

General:

FLAMEBREAK™ Door Blanks are supplied with mixed tropical hardwood stiles and rails as part of the core structure.

The stiles and bottom rail can be removed for the purpose of sizing the door core but the top rail should be retained.

NOTE: The top rail must be retained for 'Q-Mark' fire door applications.

For general purpose internal door applications the door cores should generally be hardwood lipped on two vertical edges.

NOTE: Where a door core is reduced in width, the adjustment should be carried out equally from both vertical edges resulting in the retention of not less than 50% of the outer twin stiles, the door can be used to an 'edge banded' detail without the need for additional lipping. See Figs. 3.1 & 3.13.

Where door assemblies with flush overpanels (i.e. without transom rails to the frame) are used the bottom edge of the overpanel and top edge of the door leaf must be lipped. For pairs of doors with overpanels (without transoms), lippings must be applied to the top edge of the door and bottom edge of the overpanel and rebated (Nom.12mm).

NOTE 1: Not approved for FD60 'Q-Mark' fire rated door assemblies.

NOTE 2: Doors may be rebated to flush overpanels (where approved) OR, used with rebated meeting stiles (where approved) but not both. i.e. if door are rebated to overpanels then they cannot be provided with rebated meeting stiles.

For external locations doors must be hardwood lipped on all edges. (See Section 13 External Locations).

It is recommended that doors made using FLAMEBREAK™ door blanks are lipped before applying facings. However, lippings may be applied after facings if required.

NOTE 1: It is important to ensure that the lipping material and the cores are properly dried with similar moisture contents. Timber can shrink or grow by up to 1% across the grain for every 4% variation in moisture content. Differential movement between the core and lipping resulting from adverse environmental conditions or use of components with different moisture contents can give rise to a number of problems. e.g. cracking of paint at the junction between lipping and core structure and, in extreme circumstances, splitting of veneer facings. (See Handling & Storage advice - Section 1 & Appendix Section 16B).

NOTE 2: It is recommended that internal doors that are likely to be used in areas that may be washed down or, in areas of high humidity should be hardwood lipped on all edges.

NOTE 3: For optimum quality paint grade internal doors it is recommended that FLAMEBREAK™ Types FF630, or FF660 Door Blanks are used with paint grade veneers or painting foils extended over the lippings.

Lippings, particularly lippings at the closing & meeting stiles may need to be profiled either at the time of manufacture or, on site at the time of installation, to ensure correct operation while maintaining operating gaps to the satisfaction of BS4787 Pt.1. The extent of the profiling may vary according to the configuration and dimensions of the door assembly and the choice of hardware (particularly hanging devices). A 2° bevel to the closing / meeting stiles of single action doors will satisfy most application requirements.

(See 'Growth Formula' - Section 8 Co-ordination & Section 5 Smoke Sealing).

Q FD30 Fire Doors:

The minimum lippings specifications for 'Q-Mark' FD30 applications to be as follows:

SQUARE - 6~18mm thick with maximum of 2mm profiling permitted at corners of lipping.

ROUNDED - 8 ~ 20mm thick profiled to suit the minimum radius necessary to suit the door hanging device.

REBATED - 20~30mm with equal 12mm deep rebate. Doors must be lipped on vertical edges as a minimum requirement.

NOTE 1: Doors may be rebated to overpanels OR rebated at meeting stiles but not both.

NOTE 2: Single leaf door assemblies and pairs may supplied to an 'edge banded' detail without the need for additional lippings. See page 3.6 & Section 1 1.7 & 1.8.

Lippings to be from hardwood with a minimum density of 640Kg/m³ and must be straight grained, joinery quality, free from knots, splits and checks.

Lippings must be bonded to the door core Urea Formaldehyde, Resorcinol Formaldehyde or polyurethane (PU) adhesives.

Q FD60 Fire Doors:

The minimum lippings specifications for 'Q-Mark' FD60 applications to be as follows:

SQUARE - 10~15mm thick with maximum of 2mm profiling permitted at corners of lipping.

