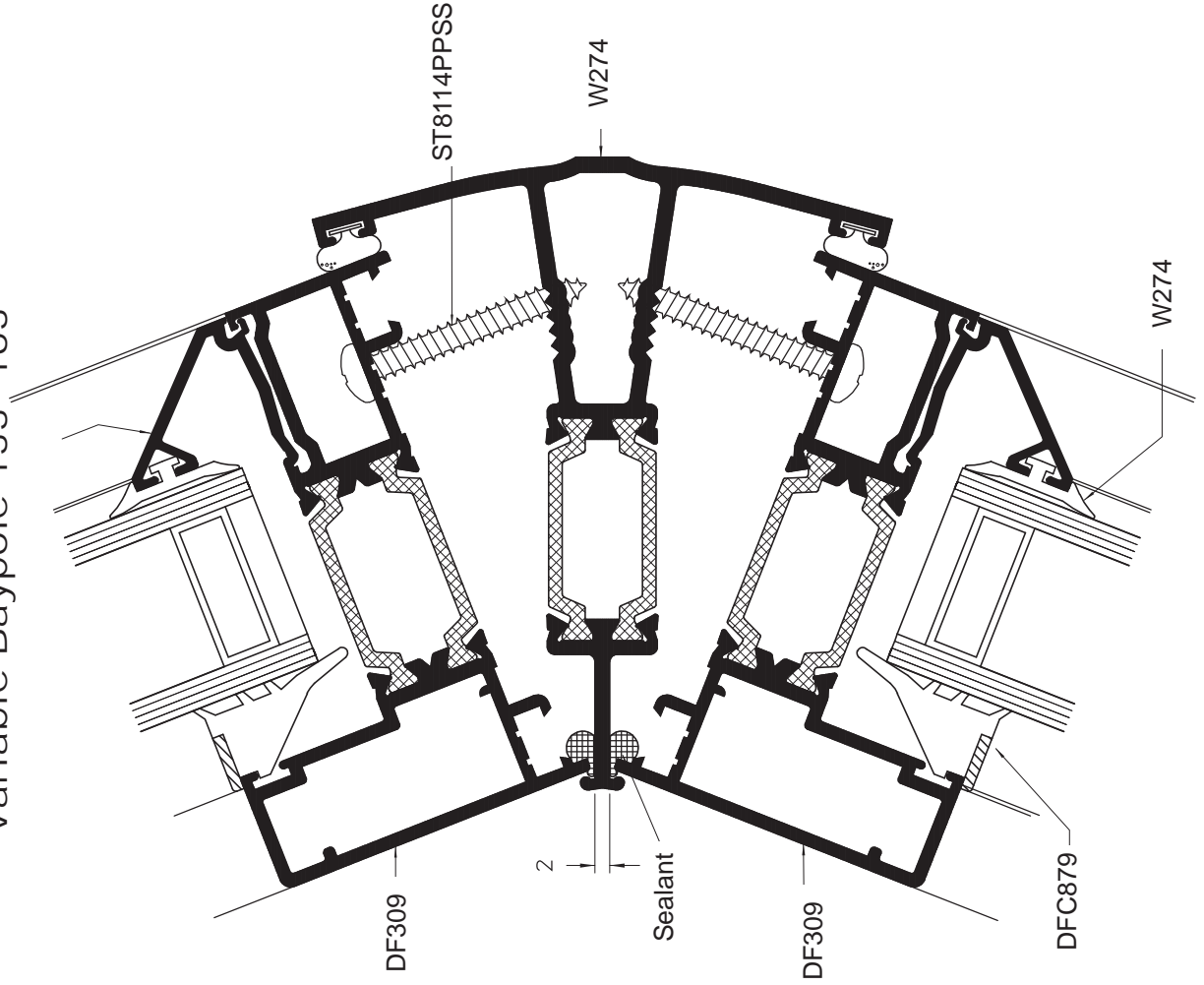
90° External Corner Post



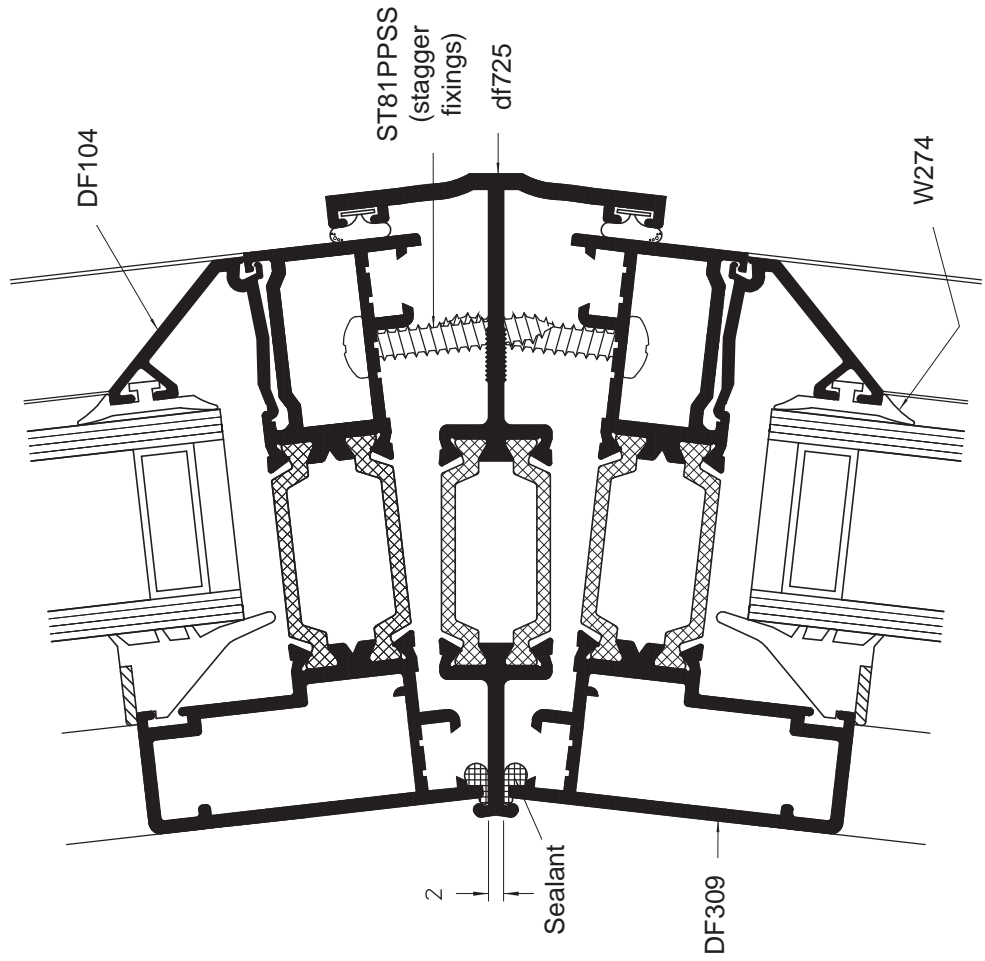
90° Internal Corner Post



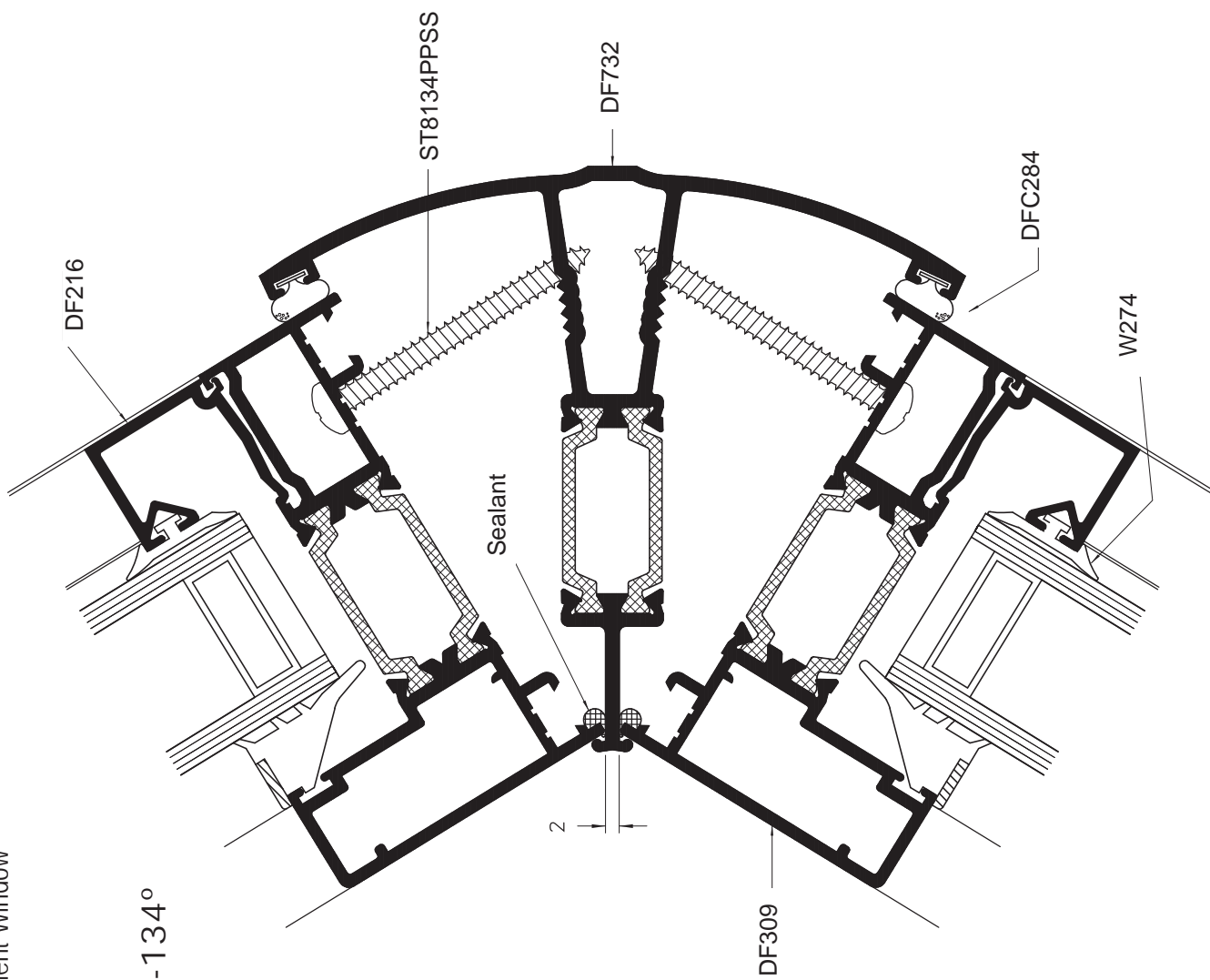
