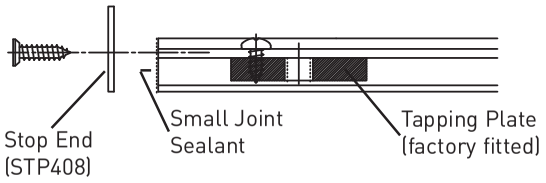
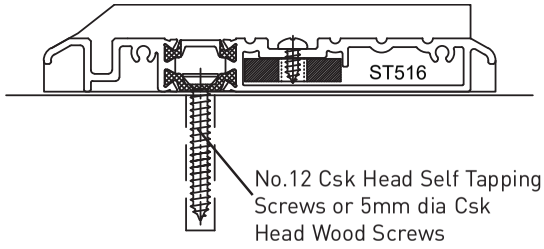
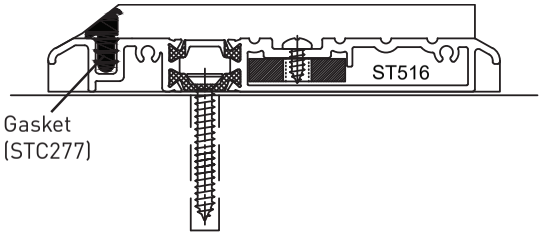
INSTALLATION - FRAMING - 1

Assembly and Fixing of Universal Threshold

Coat ends of Threshold with small joint sealant and fit Stop Ends (STP408) with 2 off No.8x5/8" Truncated Csk Self Tapping Screws. The Threshold must be securely fixed down to the structure through counterbored holes in the polyamide thermal break at max 600mm centres using appropriate fixings. Ideally the Threshold should be bedded on mortar and packed at each fixing point to achieve a flat level finish prior to the fitting of any door leaf/framing profiles. Run a continuous length of Universal Threshold Gasket STC277 in the groove in the Threshold profile and trim off upstand in door leaf locations as indicated on page 6-4

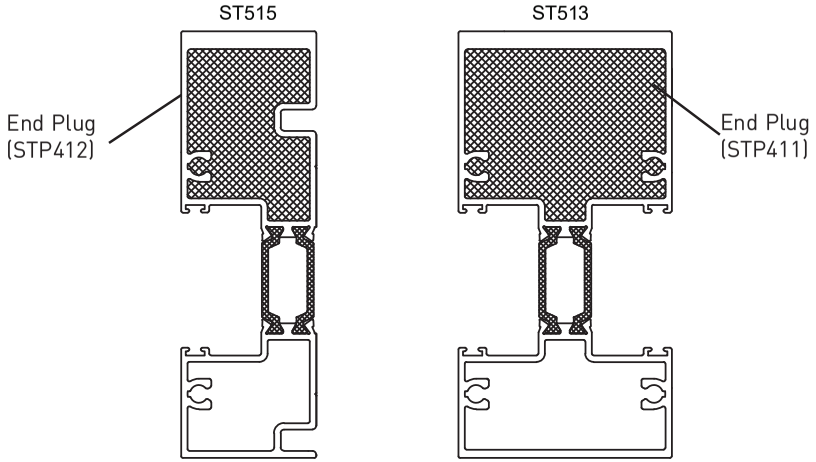


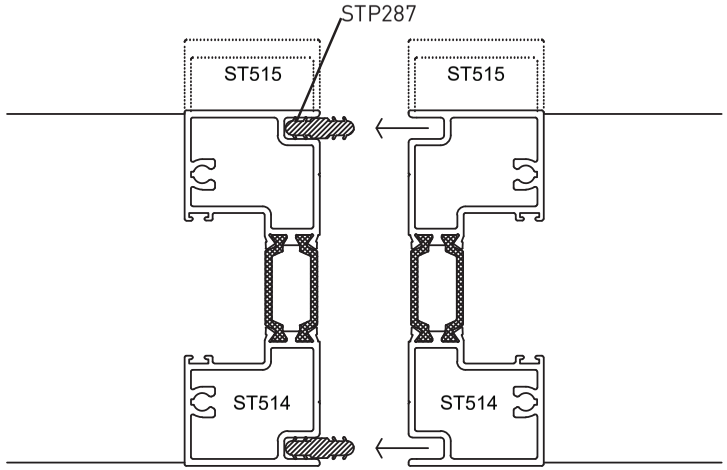




Assembly of Composite Frames

Ensure that the appropriate Plastazote End Plugs are fitted to the top and bottom of the 120mm profiles ST513 and ST515. Insert a length of Half Mullion Jointing profile STP287 into both grooves in one of the Half Mullion profiles ST513 or ST515 and assemble composite frames together by slotting the next frame onto the joining profiles.

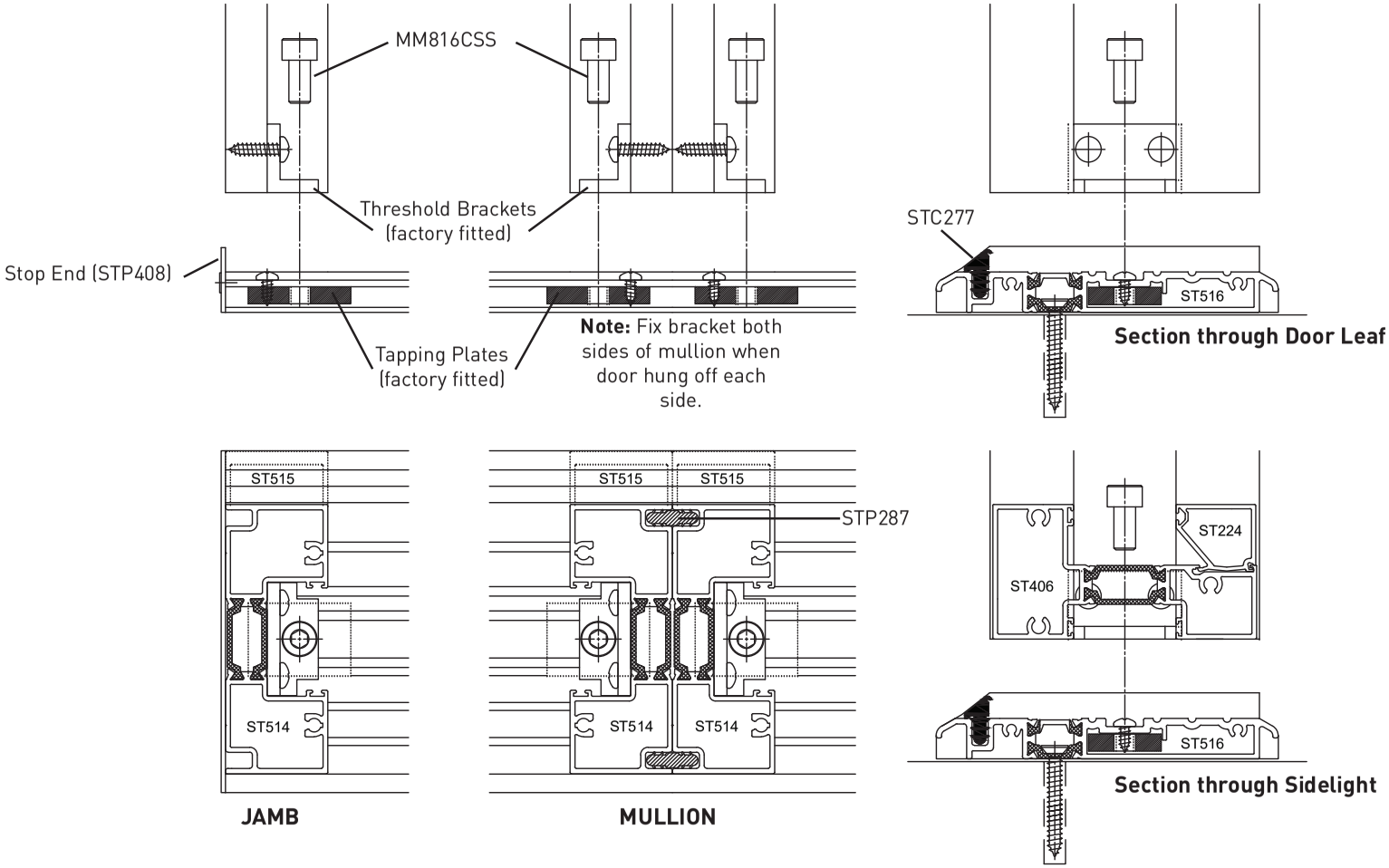




INSTALLATION - FRAMING - 2

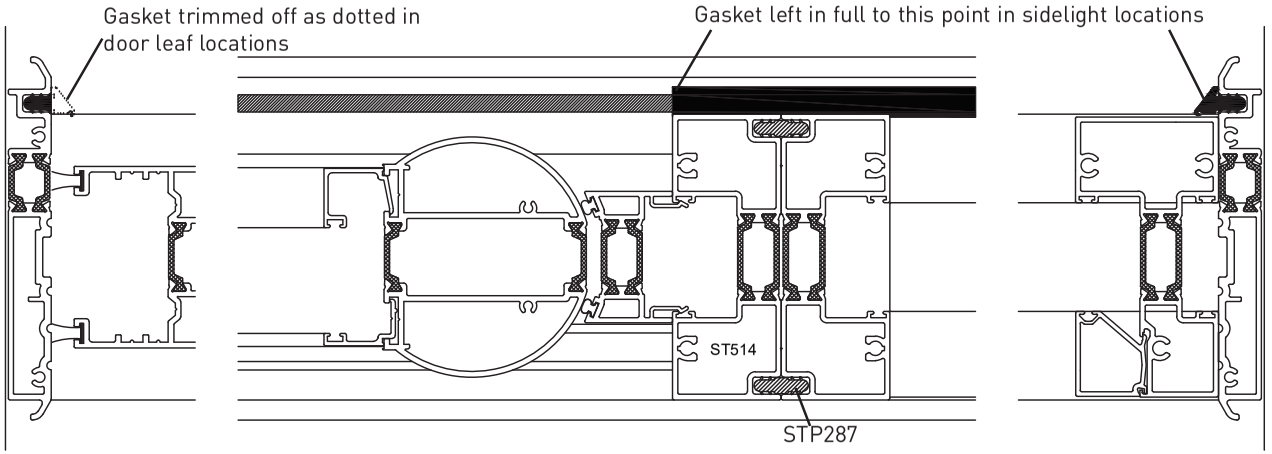
Fixing of Composite Frames to Universal Threshold