ROUNDED - 12 ~ 17mm thick profiled to the minimum radius necessary to suit the door hanging device.

REBATED - Not approved.

NOTE: Single leaf door assemblies and pairs must be hardwood lipped on all edges.

Lippings to be from hardwood (excluding Beech - Fagus Sylvatica) with a minimum density of 640Kg/m³ and must be straight grained, joinery quality, free from knots, splits and checks.

Lippings must be bonded to the door core Urea Formaldehyde, Resorcinol Formaldehyde.

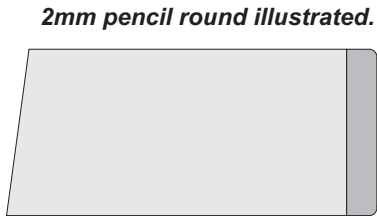
NOTE: Polyurethane (PU) adhesives may be used for bonding lippings for door height single leaf door assemblies only.



Lippings - FD30 Applications:

Q Lippings - FD30 Applications:

Fig. 3.1



2mm pencil round illustrated.

The profiling of lipping edges is recommended to provide for the following:

- a/ Reduced risk of injury to users in the event of accidental contact.
- b/ Improved resistance to impact.
- c/ The profiling will act as a lead when used with smoke or acoustic sealing systems thus enhancing seal life.
- d/ Provides for improved adhesion of paint and lacquer finishes.

Vertical Lippings - FD30 Doorsets:

Lippings must be in hardwood of 6mm minimum thickness.

Where shaped lippings for double action hanging stiles or rebates are required, the lipping thickness may be increased. (See: *Lippings & Facings Page 1 for 'Q' Mark approved dimensional limits*).

Except where the edge banding option applies (See **Fig. 3.12**), Lippings must be applied to the two vertical edges.

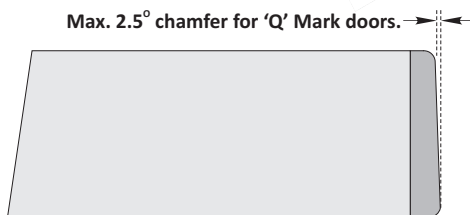
Use of top and bottom lippings is recommended but not essential for door height assembly fire door applications, except when used with certain hardware items. (See *Section 8 - Hardware*).

Lippings to be from hardwood with a minimum density of 640Kg/m³ and must be straight grained, joinery quality, free from knots, splits and checks.

Lippings must be bonded to the core using Urea Formaldehyde, Polyurethane (PU) or Resorcinol Formaldehyde adhesives.

Q Vertical Lippings - Closing Stiles Leading Edge:

Fig. 3.2



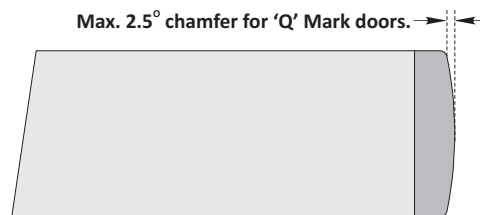
Max. 2.5° chamfer for 'Q' Mark doors.

Splayed Closing Stile (Leading Edge) - To achieve correct operation of the doors while maintaining operating gaps to the dimensions recommended by reference to BS4787- Pt.1 it may be necessary to apply a leading edge to the closing stile of the door.

NOTE: 2° leading edge illustrated.

Q Vertical Lippings - Closing Stiles Slightly Rounded Stiles:

Fig. 3.3



Max. 2.5° chamfer for 'Q' Mark doors.

Slightly rounded closing stiles: The same effect can be achieved by slightly rounding the closing stiles. The important thing being that the closing of the door should clear the frame during operation without detriment to operating gaps described in BS4787 - Pt.1.

NOTE: This is the recommended closing stile detail for double action doors.