Variable Baypole 133°-163°



Variable Baypole 162°-175°



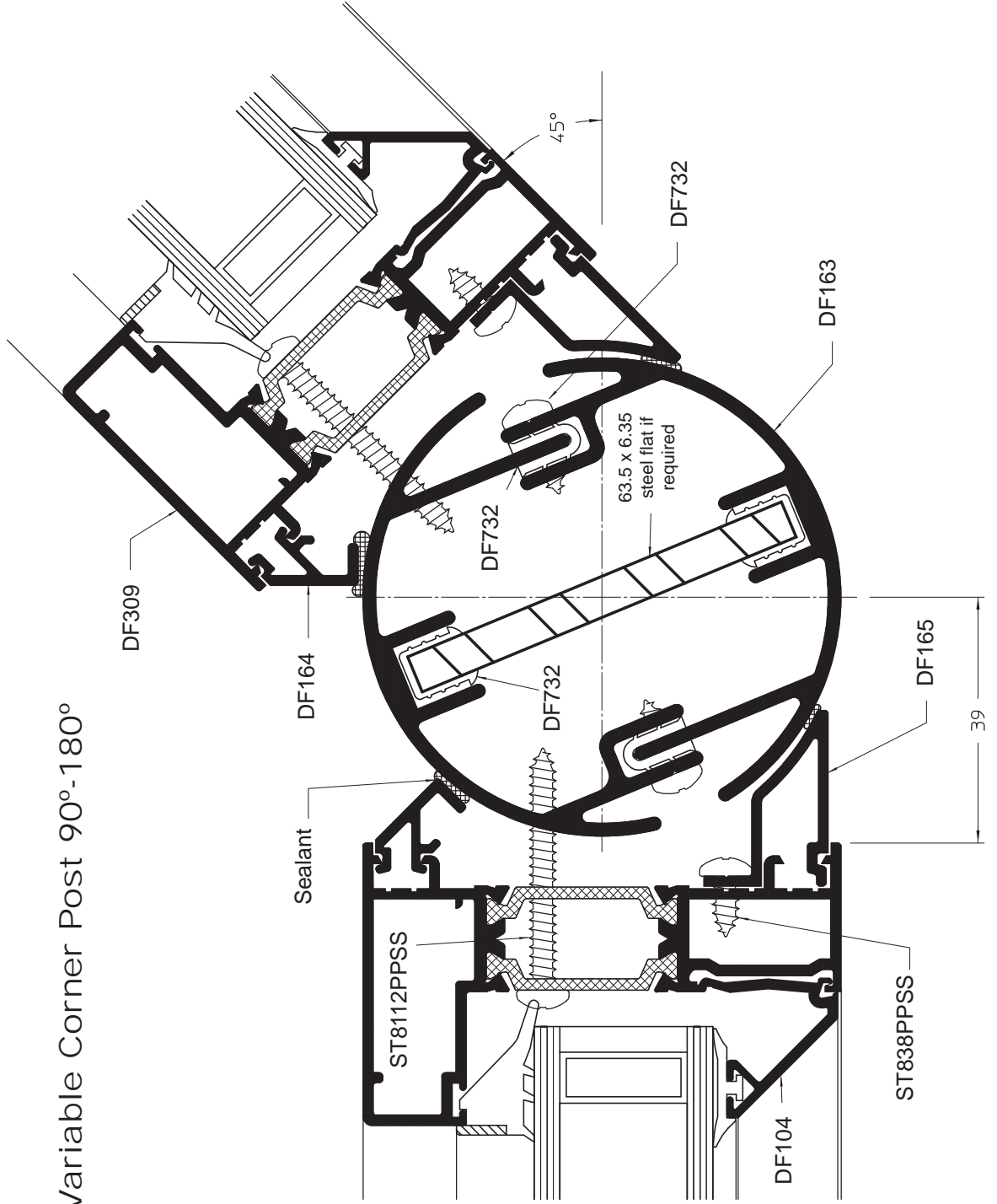
Variable Baypole 115°-134°
Softline Frame Option