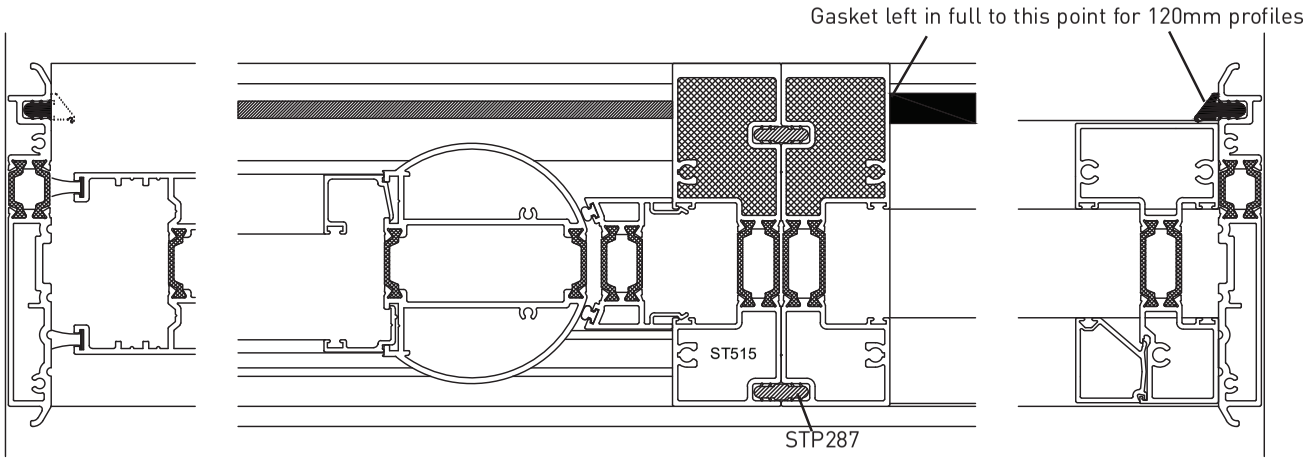
Coat the ends of each Jamb or Mullion profile with small joint sealant and position on top of the Threshold ensuring that the hole in the pre-fixed threshold bracket lines up with the hole in the threshold profile / tapping plate and fix in position with 1 off M8x16mm Socket Cap Machine Screw (MM816SCSS). Clean off excess sealant from exposed surfaces.



INSTALLATION - FRAMING - 3

Final Preparation of Universal Threshold Gasket





INSTALLATION - FRAMING - 4

Fitting Frame To Aperture

Prior to installing the frame, the opening should be checked to ensure that it is free of debris, and that any projecting brickwork has been trimmed back.

Any damaged damp proof membranes should be replaced or additional membranes incorporated.

When the opening was originally measured an appropriate gap should have been allowed around the framing, this will allow the frame to be packed to ensure that it is plumb and square within the opening.

The frame can then be positioned in the opening and held square by packing at the very corners of the frame, taking care not to damage or deform the profiles.

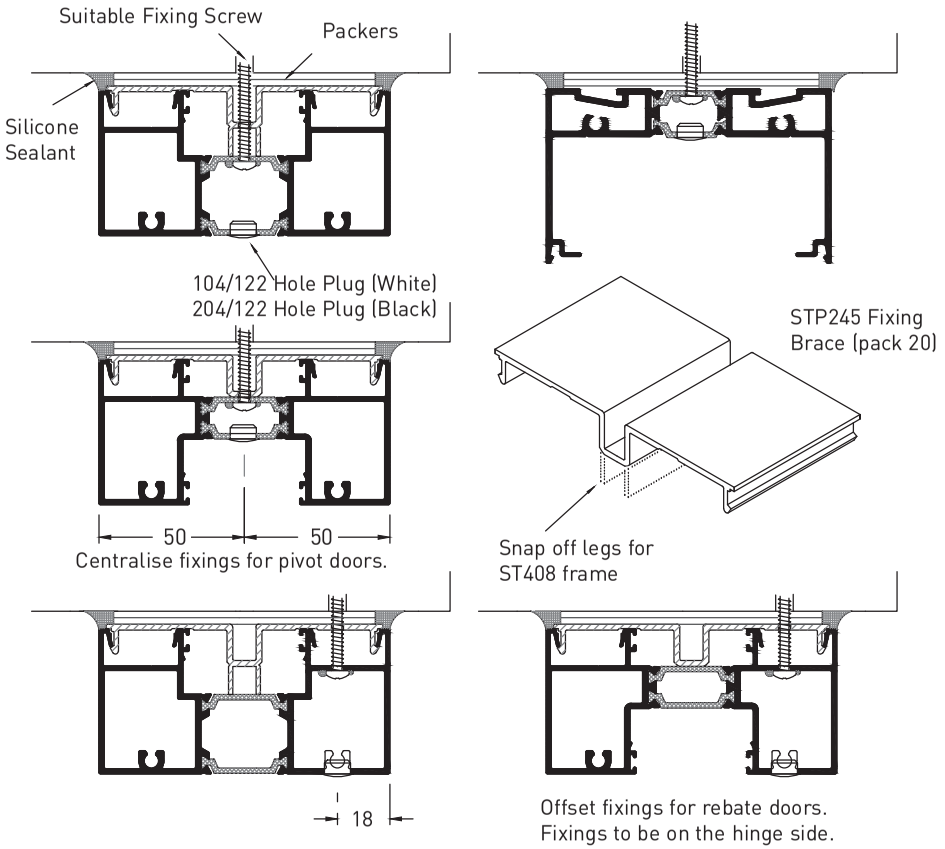
To check for squareness, measure the diagonals from corner to corner, these diagonal dimensions should not differ by more than 2mm, if they do then adjust the packing until the frame is square within the opening.

The frame should be checked for plumb using a spirit level on the jambs and mullions. On replacement frames, the correct position of the frame might not align with the original, therefore, some remedial work to make good the plaster reveal around the frame on the inside as well as any render that is present on the outside will be required.

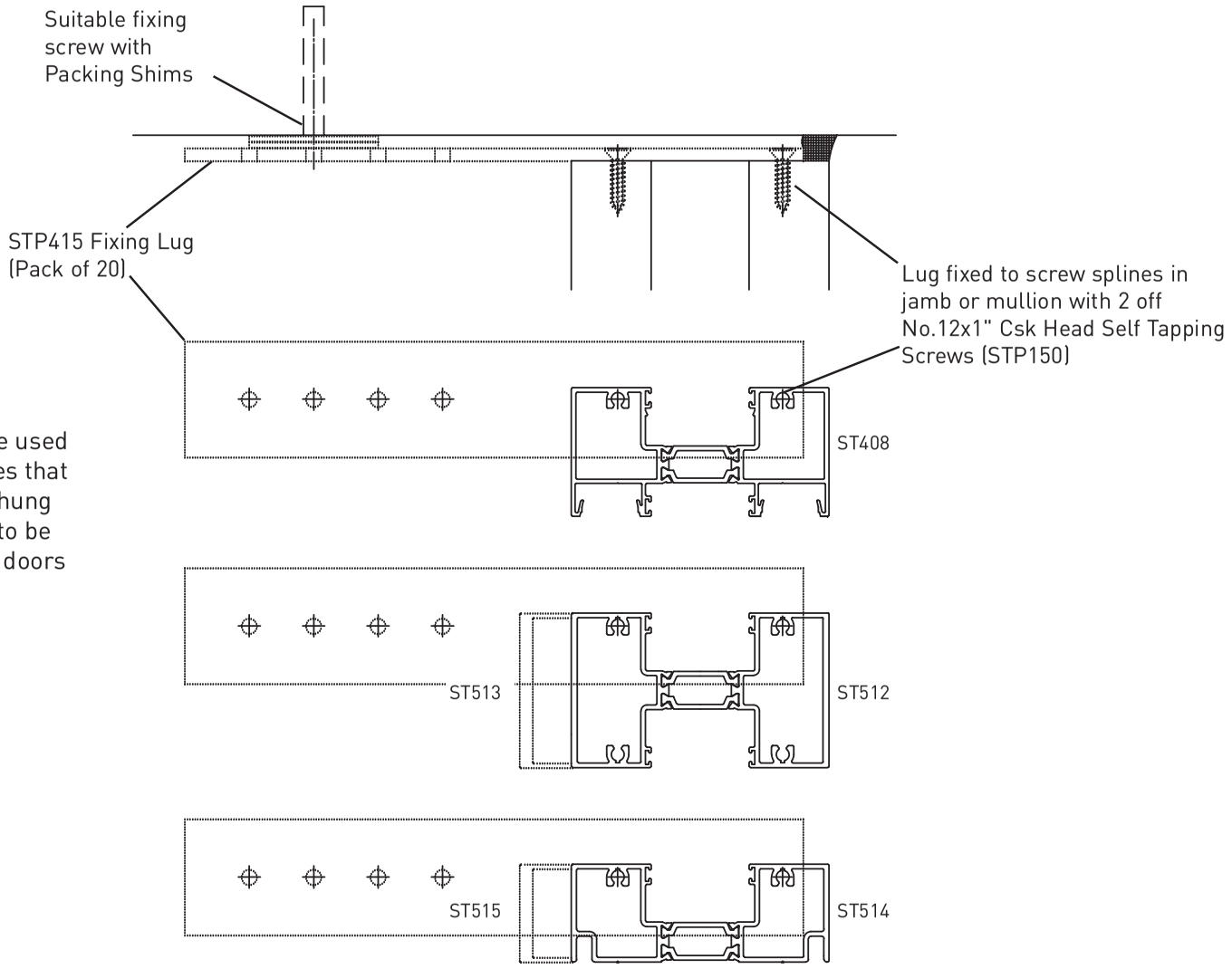
Frame to masonry fixing points should be 150mm from each corner and not more than 450mm apart. Clip in frame fixing brace STP245, in line with all frame fixings.