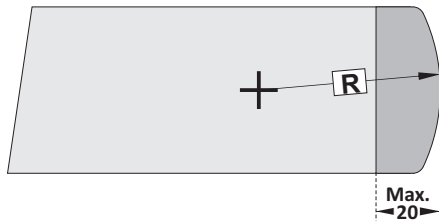


Lippings - FD30 Applications:

Q Vertical Lippings - Hanging Stiles - Double Action Doors:

Fig. 3.4

R = Minimum radius necessary to suit pivot fixings.



Hanging Stiles : Double Action Doors - The radius to the hanging stiles for double action doors will generally be determined by the design of the hanging device with lippings rounded to suit the pivot centre. A 50mm radius to the door edges with a 52mm radius scallop to the frame will suit most applications.

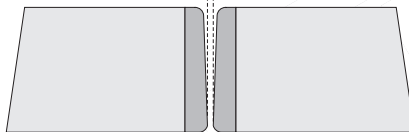
The lipping thickness must be 8~20mm for FD30 applications.

NOTE: For Closing and Meeting stiles use 'Slightly Rounded Closing / Meeting Stile' Details

Q Vertical Lippings - Meeting Stiles - Splayed:

Fig. 3.5

Max. 2.5° chamfer for 'Q' Mark doors.

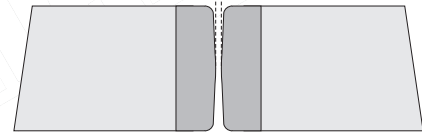


Splayed Meeting Stiles: To achieve correct operation of the doors while maintaining operating gaps to the dimensions recommended by reference to BS4787 - Pt.1 it may be necessary to splay the edges of the doors. Generally Fire doors should be capable of being opened and closed simultaneously.

Q Vertical Lippings - Meeting Stiles - Slightly Rounded:

Fig. 3.6

Max. 2.5° chamfer for 'Q' Mark doors.



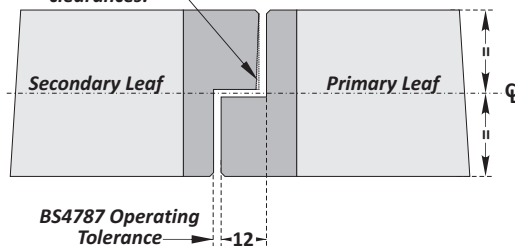
Slightly rounded Meeting stiles: The same effect can be achieved by slightly rounding the closing stiles. The important thing being that the closing face (*frame doorstep face*) of the door should clear the adjacent door during operation without detriment to operating gaps described in BS4787 - Pt.1 when opened or closed in any order.

NOTE: This is the recommended 'standard' meeting stile arrangement for double action pairs of doors.

Q Vertical Lippings - Meeting Stiles - Rebated:

Fig. 3.7

Ease lipping - as necessary to provide for operational clearances.



Rebated meeting Stile: The use of rebated meeting stiles is not recommended for fire doors that should generally provide for simultaneous opening. However, there are occasions where sequential opening is necessary, perhaps to provide for additional performances. (e.g. Acoustic performance).

Where the astragal detail (Fig.3.8) is not acceptable, (perhaps for aesthetic reasons), rebated meeting stiles may be used.

NOTE 1: For fire door applications rebated meeting stiles must not be used where the door leaf is rebated to a flush overpanel.

NOTE 2: Equal rebate illustrated. Offset rebates to accommodate sealing or hardware fittings may be used.



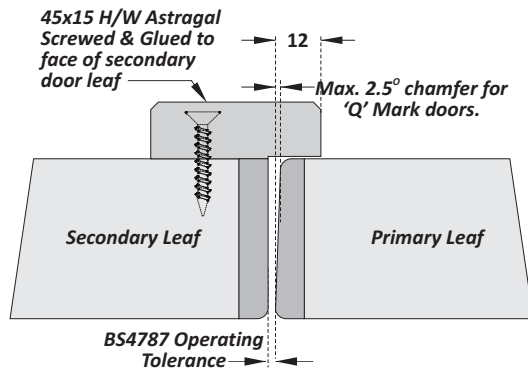
3.4 Lippings & Facings

FLAMEBREAK

Lippings - FD30 Applications:

Vertical Lippings - Meeting Stile - Astragals:

Fig. 3.8



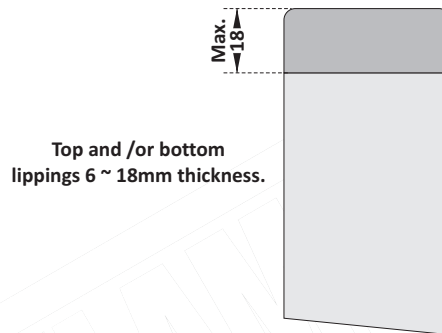
Astragal Detail: Generally fire doors should be capable of opening simultaneously. However, where additional performances are required, (e.g. Acoustic performances) it may be necessary to provide for sequential opening (e.g. To accommodate seals).

The astragal detail is recommended for maximum performance where these considerations apply and may be used without adverse influence on existing fire test / assessment data.

NOTE: Astragals can be applied to one or both door leaves and may be profiled for aesthetic effect.

Horizontal Lippings - Top & Bottom Door lippings:

Fig. 3.9



Top & Bottom Lippings :

a/ For FD30 fire door applications the use of top and bottom lippings is optional provided that the core structure head rail is not reduced by more than 3mm. The core structure bottom rail may be reduced or removed completely with the optional use of a bottom edge lipping.

b/ The use of top and bottom edge lippings is strongly recommended for use where door assemblies are to be used in external locations or in areas that may be subject to occasional wet cleaning *OR*, where used in high humidity areas.

b/ Use of top and bottom lippings is also recommended for use in severe duty locations with load bearing hanging devices e.g. pivot fixings.

c/ For FD30 fire door applications the lipping thickness must not be less than 6mm with a maximum thickness of 18mm.

d/ Vertical lippings must extend across the end grain of the horizontal lippings.

e/ For storey height door assemblies with flush overpanels the top edge of the door leaf and bottom edge of the overpanel must be hardwood lipped. For single leaf assemblies or pairs the top and bottom lippings may be square edged or rebated.

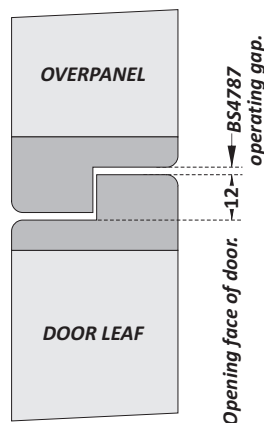
NOTE 1: For pairs of doors an alternative method to prevent swing through at the meeting stiles may be used e.g. planted door stop detail See Fig.3.11.

NOTE 2: For pairs of doors the meeting stiles may be rebated *OR* the door can be rebated to flush overpanels but the rebating of both meeting stiles and door to flush overpanels is not approved.

Lippings - FD30 Applications:

Q Lippings - Rebated Door / Overpanel:

Fig. 3.10



Rebated Door / Overpanel: Rebating of the door to the overpanel is not essential, (*and not recommended*), for single leaf door assemblies.

Rebates are necessary for single action pairs of doors with flush overpanels unless astragals or other devices are used to prevent swing through.

For fire door applications the lipping thickness at the top of the door and bottom of the overpanel must not exceed 30mm thickness with a 12mm rebate located centre thickness of the door.

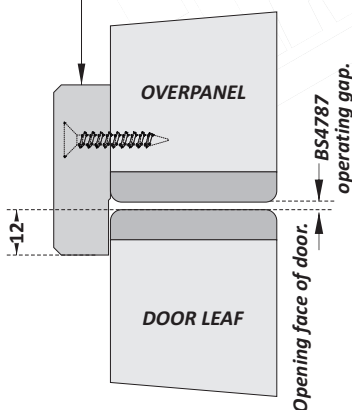
NOTE 1: For FD30 fire door applications rebating to overpanels is not approved where rebated meeting stiles are used.

NOTE 2: Equal rebate illustrated. Offset rebates to accommodate sealing or hardware fittings may be used.