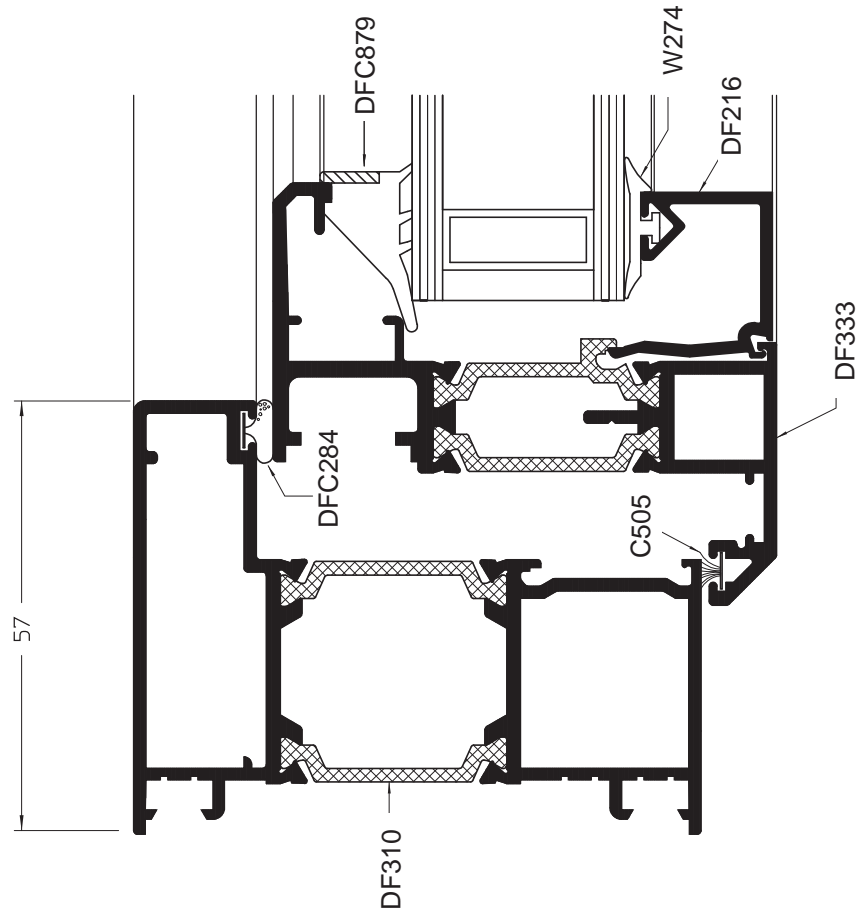
DUALFRAME 75mm Casement Window

GENERAL ARRANGEMENTS

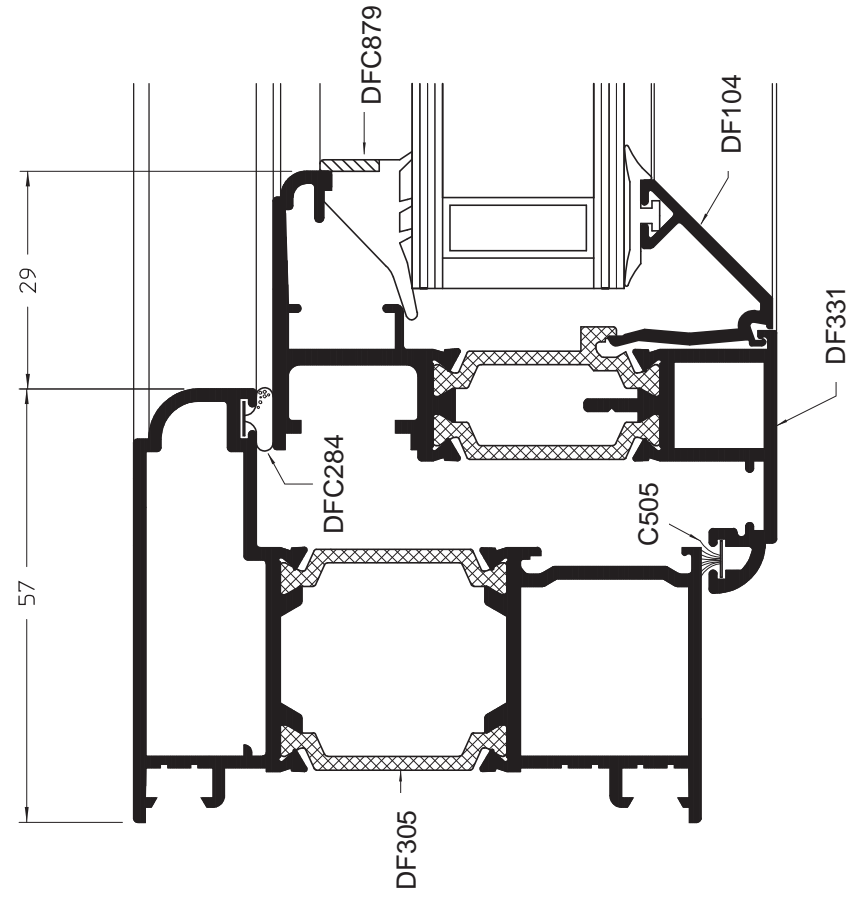
Variable Corner Post 90°-180°



Extended Square Outerframe and Chamfered Vent



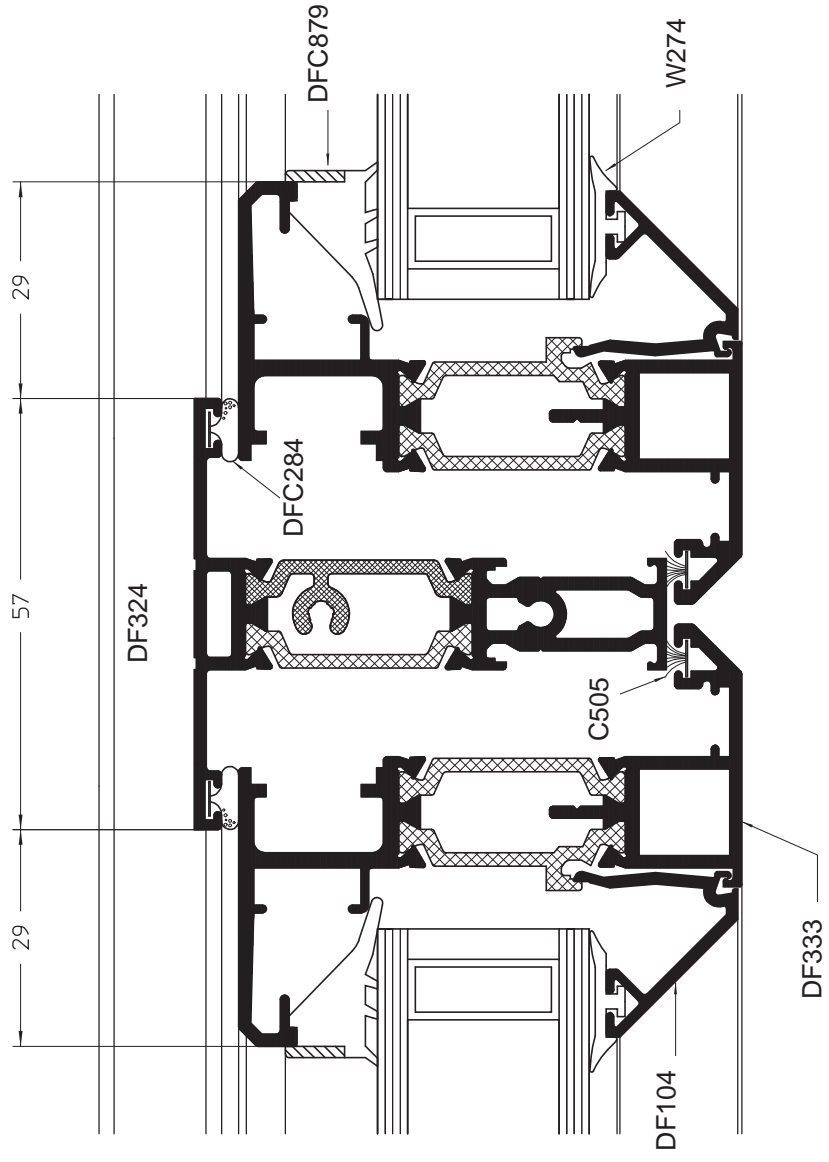
Extended Softline Outerframe and Softline Vent