Drill a clearance hole through frame members for fixing screws at appropriate fixing centres. When securing the frame into place, do not over tighten as this may distort the outer frame. All screw head clearance holes must be plugged and sealed.

Note that fixings for rebate doors are not centrally located in the outer frame, but are offset with the door leaf. Always position a fixing in line with door hinges adding an extra fixing if necessary.



INSTALLATION - FRAMING - 5

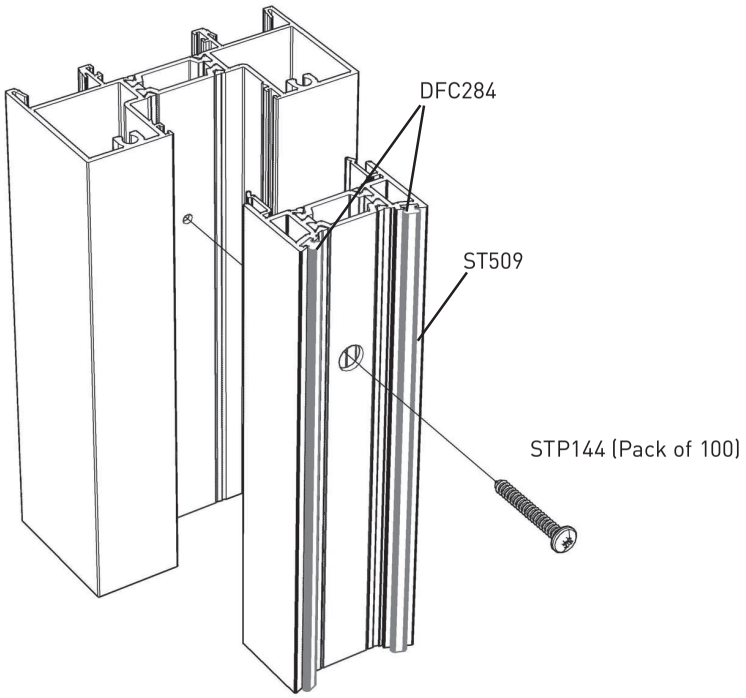


Note:
Fixing lugs are only to be used on jamb / mullion profiles that have centre pivot doors hung off them and must NOT to be used for hinged rebated doors

Anti Finger Trap Jamb Adaptor ST509

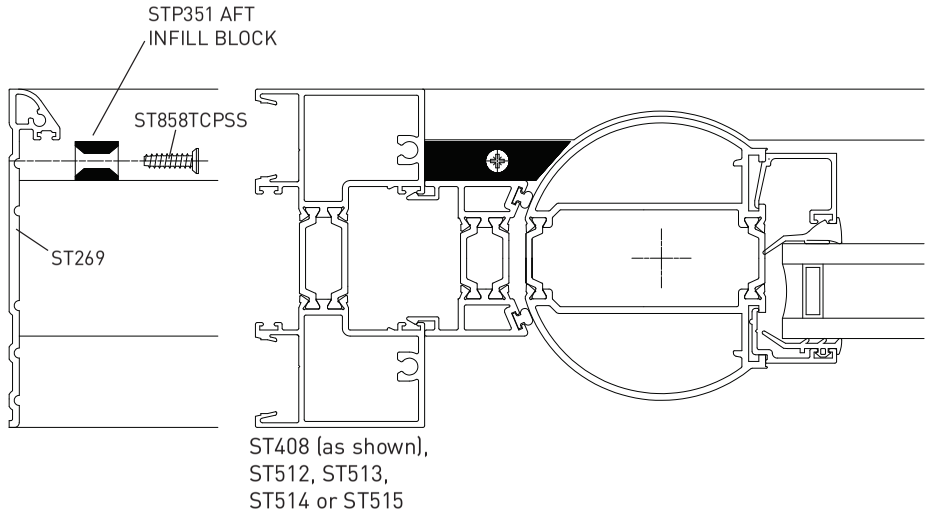
The jamb adaptor is fitted to the hanging jamb of centre pivot doors, with an anti finger trap stile. This operation is performed after the outerframe has been fitted into the opening.

Insert DFC284 into both seal recesses, the full length of the profile. Run silicone sealant along both clip in legs, then clip the adaptor onto the jamb. Now spot through the pre drilled holes in the adaptor with a 3.5mm dia drill into the jamb. These holes should be positioned at 50mm from each end and at max. 600mm centres. And finally secure in place with No. 8 x 1 3/4" pan head self tap screws (STP144 pack of 100).



Anti Finger Trap Jamb Adaptor with Rebated Threshold ST269

Drop the AFT infill block (STP351) into the void between the jamb adaptor and upstand of the rebated threshold profiles and drill 3.5mm dia hole in the base of the rebated threshold. Fix block in position using No.8 x 5/8" csk head truncated self tapping screw (ST858TCPSS) supplied with the infill block.



INSTALLATION - DOOR HANGING

Door frame installation will have been completed with the general frame work.

Centre pivot doors

The printed instructions provided with every door closer should be followed meticulously when hanging a centre pivot door leaf. The following points are given in addition to these instructions to assist the installer.

The instructions and the following points must be observed.

Door leaves are prepared for end or side load applications in the factory. Particular attention should be given to accurate and secure assembly of closer spindle into closer arm.

Bottom pivot

Special consideration must be given to floor pivot before hanging of door.

Accuracy of positioning is essential and height to be adjusted to give an 8mm gap between the bottom of the door and the threshold. Dead load of door must not be carried by an unsupported floor pivot component or threshold profile. Ensure that there is adequate packing between floor and pivot component.

Security of closer accessories

Before proceeding with door hanging, ensure that all door frame accessories are secure:-

- Door closer fixing brackets.
- Door closer.
- Bottom pivot assembly.

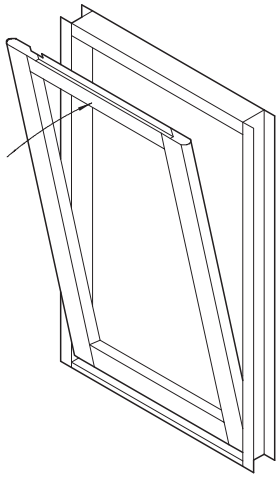
Check that door leaf accessories are secure:-

- Closer arm adjusting shoe.
- Bottom pivot bearing housing.

Side load door leaves

Position bottom of door on floor pivot with side load cut-out facing closer spindle. Swing top of door into position ensuring that closer spindle engages fully and correctly with closer arm. Fit clamping piece to closer arm ensuring that socket head screws are tightened evenly and firmly.

Side load door



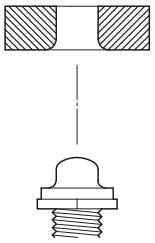
INSTALLATION - DOOR HANGING

End load door leaves

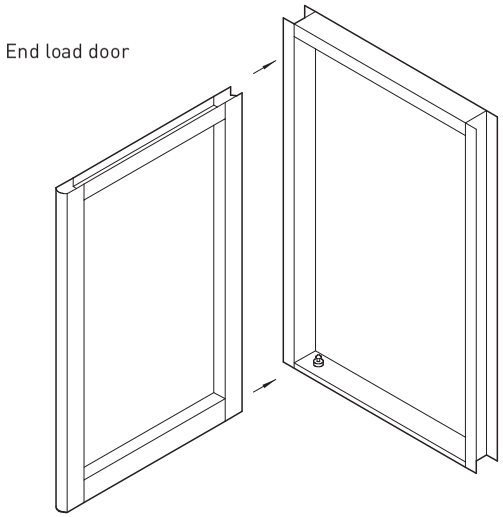
Place thrust bearing on floor pivot with the radiused inside edge facing down.

For closers without hold-open facility, fully close both regulating valves (turn clockwise). This will help to hang the door, in that the closer will tend to return very slowly to closed position.

Use a 14mm spanner to rotate the spindle to 90º open position taking care not to damage machined faces of closer spindle. With door upright in 90º open position, slide door leaf into position so that the floor pivot spring catch and closer arm engage with the floor pivot and closer spindle. Ensure that full engagement is achieved at the top and bottom of the door. Fit clamping piece to closer arm ensuring that socket head screws and washers are fitted, tightened evenly and firmly.