Q Planted Door Stop - Flush Overpanels:

Fig. 3.11

45x15 H/W Planted stop
Screwed & Glued to
face of the over panel.



Planted door stop - Flush Overpanel:

Planted door stops may be screwed and glued to the closing face of the overpanel as an alternative to rebating to prevent swing through of single action pairs of doors.

The planted stop is required in the area of the meeting stiles (*covering the face of each door leaf by a minimum of 50mm*) but need not be to the full widths of the doors or the overpanel.

Provided that the particular design is otherwise approved with rebated meeting stiles; this option provides for a solution for use in conjunction with single swing pairs with flush overpanels for FD30 fire rated applications with rebated meeting stiles.

This planted stop detail is recommended for maximum performance where these considerations apply and may be used without adverse influence on existing fire test / assessment data.

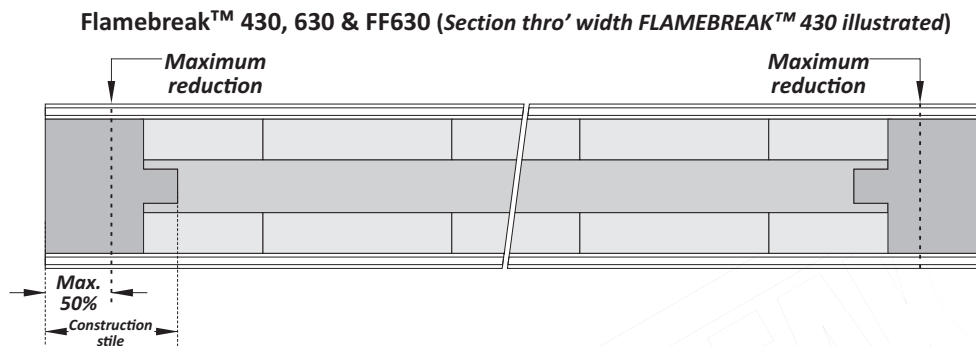
NOTE: Planted stops are applied to the closing face of the overpanel only and may be profiled for aesthetic effect.



Lippings - FD30 Applications:

🔍 Edge Banded - Flamebreak™ 430, 630 & FF630 cores:

Fig. 3.12



Edge Banding:

When using 2135x915mm or 2240x1220 standard construction Flamebreak™ door blanks for door height door assemblies only (without overpanels) Flamebreak™ 430, 630, FF630 cores can be reduced in width by removal of up to 50% equally from both sides of the outer stile of the core construction to provide for an 'edge banded' appearance (i.e. sub facings & facings extended to the full width of the door) without the need to apply additional lippings.

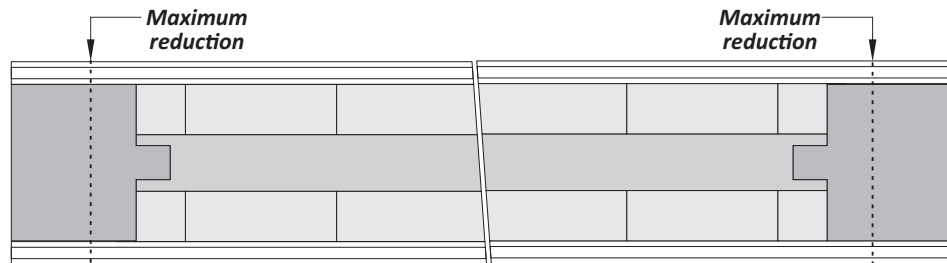
There are no restrictions with regard to the removal or adjustment of the bottom rail of the core construction but the rail at the head of the core must not be reduced by more than 3mm.

NOTE: This option is only applicable to standard Flamebreak™ core constructions supplied with internal perimeter framing.