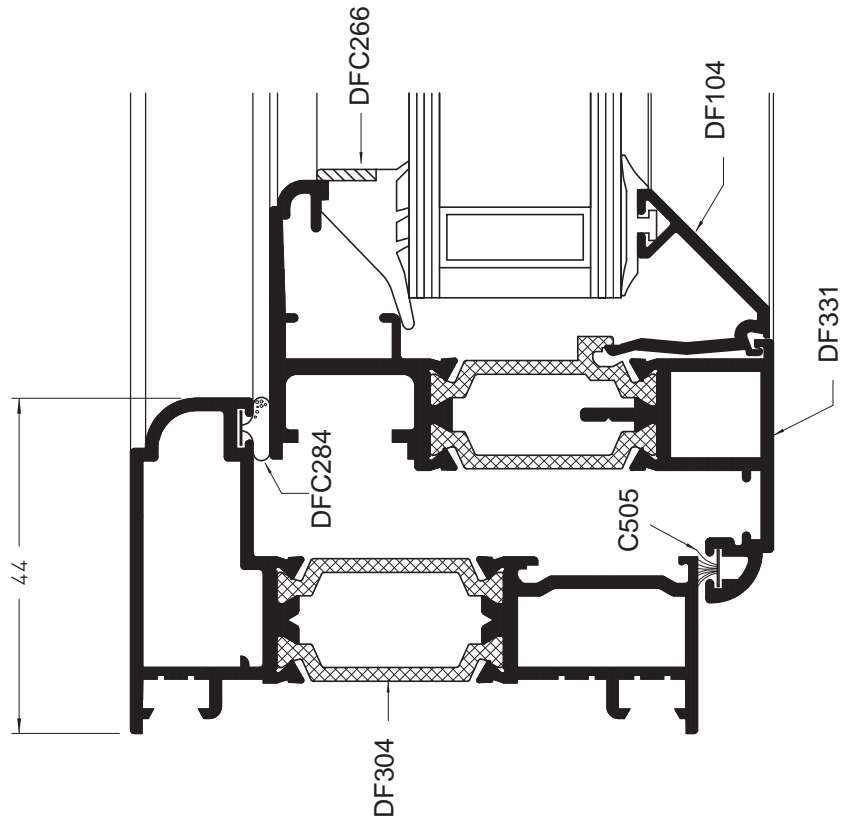
DUALFRAME 75mm Casement Window

GENERAL ARRANGEMENTS

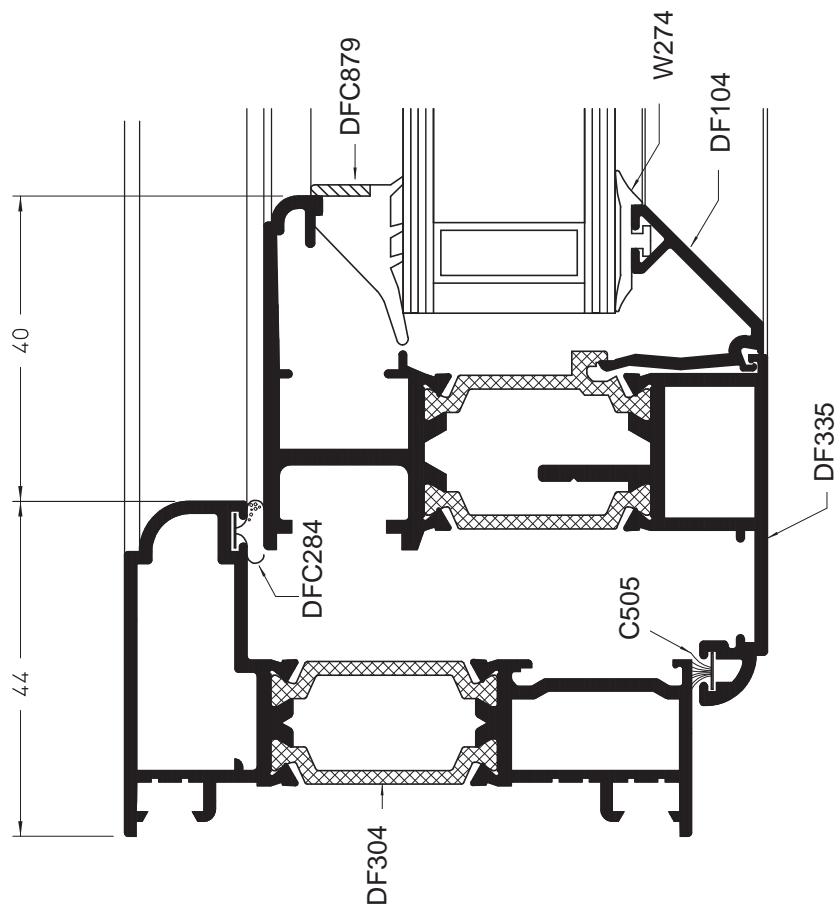
Chamfered Mullion/Transom



Softline Vent Frame

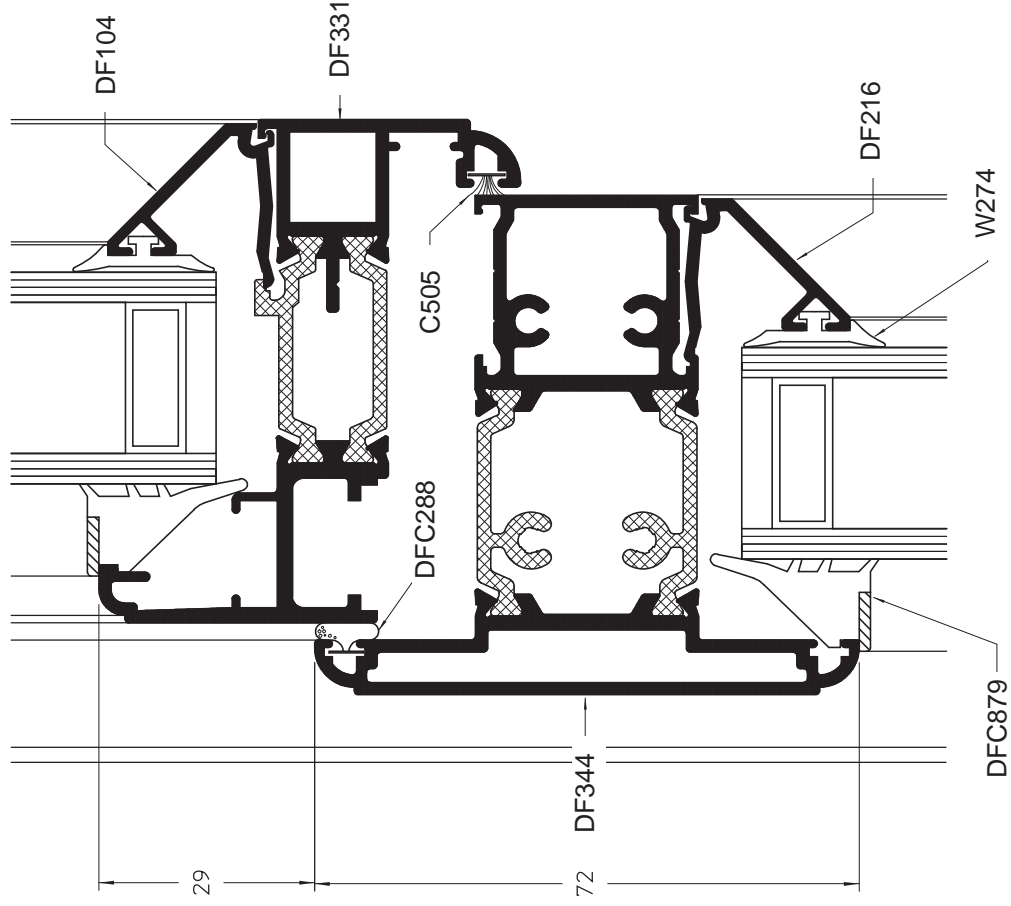


Heavy Duty Softline Vent Frame

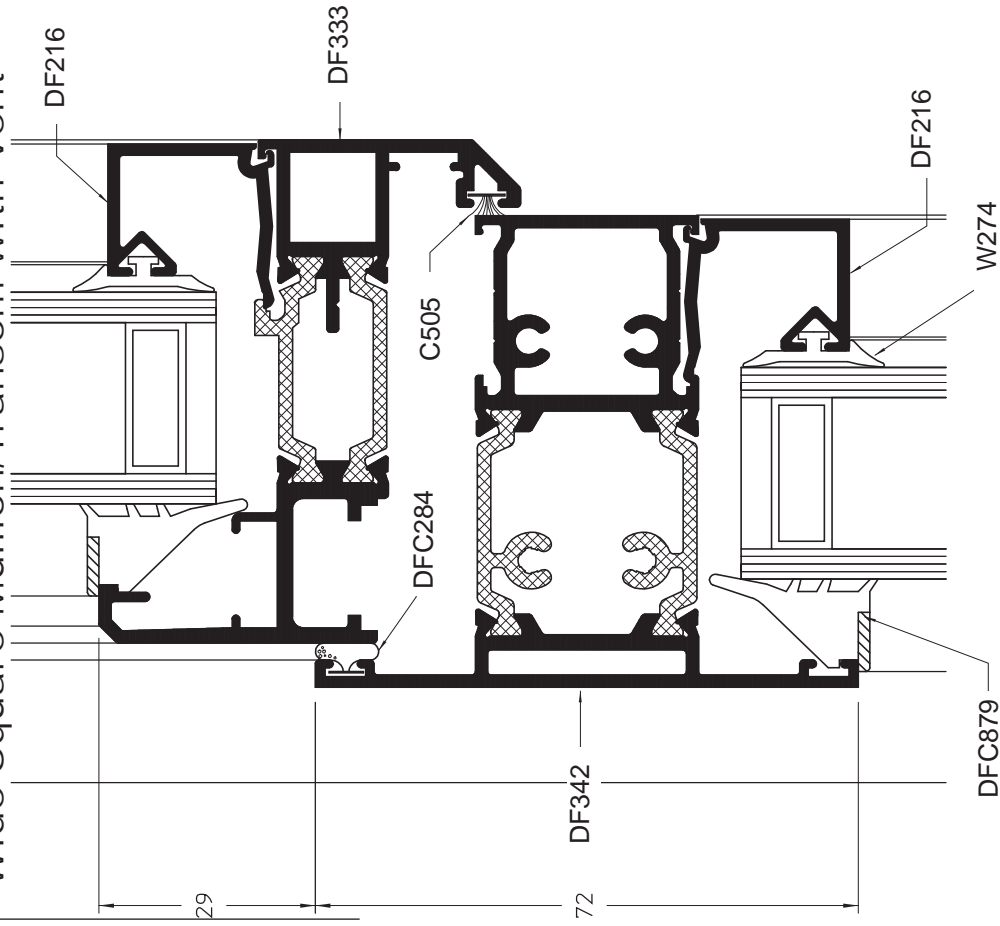


GENERAL ARRANGEMENTS

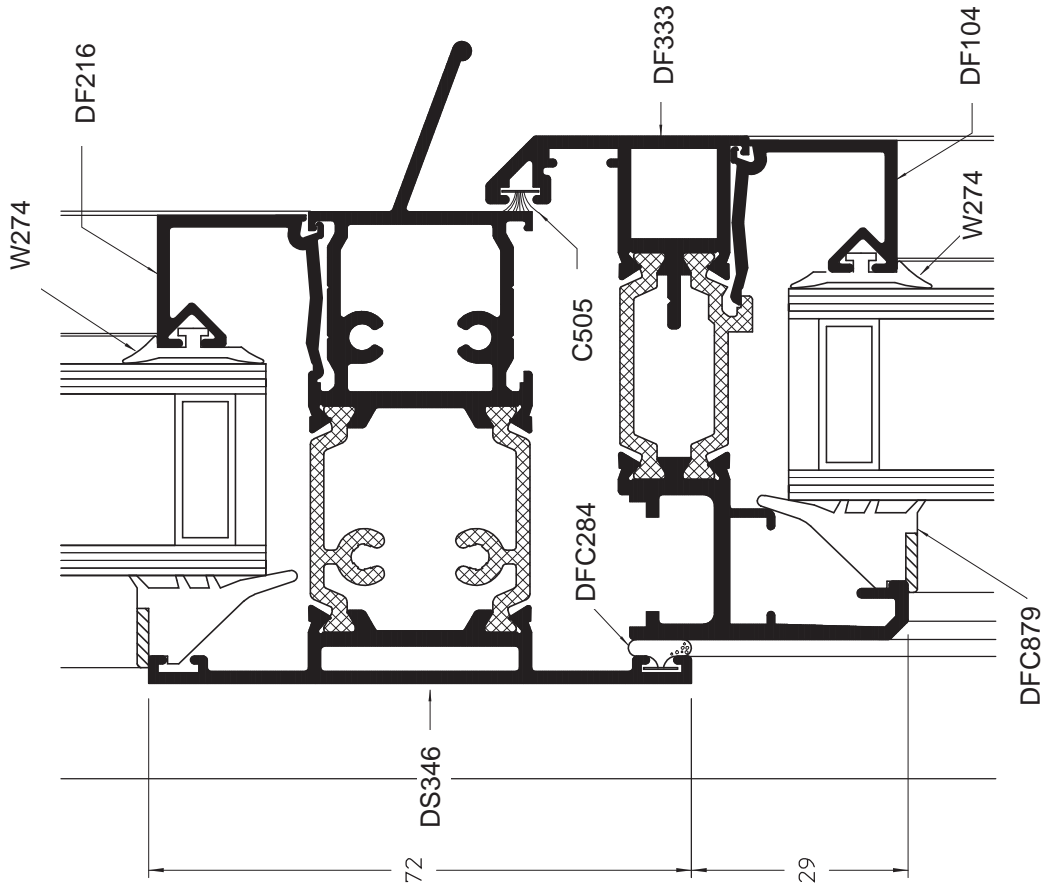
Wide Softline Mullion/Transom with Softline Vent