Detail Showing thrust bearing

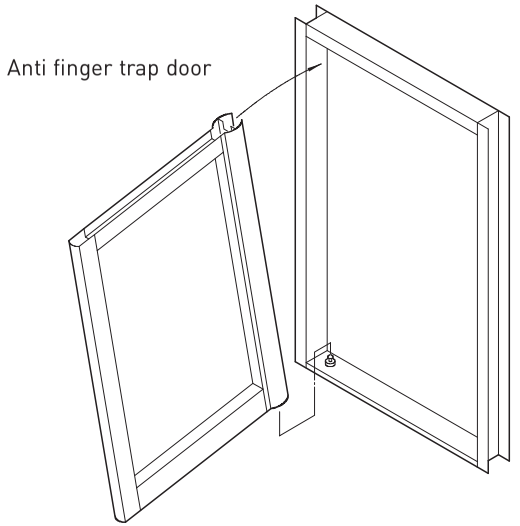


Anti finger trap door leaves

All Anti finger trap doors are prepared for end load application, but are fitted with a side load type bottom shoe.

For closers without hold-open facility, fully close both regulating valves (turn clockwise). This will help to hang the door, in that the closer will tend to return very slowly to closed position.

Use a 14mm spanner to rotate the spindle to 90º open position taking care not to damage machined faces of closer spindle. With door slightly tilted in the 90º open position, lift the bottom shoe onto the bottom pivot ensuring that the bearing fully engages onto the pivot point. Tilt the top of the door up onto the closer spindle ensuring that the spindle locates into the top arm. Fit clamping piece to closer arm ensuring that the socket head screws and washers are fitted, tightened evenly and firmly.



INSTALLATION - DOOR HANGING

Pivot door alignment with frame

The top of the door leaf may be moved towards or away from the jambs by adjustment of the closer arm.

Open door and slacken socket head countersunk screw in top of closer arm.
Adjust door by turning the adjustment screw in the closer arm:-

Hex head screw at lock stile end of closer arm (Anti Finger Trap)
Grub screw at closer spindle end of closer arm (End & Side load)

After adjustment has been made, ensure that adjustment screw bears firmly against end of closer arm then re-tighten the countersunk screw in the top of the closer arm.

To centralise the lock stile with the jamb, neutral position is regulated by two hex head bolts at the top of closer arm which should be locked tightly in opposition. (If necessary one bolt may be omitted to obtain maximum adjustment in which case the remaining screw is securely tightened to hold arm against opposite flange.)

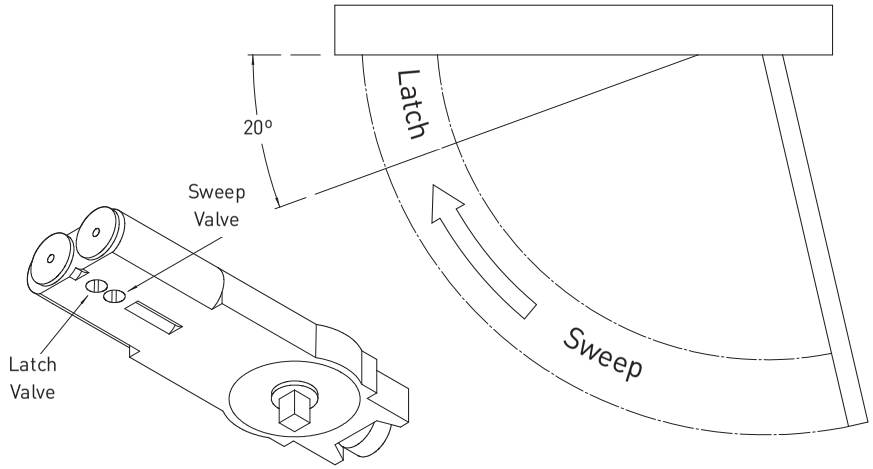
The bottom of the door leaf may be moved towards or away from the jambs by adjustment of the floor pivot shoe. (The door leaf will have to be taken out of the frame for this operation.)

Slacken the two M6 fixing screws in the floor pivot shoe then slide shoe in the required direction and re-tighten fixing screws. When the desired adjustment has been made, drill a 4.2 dia hole through the final fix hole in the shoe into the door leaf and secure in place with a No 10 x 3/4" pan head self tap screw (DFP508 - Pack of 100) (see page 5-5).

Standard closer operation adjustment

The door closing speed can be adjusted by two valves in the door closer.

The latch valve governs the speed at which the door latches.
The sweep valve governs the speed of door closure.



Adjust latch valve by opening door 20° and allowing it to close.
(clockwise = slower , anti-clockwise = faster)

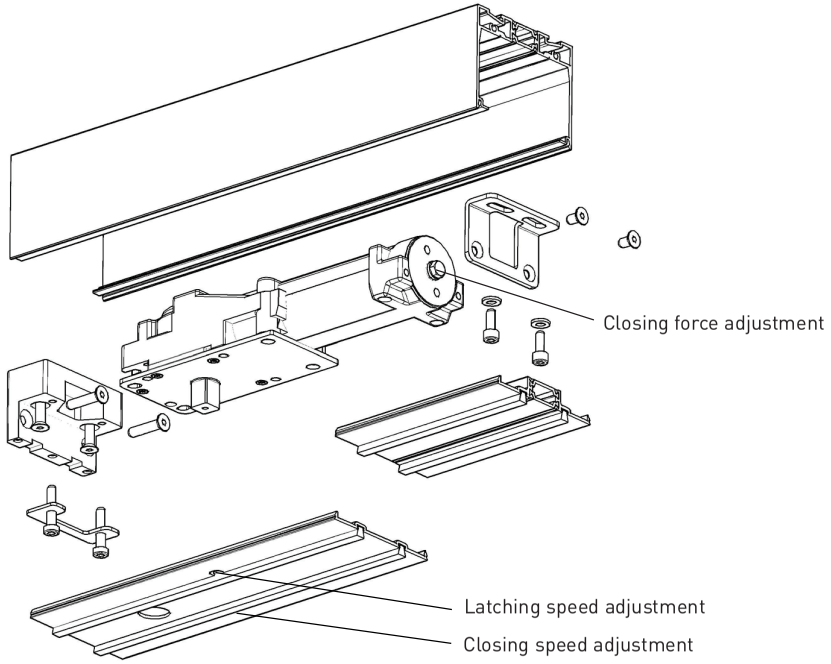
Adjust sweep valve by opening door 90° and allowing it to close.
(clockwise = slower , anti-clockwise = faster)

If the door closer fails to operate correctly, check security of assembly and make sure that all closer assembly details have been adhered to. If problems still persist then check strength of closer and replace if necessary.

INSTALLATION - DOOR HANGING

EA closer operation adjustment

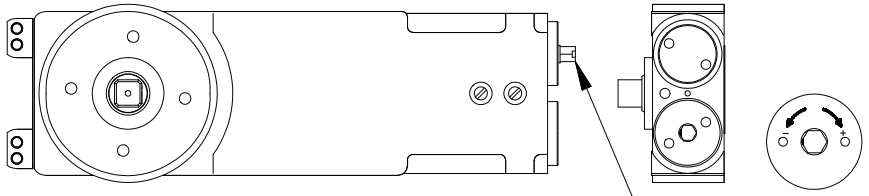
The closer has three adjustments, closing force (EN1 to EN4), closing speed, and latching speed. A flat bladed screw driver can be used to adjust the closing and latching speeds, but a 10mm socket or ring spanner must be used to adjust the closing force. The transom clip-in plate must be removed to gain access to the closing force adjusting nut. Turn nut clockwise to increase strength, and anti-clockwise to reduce strength to give the required opening force. The closer is delivered set at a strength of EN3. BS 8300-2 together with Building Regulationsa Approved Document M Volume 2 quote a maximum figure of 30N opening force when measured at 0° (closed) and 22.5N when measured between 30° and 60° open. It is stated that it is preferable that backchecks should not operate before about 80° open and that the max closing force should occur between 0° and 15° of final closing. This applies to the whole door as installed and is affected by size, hinges, seals and air pressure differences.



Sapa closer operation adjustment

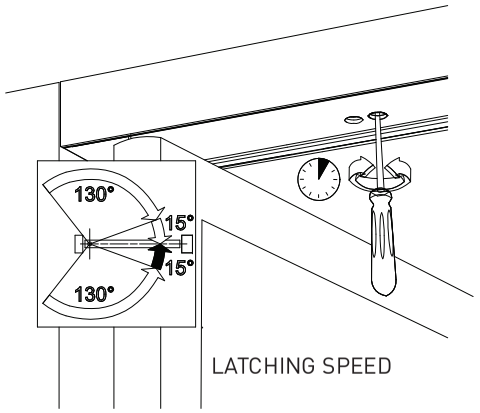
The closer has three adjustments, closing force (EN1 to EN4), closing speed, and latching speed. A flat bladed screw driver can be used to adjust the closing and latching speeds, but a 8mm socket or ring spanner must be used to adjust the closing force. The transom clip-in plate must be removed to gain access to the closing force adjusting nut. Turn nut clockwise to increase strength, and anti-clockwise to reduce strength to give the required opening force. The closer is delivered set at a strength of EN1.