Lippings - FD60 Applications:

Edge Banded - Flamebreak™ 660 and FF660 cores: NOT APPROVED FOR FD60 FIRE DOOR APPLICATIONS

Fig. 3.13



Flamebreak™ 660 & FF660 (Section thro' width FLAMEBREAK™ 660 illustrated)

Edge Banding:

NOT APPROVED FOR FD60 FIRE DOOR APPLICATIONS

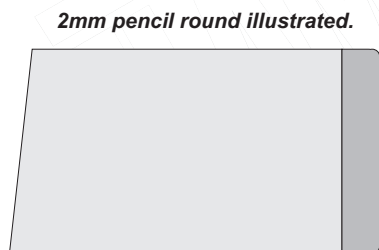
Flamebreak™ 660 and FF660 can be reduced in width by removal of up to 50% equally from both sides of the outer stile of the core construction to provide for an 'edge banded' appearance (i.e. sub facings & facings extended to the full width of the door) without the need to apply additional lippings.

There are no restrictions with regard to the removal or adjustment of the bottom rail of the core construction but the rail at the head of the core must not be reduced by more than 3mm.

NOTE: This option is only applicable to standard Flamebreak™ core constructions supplied with internal perimeter framing and is not approved for FD60 fire door applications.

Q Lippings - FD60 Applications:

Fig. 3.14



The profiling of lipping edges is recommended to provide for the following:

- a/ Reduced risk of injury to users in the event of accidental contact.
- b/ Improved resistance to impact.
- c/ The profiling will act as a lead when used with smoke or acoustic sealing systems thus enhancing seal life.
- d/ Provides for improved adhesion of paint and lacquer finishes.

Lippings - FD60 Door Assemblies:

NOTE: For uses excluding FD60 fire door applications, the use of lippings is optional provided that the core construction perimeter is retained as described for 'edge banded' details. However the use of lippings is recommended to for external use and for use in wet areas or, where required to suit hardware fittings. (See Section 8 - Hardware).

For FD60 fire door applications the core construction perimeter stiles may be reduced or removed from one or both vertical edges.

For FD60 applications doors must be hardwood lipped on all edges.

Lippings must be in hardwood of 10mm minimum thickness.

Where shaped lippings for double action hanging stiles or rebates are required, the lipping thickness may be increased. (See: Lippings & Facings Page 3.1 for 'Q-Mark' approved dimensional limits).

Lippings to be from hardwood (excluding Beech - *Fagus Sylvatica*) with a minimum density of 640Kg/m³ and must be straight grained, joinery quality, free from knots, splits and checks.

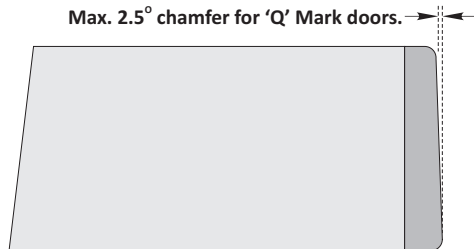
Lippings must be bonded to the core using Urea Formaldehyde, or Resorcinol Formaldehyde adhesives.

NOTE: Polyurethane (PU) adhesives may be used for bonding lippings for door height single leaf door assemblies only.



Lippings - FD60 Applications:

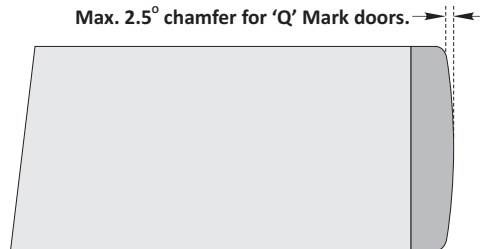
Q Lippings - Closing Stiles *Fig. 3.15*
Leading Edge:



Splayed Closing Stile (Leading Edge) - To achieve correct operation of the doors while maintaining operating gaps to the dimensions recommended by reference to BS4787- Pt.1 it may be necessary to apply a leading edge to the closing stile of the door.

NOTE: 2° leading edge illustrated.