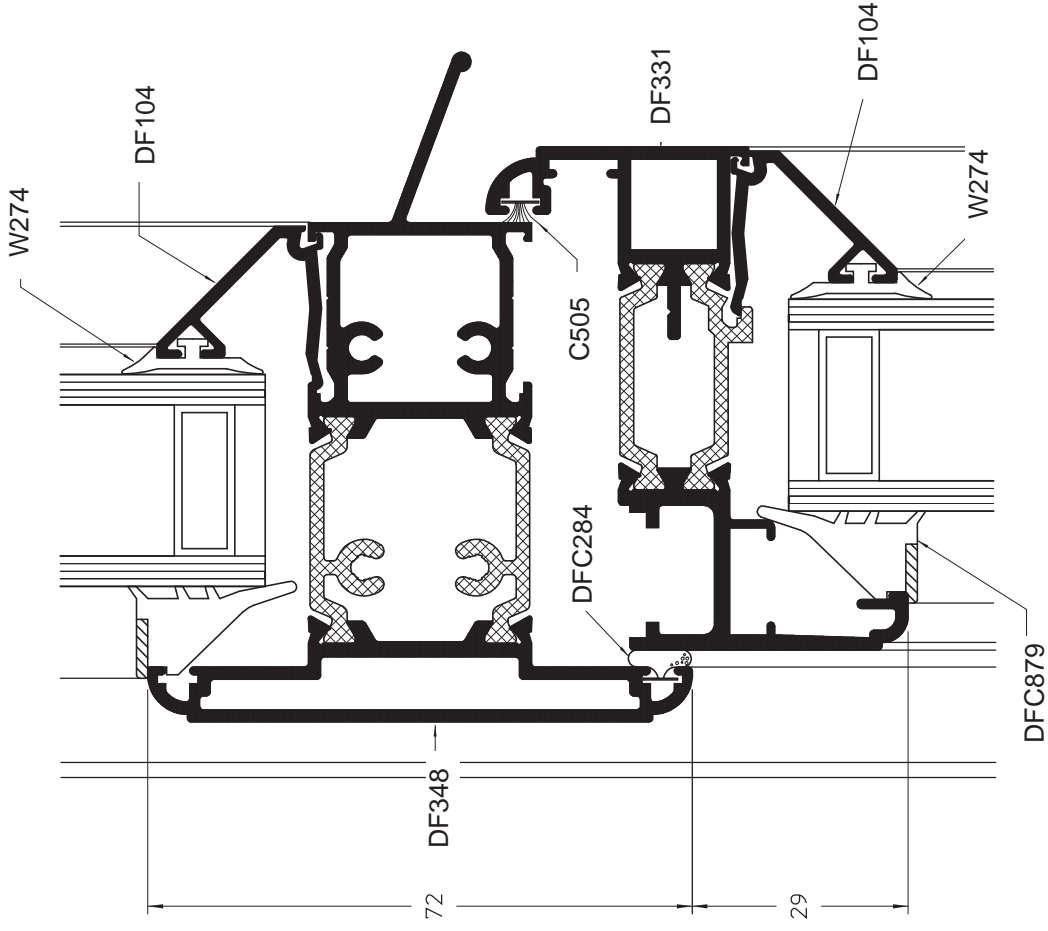
Wide Square Mullion/Transom with Vent



Wide Square Transom with Drip



Wide Softline Transom with Drip

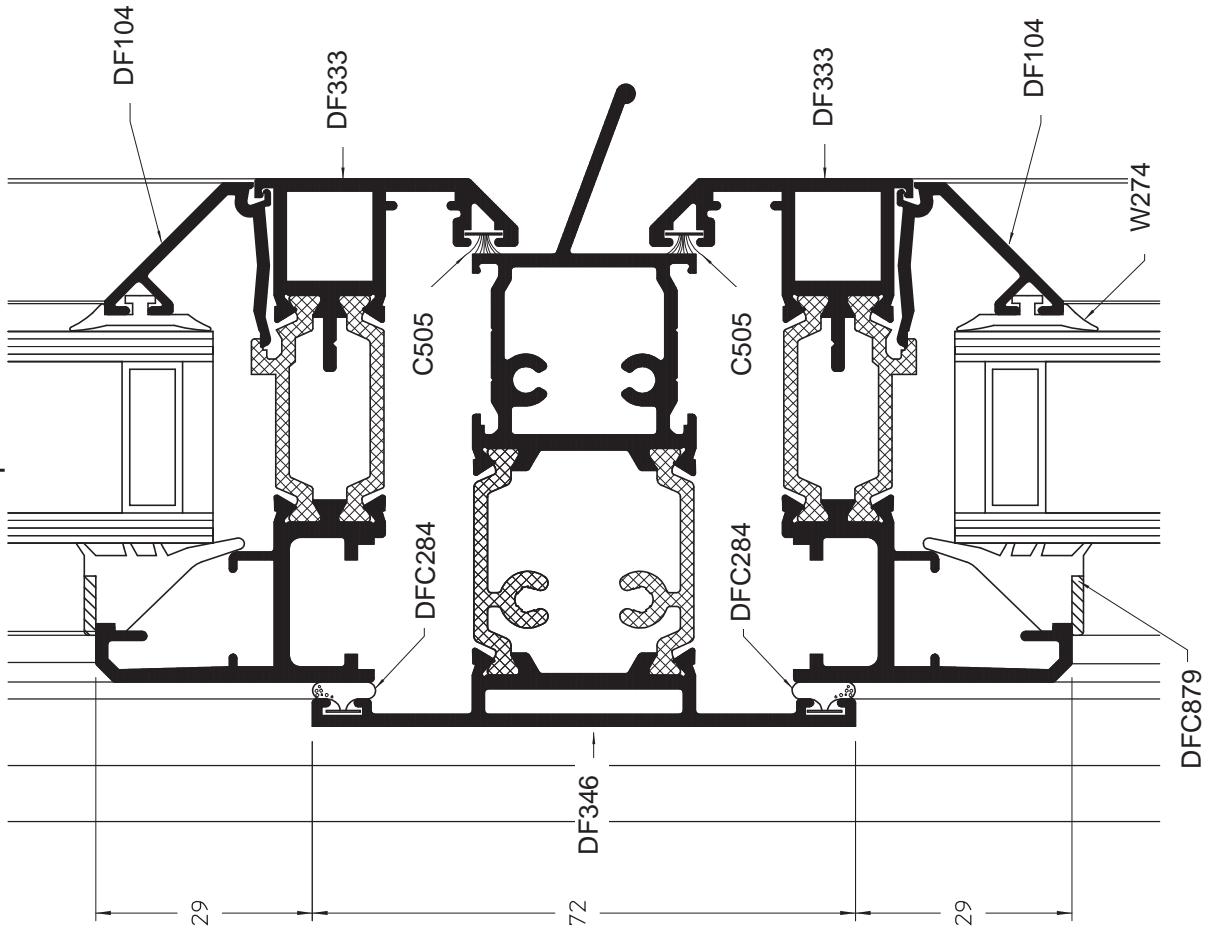


DUALFRAME

75mm Casement Window

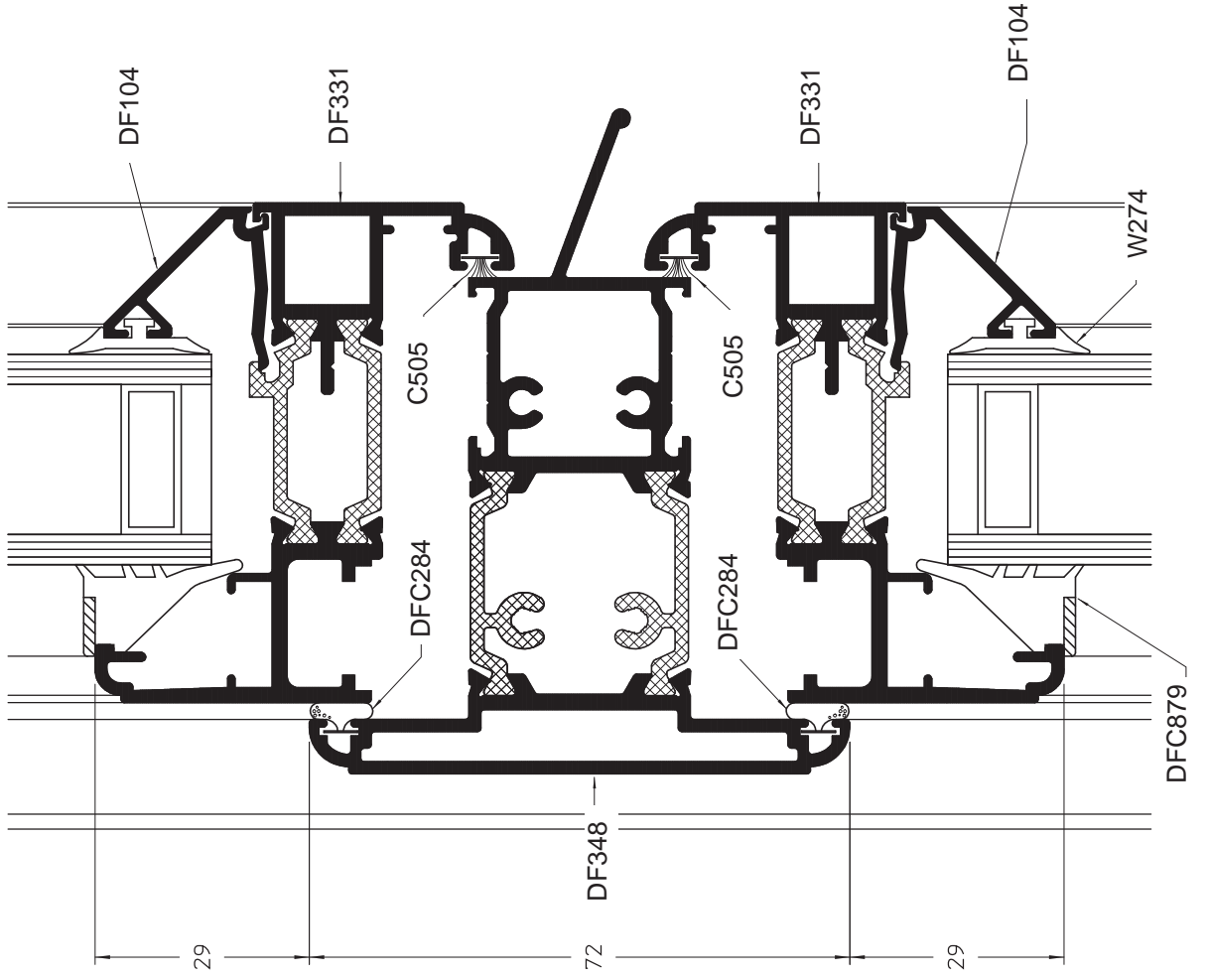
Wide Square Transom with Drip Vent / Vent