POWER ADJUSTMENT

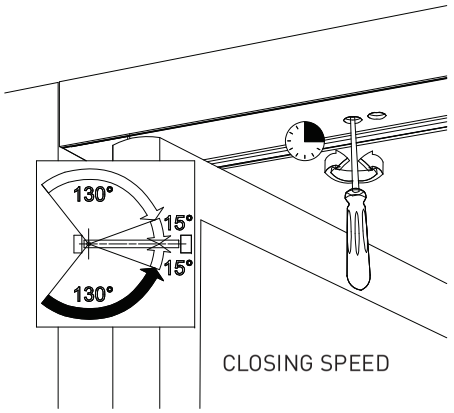


NOTE: FACTORY PRESET AT SIZE 1

SIZE 1	SIZE 2	SIZE 3	SIZE 4
+0	+2 TO +4	+5 TO +7	+8



LATCHING SPEED



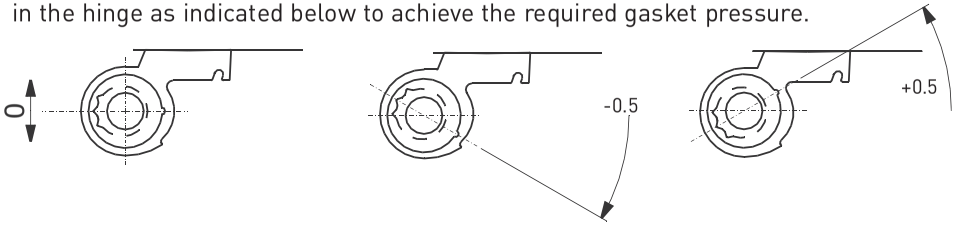
CLOSING SPEED

INSTALLATION - DOOR HANGING

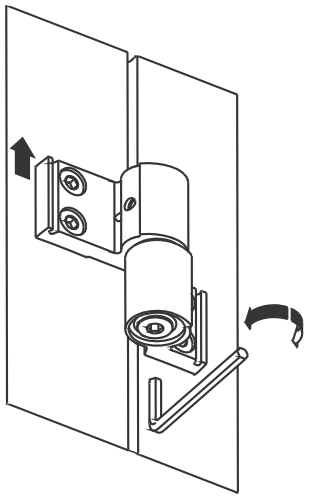
STP316 Pivot Hinge To Rebated Door

Offer the door leaf onto the door frame pivot hinges and check for operation and alignment. The hinge has three way adjustment as follows:

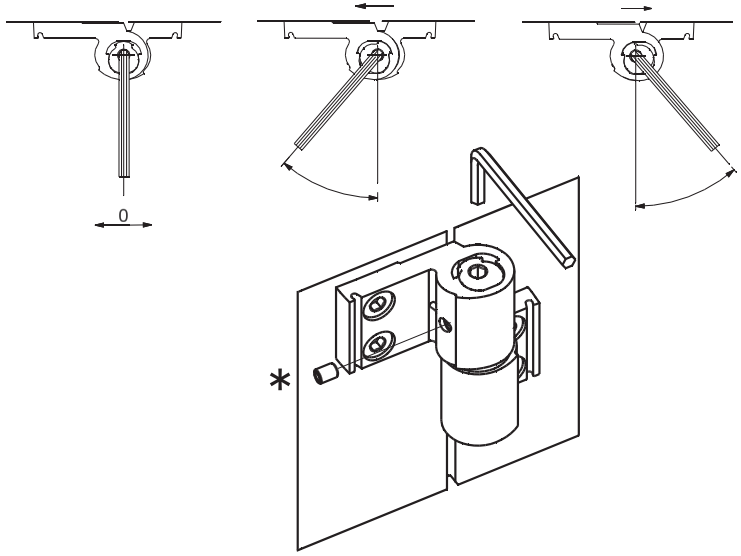
Gasket pressure (+/- 0.5mm) - Lift the eccentric bush in the lower hinge half until it rotates freely and then re-position the 3 x vertical serrations in relation to the grooves in the hinge as indicated below to achieve the required gasket pressure.



Vertical (Up And Down) Adjustment (-1.5 + 1.5mm) - Insert 6mm Allen key into the height adjustment grub screw in the base of the lower hinge half and turn clockwise to raise the upper hinge assembly to the required height.

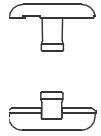


Lateral (Side To Side) Adjustment (+/- 2mm) - Undo the grub screw * retaining the bush with semipheric pin in the upper hinge half and insert 6mm Allen key into top of bush. Rotate the Allen key as indicated below to achieve the required lateral movement, when correctly adjusted re-tighten the retaining grub screw *.



Following hinge adjustment fit the aluminium cover plates using the M4 socket cap screws with a 3mm Allen key. Feed screws through the counterbored clearance holes in each hinge half picking up on the tapped holes in the cover plates and tighten.

Finally fit the plastic cover caps to the top and bottom of each hinge half making sure that the larger cover cap with the deeper cutout is fitted to the lower hinge half and positioned as indicated below.



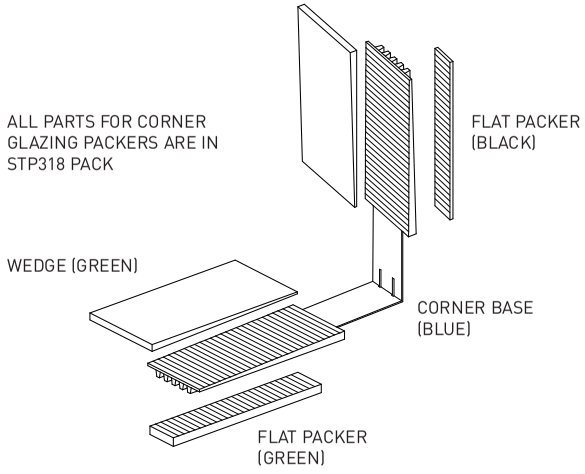
INSTALLATION - DOOR LEAF GLAZING

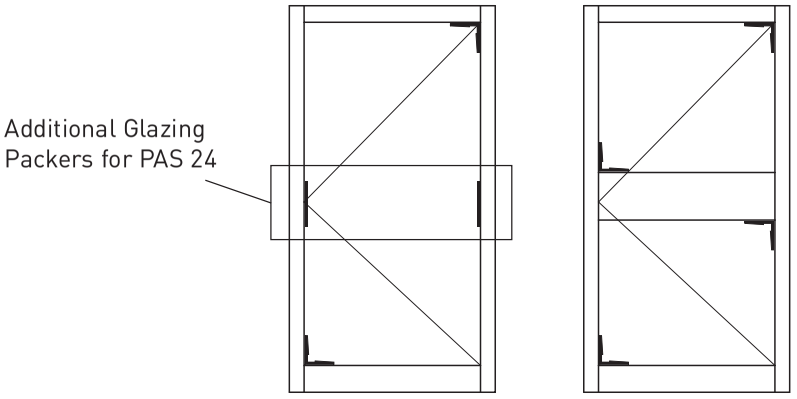
Note that the information on this page shows typical glass, bead and gasket relationships. Due to tolerances on glass, aluminium and gaskets, practical trials must be carried out to determine ideal wedge gasket fit. (Use reasonable pressure to fit wedge gasket)

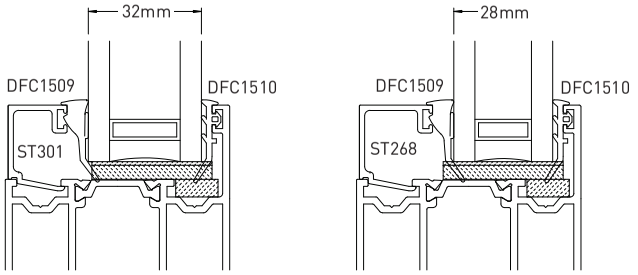
Glazing

Apply the appropriate retaining gasket (DFC1510) or W274 to the outside glazing rebate upstand. Position the adjustable glazing packers (STP318 - Pack of 50) in the required places. Use silicone to retain packers in place, taking care not to block any drainage paths. Note doors are 'toe and heel' packed as shown alongside.

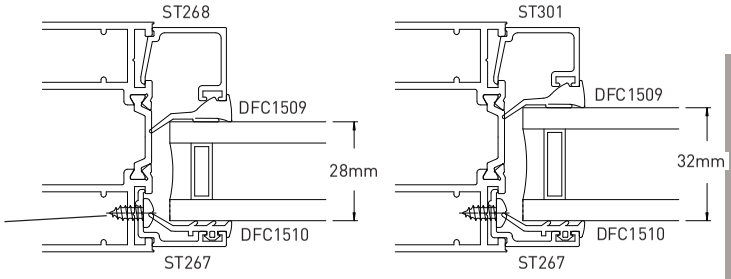
Additional resilient packing blocks are required if the door leaf is to be factory glazed prior to transport. Position the glass in the opening and adjust glazing packers by sliding the wedge part towards the corner until satisfactory adjustment has been made (making sure that the glass is centralised and that the door is square). Fit internal beads,sealing the ends with small joint sealant. (Note horizontal beads are fitted before vertical beads). Commence with fitting the appropriate wedge gasket, cutting oversize to allow for shrinkage and taking care not to stretch the gasket. Apply small joint sealant to all corner joints of the wedge and retained gasket plus all ends of all beads.







Note: For PAS 24 applications use 3 off No.8x3/8" pan head self tappers for each external glazing rebate. Screws must not be tightened fully or it will cause the ST267 bead to tip inwards.