Q Lippings - Closing Stiles *Fig. 3.16*
Slightly Rounded Stiles:

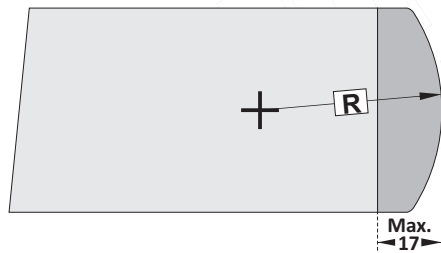


Slightly rounded closing stiles: The same effect can be achieved by slightly rounding the closing stiles. The important thing being that the closing of the door should clear the frame during operation without detriment to operating gaps described in BS4787 - Pt.1.

NOTE: This is the recommended closing stile detail for double action doors.

Q Hanging Stiles - *Fig. 3.17*
Double Action Doors:

R = Minimum radius necessary to suit pivot fixings.

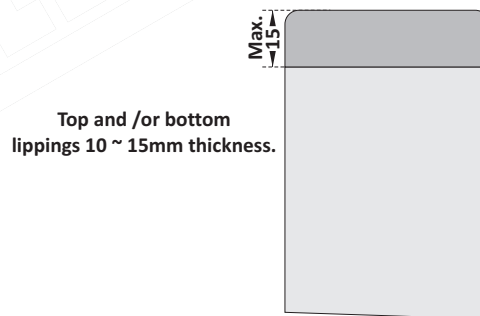


Hanging Stiles : Double Action Doors - The radius to the hanging stiles for double action doors will generally be determined by the design of the hanging device with lippings rounded to suit the pivot centre. A 50mm radius to the door edges with a 52mm radius scallop to the frame will suit most applications.

The lipping thickness must be 12~16mm for FD60 applications.

NOTE: For Closing and Meeting stiles use 'Slightly Rounded Closing / Meeting Stile' Details

Q Top & Bottom Door lippings: *Fig. 3.18*



Top & Bottom Lippings :

For FD60 fire door applications the core construction perimeter framing top rail must be retained with a maximum trimming reduction of 3mm. (See Section 1 page 1.9)

The core construction perimeter framing bottom rail may be reduced or removed completely.

For FD60 applications doors must be hardwood lipped on all edges.

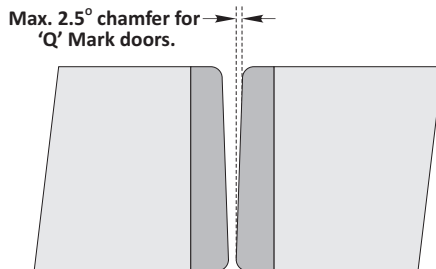
The lipping thickness must not be less than 10mm with a maximum thickness of 15mm.

See page 3.7 Fig. 3.14 for further specification requirements for lippings.



Lippings - FD60 Applications:

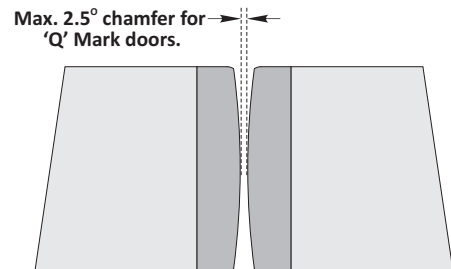
Q Meeting Stiles - Splayed: *Fig. 3.19*



Splayed Meeting Stiles: To achieve correct operation of the doors while maintaining operating gaps to the dimensions recommended by reference to BS4787 - Pt.1 it may be necessary to splay the edges of the doors.

Generally Fire doors should be capable of being opened and closed simultaneously.

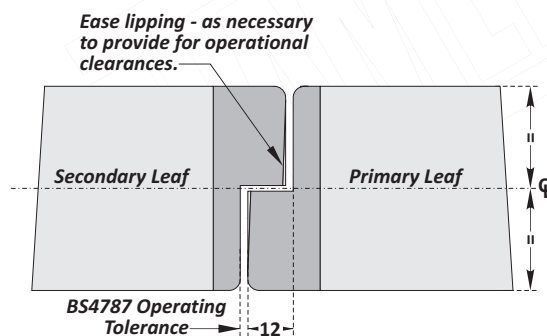
Q Meeting Stiles - Slightly Rounded: *Fig. 3.20*



Slightly rounded Meeting stiles: The same effect can be achieved by slightly rounding the closing stiles. The important thing being that the closing face (*frame doorstep face*) of the door should clear the adjacent door during operation without detriment to operating gaps described in BS4787 - Pt.1 when opened or closed in any order.