GENERAL ARRANGEMENTS

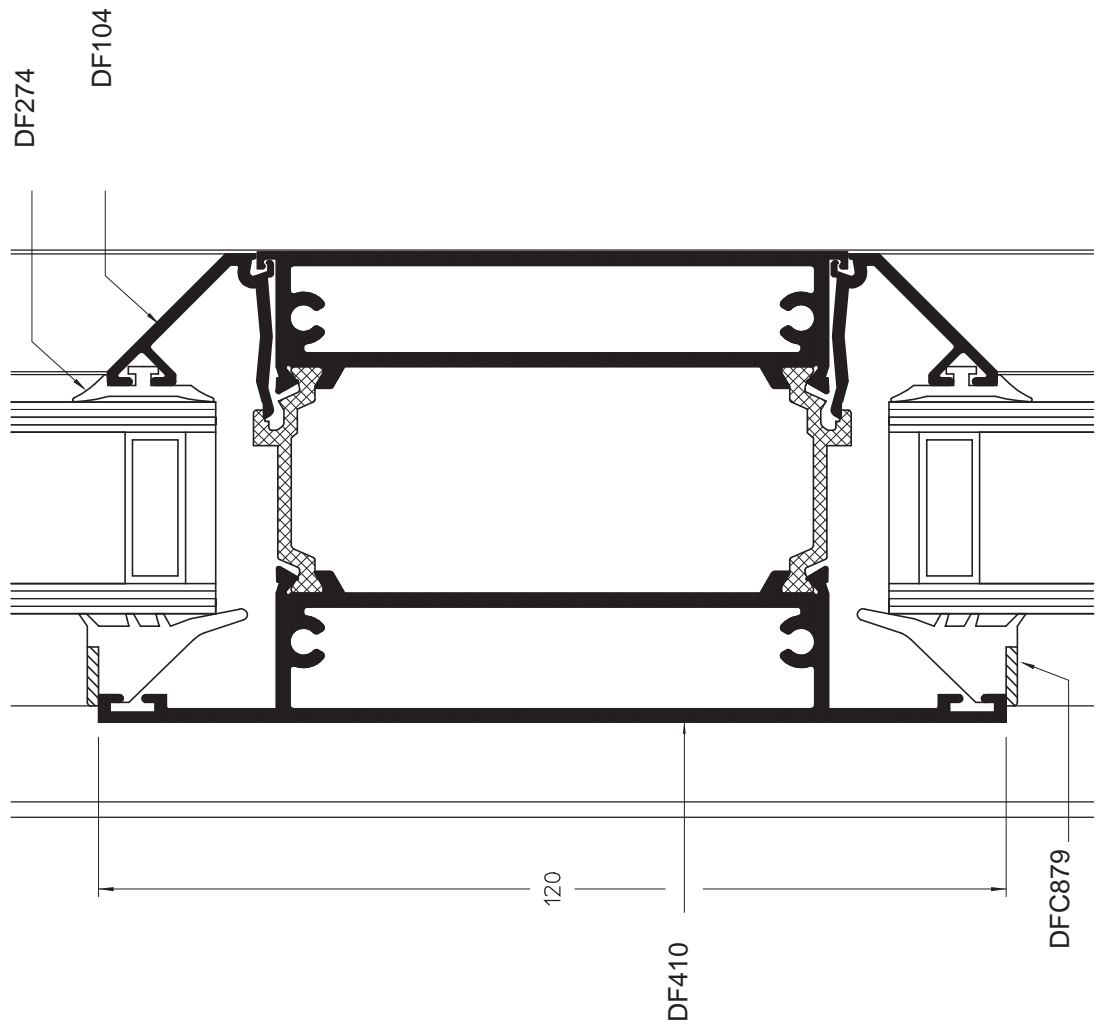


sapa:

Wide Softline Transom with Drip Vent / Vent



120mm Midrail



DUALFRAME

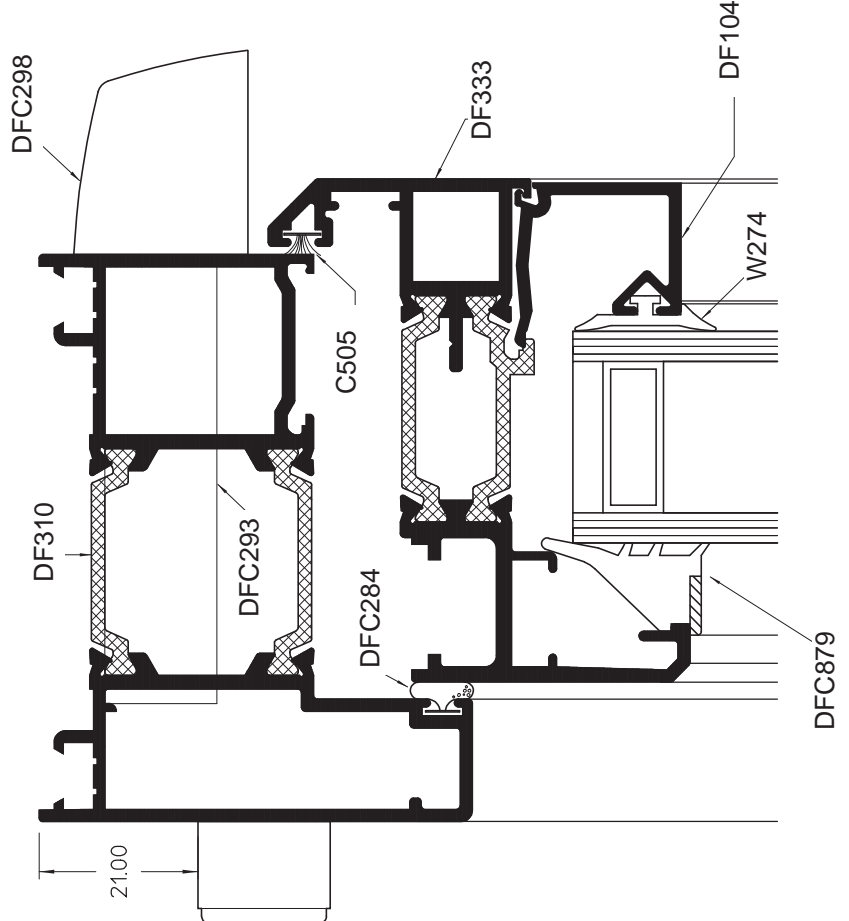
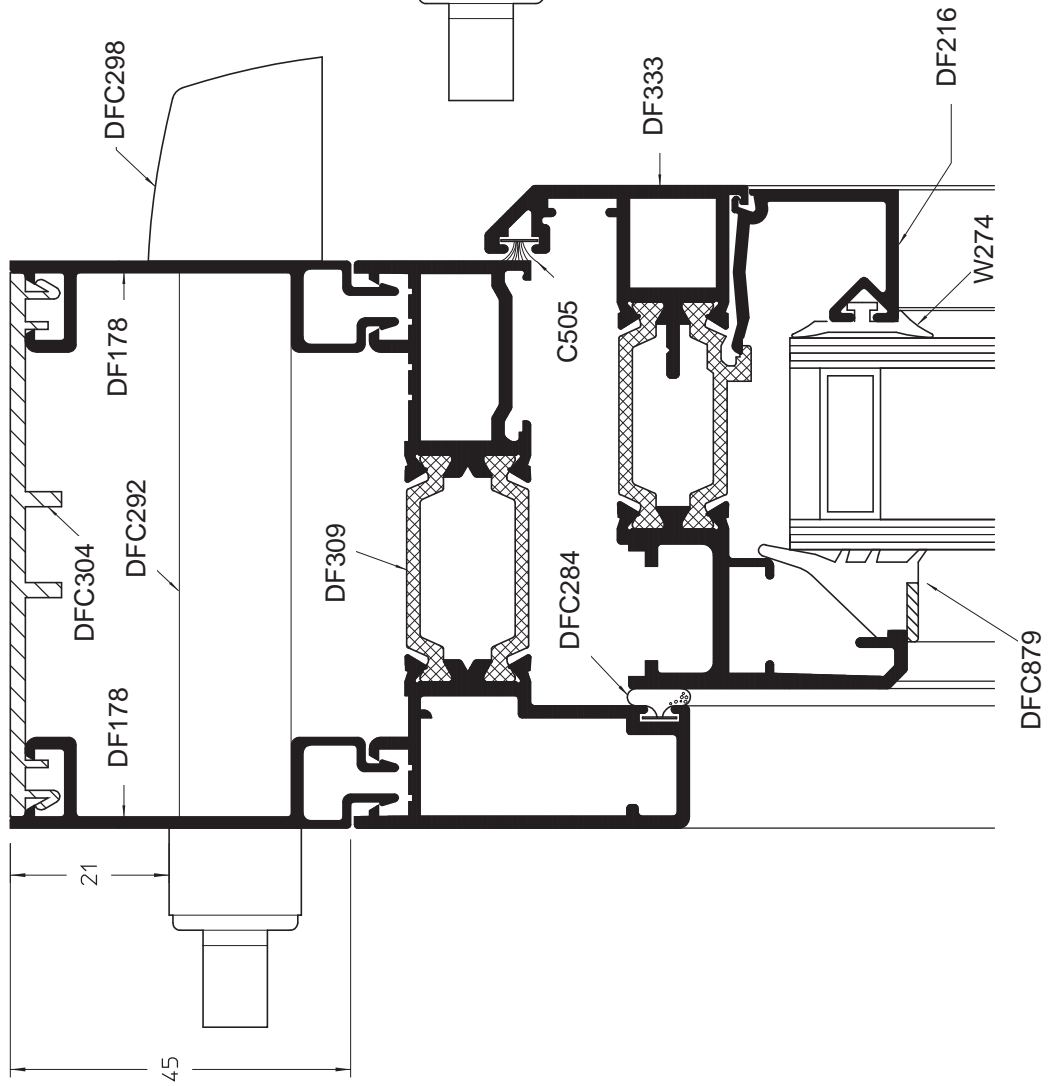
75mm Casement Window