INSTALLATION - POCKET FRAMING GLAZING

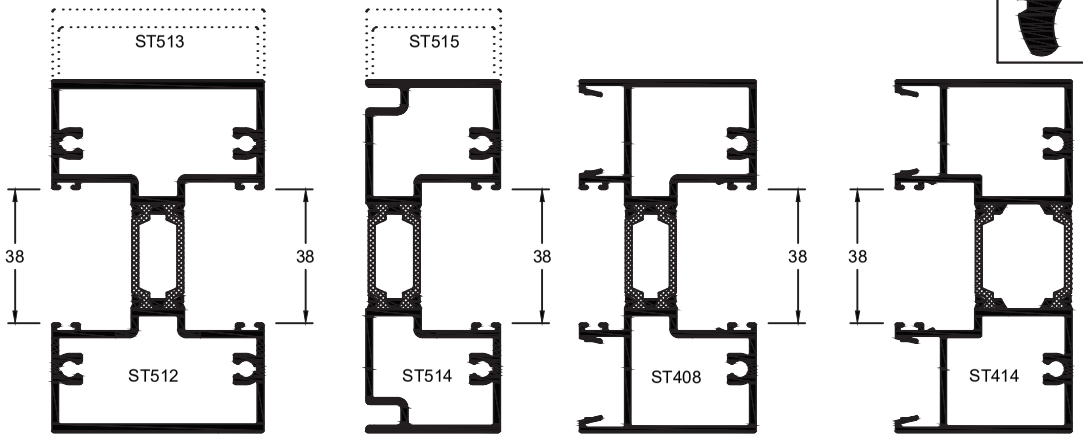
Glazing

Before glazing can proceed the correct wedge gaskets are to be established :-

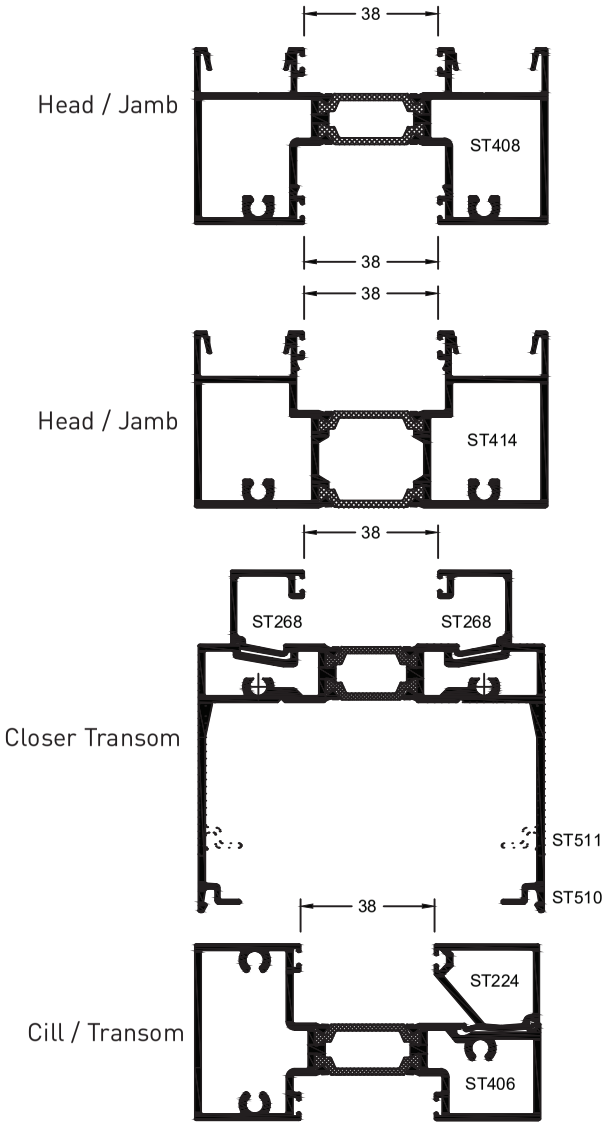
TOTAL GASKET THICKNESS = GLAZING GAP - THICKNESS OF PANEL

Note that the information on this page shows typical glazing and gasket relationships. Due to tolerances on glass, aluminium and gaskets, practical trials must be carried out to determine ideal wedge gasket fit. (Use reasonable force with glazing paddle). Profiles accommodate the glass in pockets at the head and jambs, with clip in beads to transoms and cills. Glass units are shuffled into position by inserting fully into one jamb pocket and then aligning the opposite end of the glass with the other jamb pocket and centralising the glass between the two jambs. Lift the glass into the head pocket and position setting blocks under the glass near the corners and at intermediate points on large panes. Clip in pocket bead (ST224) to transom and cill profiles or glazing beads (ST268) to door closer transoms, then commence with fitting the appropriate wedge gasket, cutting oversize to allow for shrinkage and taking care not to stretch the gasket.

	W260 1.5-2mm
	W261 2-3mm
	W262 3-4mm
	W263 4-5mm
	W264 5-6mm
	DFC1463 6-7mm
	W266 7-8mm



Jambs / Mullions



INSTALLATION - PERIMETER SEALING

Sealing & Finishing Off

The recommended sealant for the exterior use is Low Modulus Neutral Cure Silicone Sealant.

Backing foam should be used where the perimeter gap exceeds 5mm. Where the gap is within the 5mm range; a neat application of silicone is all that is required to the outside.

The internal sealing, if no plasterwork is present, can be an Acrylic sealant "caulking" that can be tooled if required and easily decorated at a later date.

General cleaning down should be done with warm soapy water. Any mortar droppings should be removed immediately and with care not to damage the powder coated surfaces.

Please refer to the polyester powder suppliers recommendations for cleaning.

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APPENDIX A - COMPLIANCE WITH THE EQUALITY ACT 2010

Where doors are designated as the `Principal` or `Alternative Accessible` entrance certain criteria must be observed and the door specification tailored to comply with the requirements of the current versions of BS 8300-2 and Building Regulations Approved Document M:Volume 2. Some of the more onerous measures given in Approved Document M can be "over-ridden" with an Access Statement providing it is accepted by Building Control. The criteria concerned are -

Low Threshold
Handle Design
Minimum Effective Clear Opening Widths
Vision Panels (In Doors)
Visual Contrast & LRV
Controlled Door Closing Devices

The following information gives guidance on how to comply with these requirements and in particular how that affects the specification of Sapa STII Commercial Door Product.

Low Threshold

The maximum height of any upstand on the door threshold must not exceed 15mm. This can be achieved by the use of either -

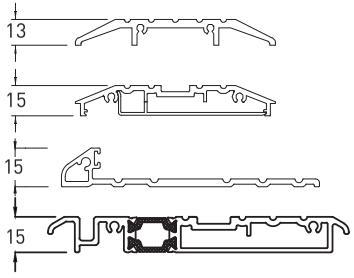
No Threshold

2709 Ramped Threshold

ST240 / ST241 Drained Ramped Threshold

ST269 Rebated Low Threshold

ST516 Universal Threshold



Note that where no threshold or a non-drained threshold is fitted, consideration must be given to weather performance of the door and provision made for any possible water ingress.

Handle Design

In principle, pull handles should not be fitted to the push side of doors to avoid giving users misleading information. The lowest point of attachment of pull handles should be no lower than 700mm and no higher than 1000mm from the underside of the door threshold. and handles need to be a minimum of 300 mm long. See page A-5 for setting out dimensional data.
The handles listed below all comply with requirements of BS 8300-2

Standard or Wide stile door leaves:

202/128 - 300mm Aluminium Offset Bar Handle
202/129 - 400mm Aluminium Offset Bar Handle

HPH001 & HPH010 - 300mm Stainless Steel Offset 'D' Handle
HPH002 & HPH011 - 400mm Stainless Steel Offset 'D' Handle

HPH007 & HPH016 - 400mm Stainless Steel Straight 'T' Handle
HPH008 & HPH017 - 600mm Stainless Steel Straight 'T' Handle

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Effective Clear Widths Of Doors (Non Dwellings)

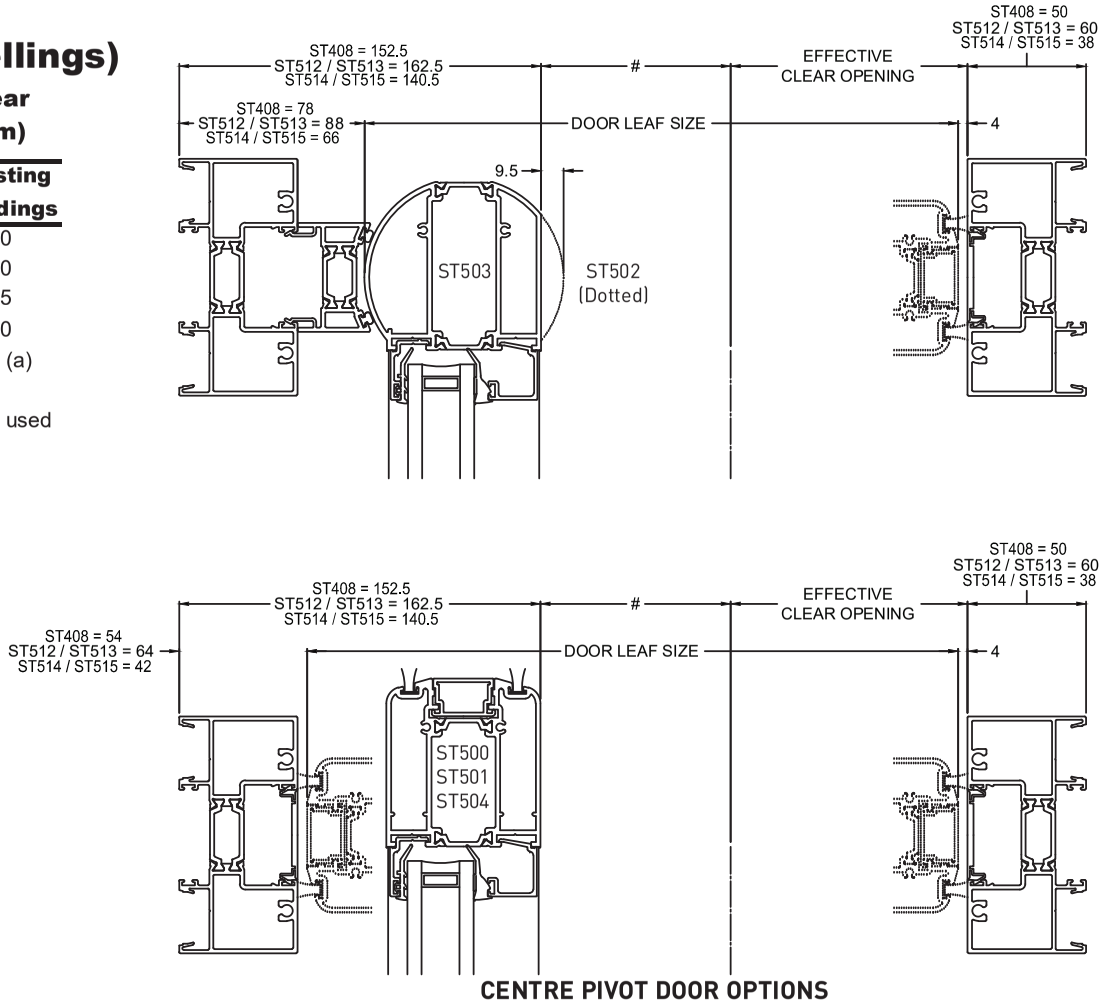
Direction of approach of wheelchair	Minimum effective clear width of door leaf (mm)	
	New Buildings	Existing Buildings
Straight-on (without a turn or oblique approach	800	750
At right angles from an access route at least 1500mm wide	800	750
At right angles from an access route at least 1200mm wide	825	775
At right angles from an access route at least 900mm wide	N/A	800
External doors and internal lobby doors at the entrance of buildings used by the general public	1000	775 (a)