sapa:

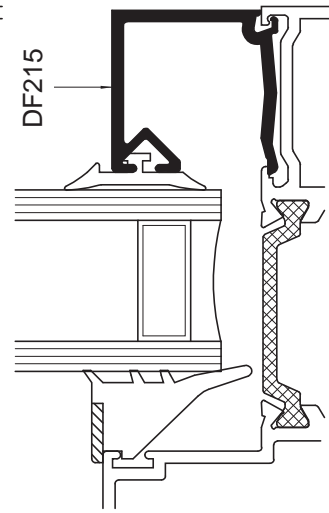
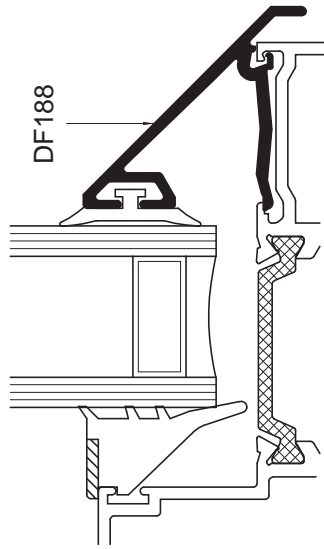
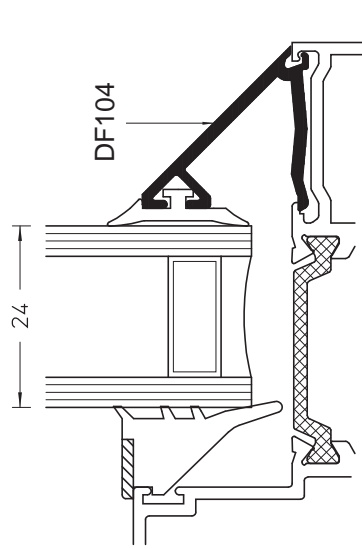
GENERAL ARRANGEMENTS

Frame Extender / Trickle Vent

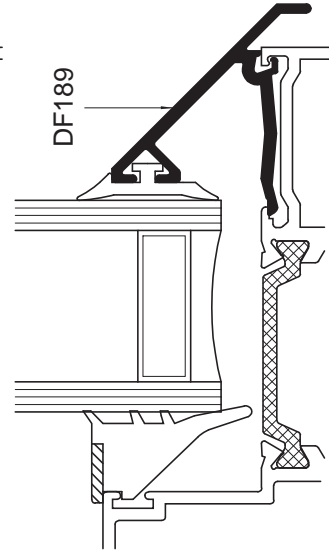
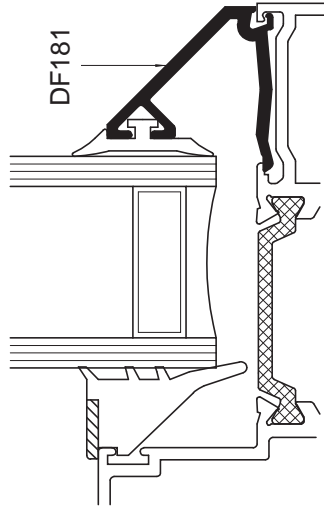
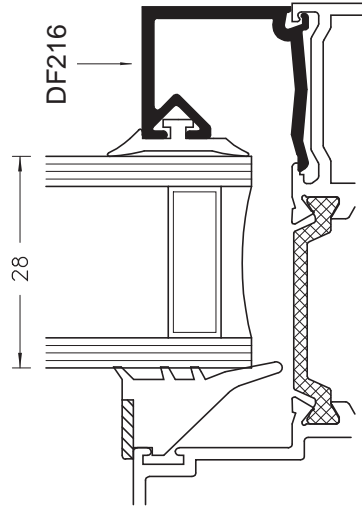
Extended Outerframe / Trickle Vent