(a) Where the entire frontage is being replaced, the width for a new building should be used

STII Commercial Door Effective Clear Width Allowances

The allowances opposite (and pages A.3 & A.4) must be taken away from the overall door width (single doors) or half the door width (double doors) and this should be further reduced depending on the projection of the internal door furniture # to arrive at the effective clear width.
Note if a door opens beyond 90 degrees the # allowance can be ignored, reduced or increased depending on the degree of opening.

Dimensions For Various Door Furniture Options:-
Tube Handles: 202/107 & STP399 have a 81mm projection
Aluminium Bar Handles: 202/128 & 129 have a 80mm projection.
Stainless Steel Bar Handles: HPH001 & 10 have a 70mm projection.
HPH002 & 11 have a 85mm projection.
HPH007,16,08 &17 have a 77mm projection
CVR Panic Exit Devices: STP325 to STP329 have a 53mm projection.
Surface Panic Exit Device: SBS100, 200 & 300 have a 98mm projection.
PAS 24 Panic Exit Device: STP374 & STP375 have a 72mm projection.
Lever / Lever Handles: DFP220 & DFP1010 have a projection of 70mm.



CENTRE PIVOT DOOR OPTIONS

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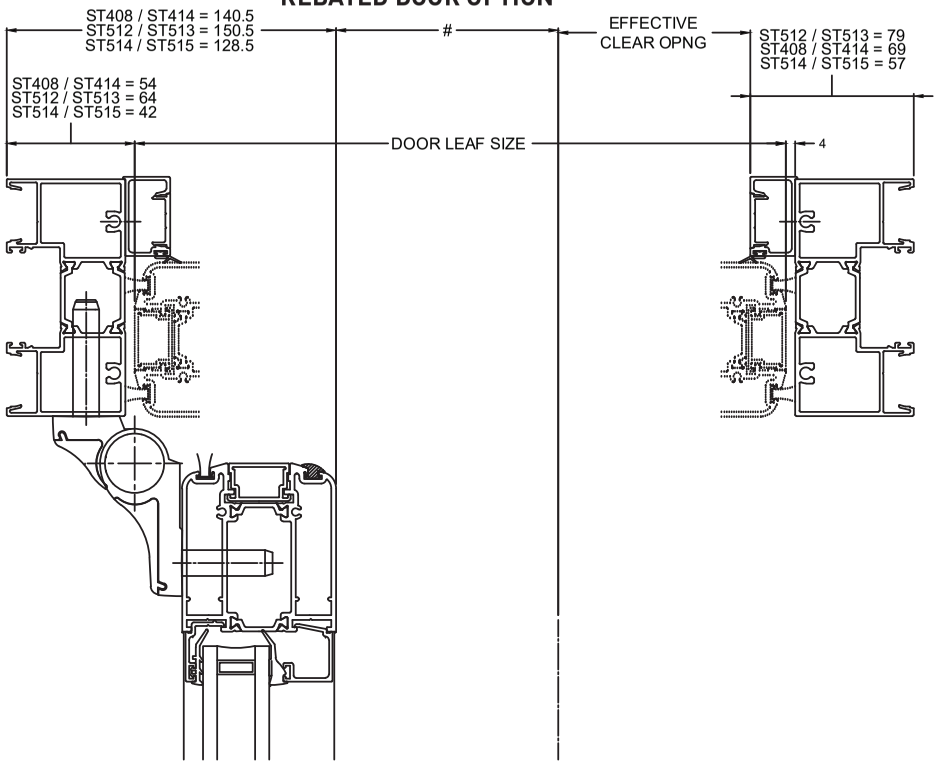
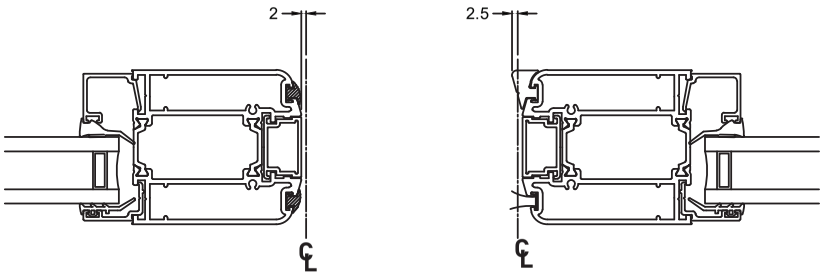
REBATED DOOR OPTION



DOUBLE DOOR OPTION



Meeting Stiles

Vision Panels

Entrance doors, lobby doors and side panels wider than 450mm should have viewing panels to alert people approaching a door to the prescence of another person on the other side.

For full guidance on zones of visibility please refer to current versions of BS 8300-2, Building Regulations Approved Document M Volume 2 and Building Regulations Approved Document K6.

Manifestation On Glazed Doors & Screens

People moving in or around a building might not see glazing in critical locations and can collide with it. To avoid this permanent manifestation should be adopted to make glazing apparent.

For full guidance on manifestation please refer to current versions of BS 8300-2, Building Regulations Approved Document M Volume 2 and Building Regulations Approved Document K5.

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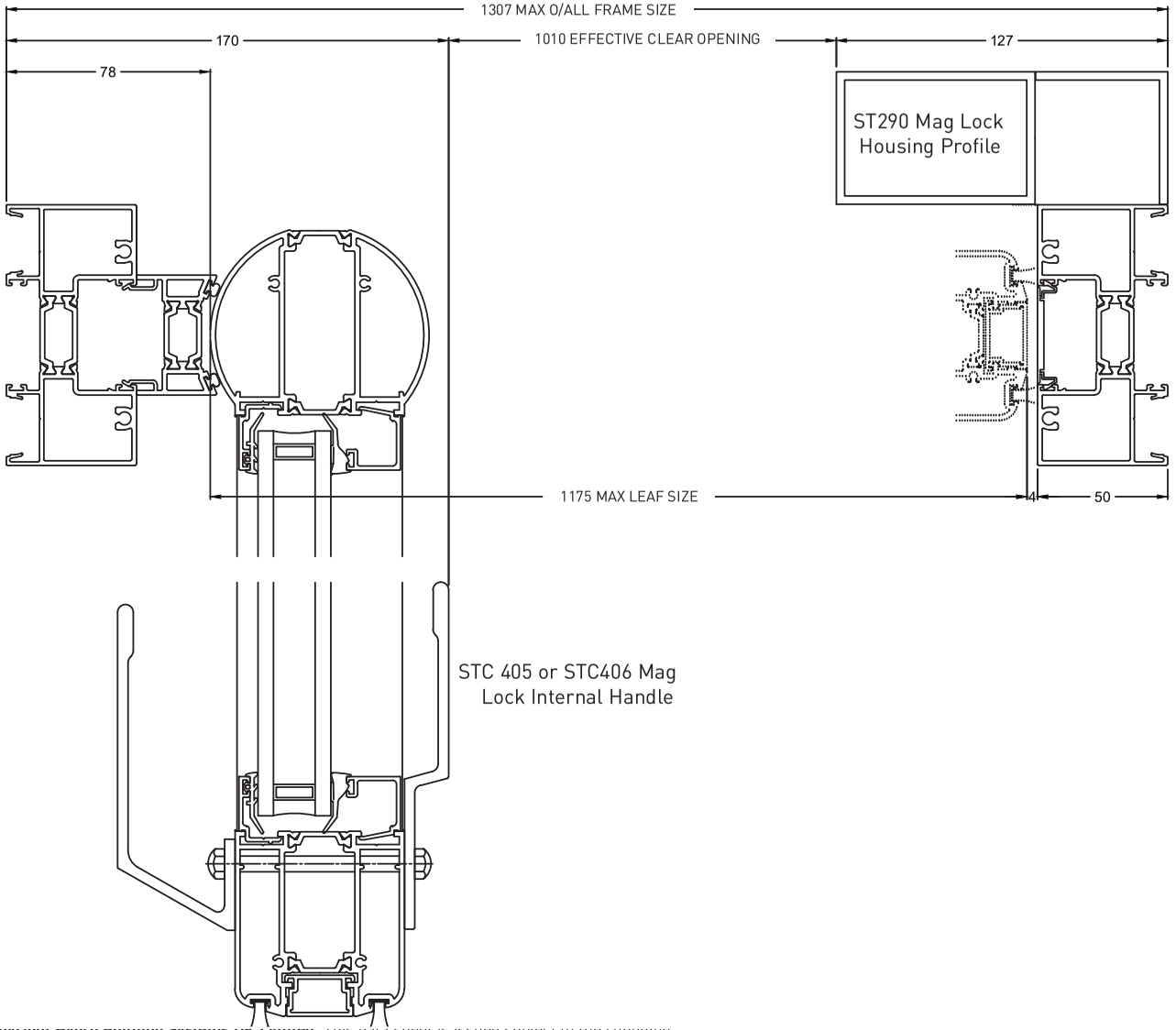
Single AFT centre pivot door fitted with
202/188 or 202/189 EA compliant transom
closer and 2 x STP
394 electromagnetic locks