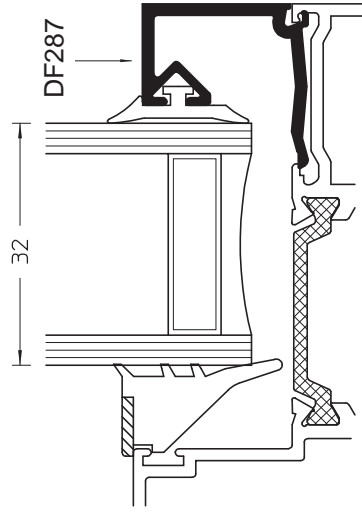
24mm Glazing Bead Options



28mm Glazing Bead Options



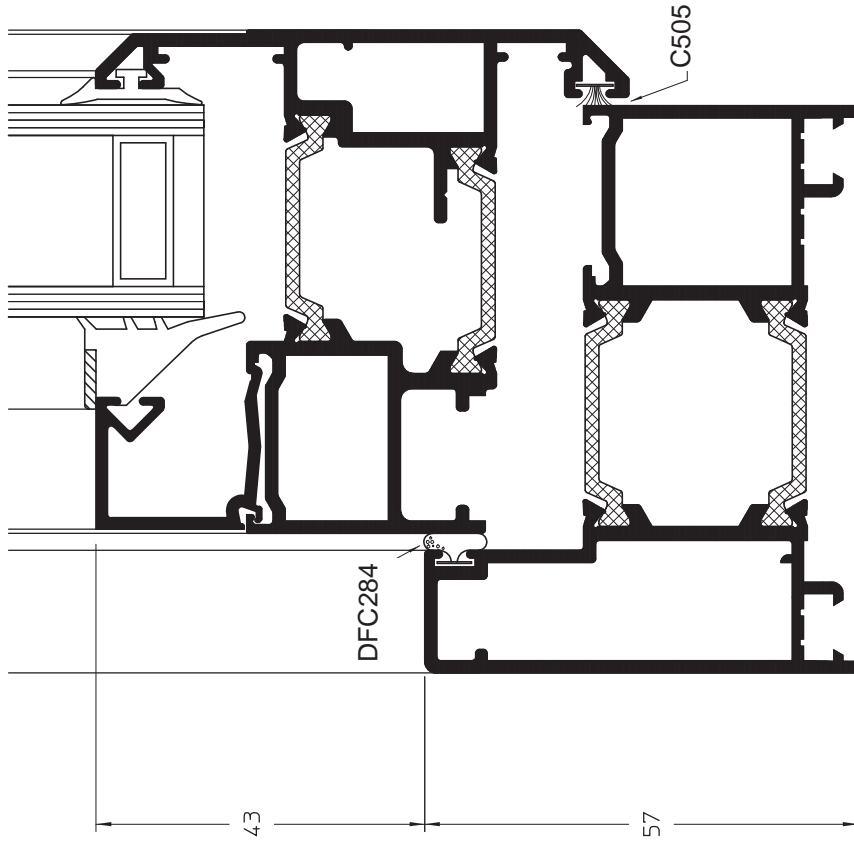
32mm Glazing Bead Options



GENERAL ARRANGEMENTS

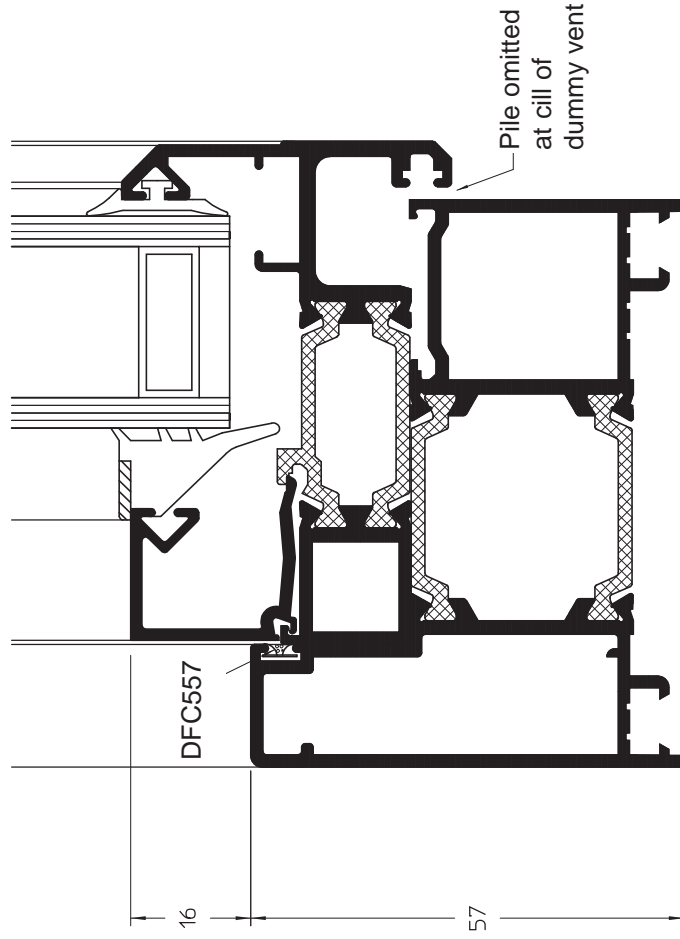
Internal Glaze Vent

(Showing Extended Square Frame & Square Bead)

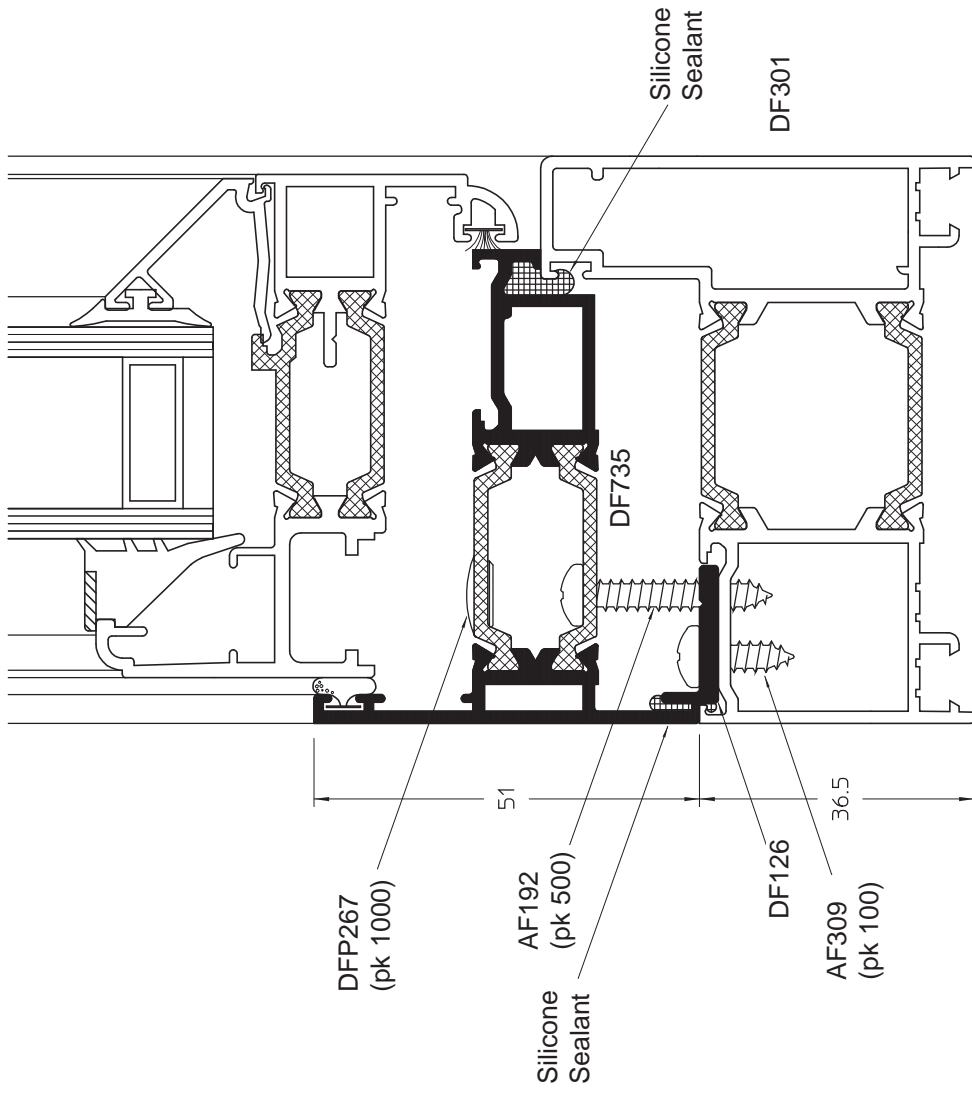


Internal Glaze Dummy Vent

(Showing Extended Square Frame - note that square beads must always be used with Internal Glaze Dummy Vent)



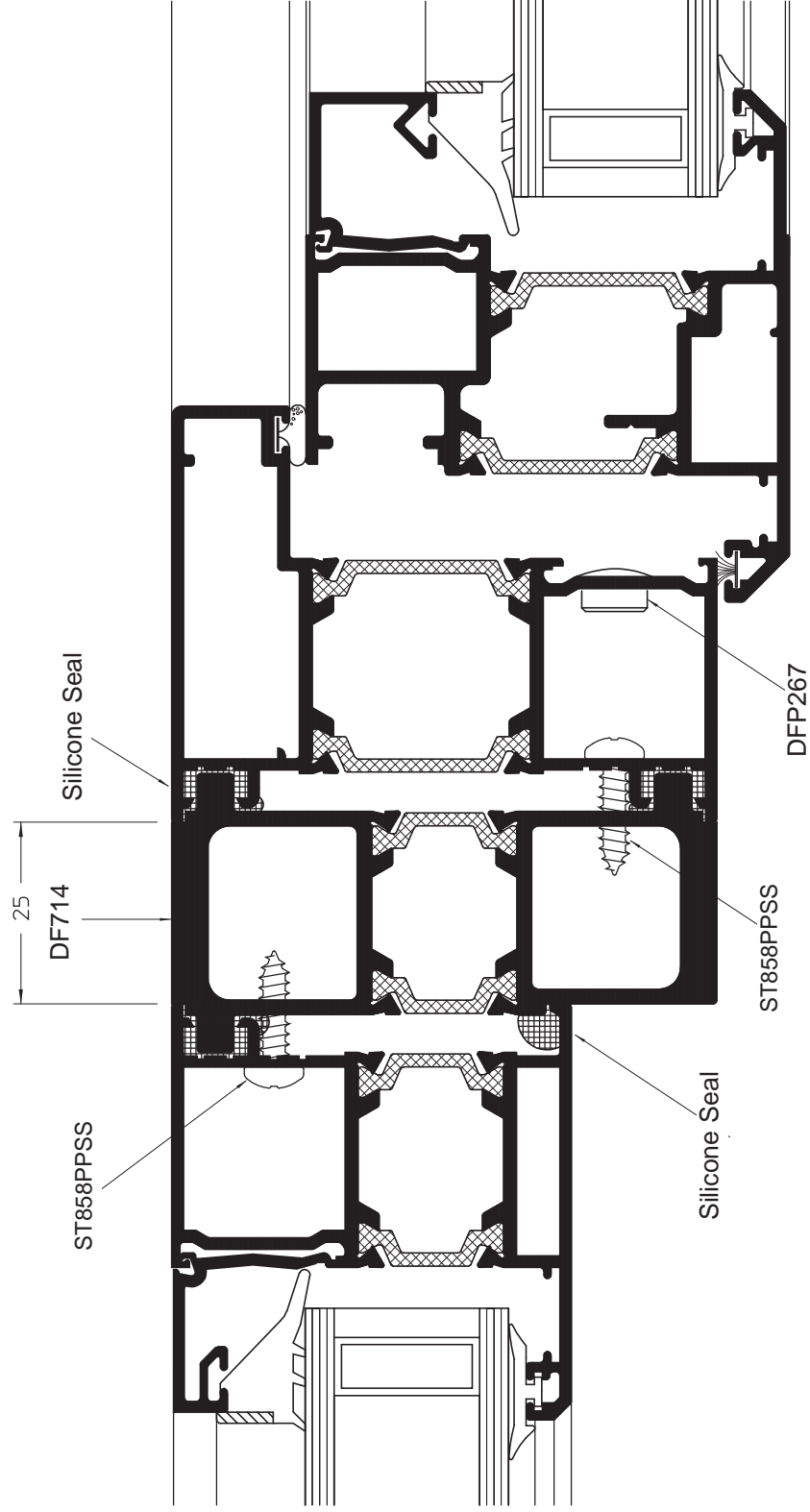
Reverse Rebate Adaptor



GENERAL ARRANGEMENTS

55mm to 75mm Coupler

(Showing extended square frame - Note for use with 55mm glaze in profiles only)



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Brochure reference DFC63 0809

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