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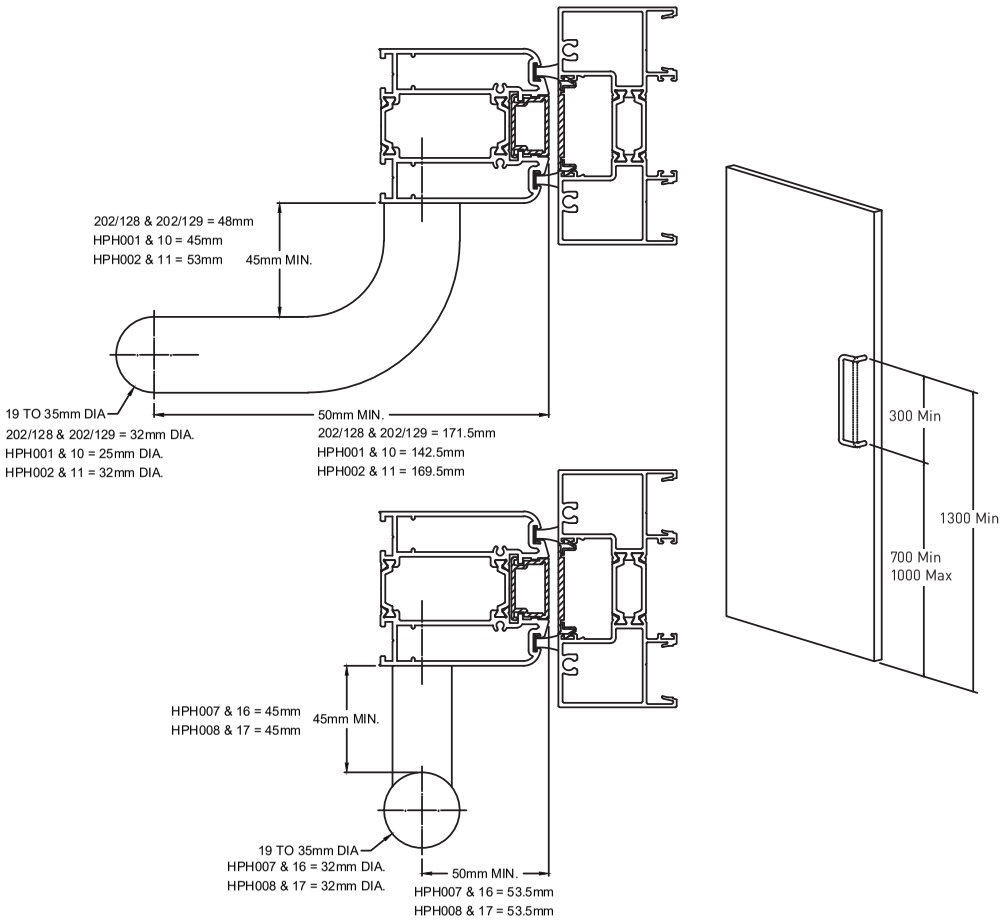

Not Cold to the Touch

Approved Document M:Volume 2 states that all door opening furniture is not `cold to the touch` - i.e. not bare metal. Powder coatings may be deemed acceptable, but should be checked with the Building Control officer and / or Client. Handles should also comply with the visual contrast requirements in the following section.

Visual Contrast & LRV

Visual contrast in Approved Document M:Volume 2 and BS 8300-2, when used to indicate the visual perception of one element of the building or fitting within the building against another, means that the difference in light reflectance value (LRV) between the two surfaces is greater than 30 points. Where illuminance on surfaces is greater than 200 lux a difference in LRV should be a minimum of 20 points.
Where door opening furniture projects beyond the face of the door or otherwise creates enhanced differentiation and shade, a minimum difference in LRV of 15 points is considered adequate.
The surface of the leading edge of any door that is not self closing or is likely to be held open, contrasts visually with the other door surfaces and its surroundings. This can be achieved on STII Commercial Doors by specifying a contrasting colour to stile pocket infill (STC265) which is available in black or white.

As a guide for designers the LRVs of the 100 colours in the BS 4800 range have been determined in accordance with BS 8493 and are set out in Annex B Table B.1 pages 177 & 178 of BS 8300-2.

Please refer to Page A.6 for the LRVs of the colours in Sapa`s Interpon range.

Visual Contrast & LRV (continued)

LRVs of the colours in Sapa`s standard Interpon range:-

RAL	LRV
1000	51
1001	48
1002	46
1003	49
1004	43
1005	34
1006	39
1007	38
1011	28
1012	48
1013	73
1014	59
1015	69
1016	75
1017	49
1018	65
1019	32
1020	31
1021	54
1023	56
1028	48
1032	44
1033	45
1034	45
2000	29
2001	19
2002	17
2003	34
2004	25
2008	31

RAL	LRV
2010	23
2011	31
2012	26
3000	13
3001	11
3002	11
3003	9
3004	7
3005	6
3007	6
3009	9
3010	NV
3011	8
3012	32
3013	12
3014	28
3015	45
3016	14
3017	22
3018	20
3020	14
3022	27
3027	14
3031	14
4002	13
4003	25
4004	7
4005	20
4006	13
5000	11

RAL	LRV
5001	9
5002	8
5003	7
5004	5
5005	10
5007	15
5008	7
5009	12
5010	10
5011	6
5012	24
5013	7
5014	22
5015	20
5017	12
5018	24
5019	12
5020	7
5021	17
5022	6
5023	17
6000	17
6001	14
6002	12
6003	11
6004	8
6005	7
6006	7
6007	7
6008	6

RAL	LRV
6009	6
6010	15
6011	22
6012	7
6013	20
6014	8
6015	7
6016	13
6017	21
6018	28
6019	59
6020	9
6021	33
6022	7
6023	NV
6024	20
6025	17
6026	11
6027	45
6028	11
6029	14
6032	19
6033	23
6034	39
7000	26
7001	33
7002	23
7003	21
7004	34
7005	20

RAL	LRV
7006	17
7008	16
7009	13
7010	13
7011	13
7012	14
7013	11
7015	11
7016	8
7021	7
7022	9
7023	24
7024	10
7026	8
7030	29
7031	16
7032	46
7033	24
7034	27
7035	58
7036	31
7037	23
7038	45
7039	17
7040	37
7042	32
7043	12
7044	48
7045	32
7046	26

RAL	LRV
7047	59
8000	19
8001	19
8002	12
8003	13
8004	14
8007	10
8008	12
8011	8
8012	8
8013	N/V
8014	7
8015	8
8016	7
8017	6
8019	7
8020	NV
8021	NV
8022	5
8023	18
8024	14
8025	14
8028	8
8040	NV
8912	NV
9001	78
9002	69
9003	85
9004	5
9005	4

RAL	LRV
9010	85
9011	5
9016	86
9017	5
9018	63

BS4800	LRV
00A01	66
00A05	44
00A09	23
00A13	10
04C39	10
04E53	16
06C33	57
08B15	83
08B29	7
08C31	77
10A03	56
10A05	45
10B15	81
10B19	43
12B29	7
12C40	6
14C39	10
14C40	7
14E53	22
16C37	22
18B25	16
18B29	6
18C39	10
18E53	16
20C33	60
20D45	11

BS381	LRV
105	5
166	13
538	10
632	15

LRVs of the non-standard metallic colours :-

9006 - 53 9007 - 29

NV = No Value

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Controlled Door Closing Devices

Manually operated non-powered entrance doors will satisfy the requirements of Building Regulations Part M:Volume 2 and BS 8300-2 if fitted with a door closer that conforms to the following:
For many people to have independent access through single or double swing doors, the opening force, when measured at the leading edge of the door, should be not more than 30N from 0°(the door in the closed position) to 30° open, and not more than 22.5N from 30° to 60° of the opening cycle.
Door closers with a 30N opening force are unlikely to provide much resistance to wind pressure and in exposed situations consideration should be given to automatic or low energy operators.

Sapa can supply a range of door closers which comply with Equality Act requirements as follows:

Concealed Transom Closers
202/188 - (EN1-4 Strength - Hold Open)
202/189 - (EN1-4 Strength - No Hold)
See page 3-5

Face Mounted Closers
202/7000/ES - TS83 Rack and Pinion Closer (EN2-5 Strength)
DCS501 - Sapa Rack and Pinion Closer (EN1-5 Strength).
See pages 3-5 & 3-8