NOTE: This is the recommended 'standard' meeting stile arrangement for double action pairs of doors.

Meeting Stiles - Rebated: *Fig. 3.21*



Rebated meeting stile:

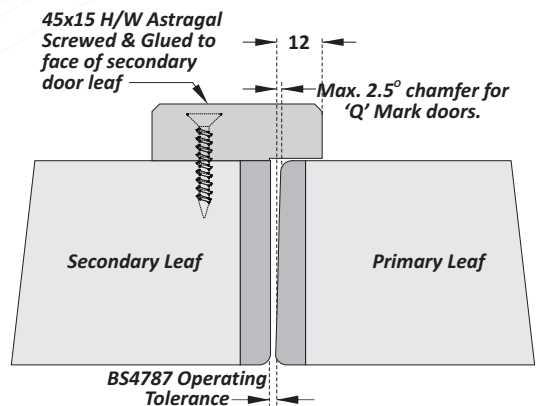
THE USE OF REBATED MEETING STILES IS NOT APPROVED FOR FD60 FIRE DOOR APPLICATIONS.

Fire doors should generally provide for simultaneous opening. However, there are occasions where sequential opening is necessary, perhaps to provide for additional performances. (*e.g. Acoustic performance*).

Where these considerations apply the astragal detail shown by reference to (*Fig.3.11*) may be used.

NOTE: This detail is not approved for FD60 'Q-Mark' applications with 54mm FLAMEBREAK™

Q Meeting Stile - Astragals: *Fig. 3.22*



Astragal Detail: Generally fire doors should be capable of opening simultaneously. However, where additional performances are required, (*e.g. Acoustic performances*) it may be necessary to provide for sequential opening (*e.g. To accommodate seals*).

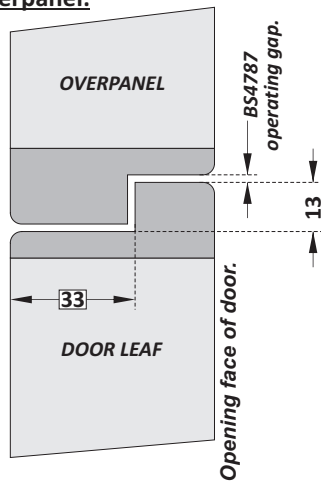
The astragal detail is recommended for maximum performance where these considerations apply and may be used without adverse influence on existing fire test / assessment data.

NOTE: Astragals can be applied to one or both door leaves and may be profiled for aesthetic effect.



Lippings - Rebated Door / Overpanel:

Fig. 3.23



Rebated Door / Overpanel:

REBATING DOORS TO FLUSH OVERPANELS IS NOT APPROVED FOR FD60 APPLICATIONS

Rebating of the door to the overpanel is not essential, (*and not recommended*), for single leaf door assemblies.

Rebates are necessary for single action pairs of doors with flush overpanels unless astragals or other devices are used to prevent swing through.

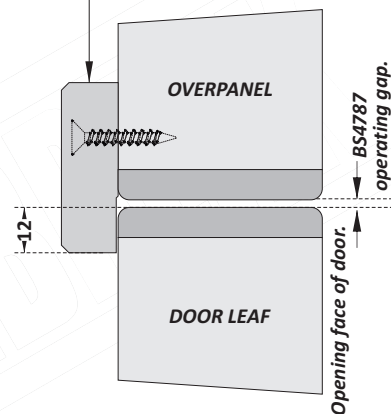
Rebating doors to flush overpanels is not approved for FD60 applications. For storey height door assemblies with overpanels the door must be separated from the overpanel by use of an approved detail transom rail in the frame. See *Section 7 Frames*.

NOTE: This detail is not 'Q-Mark' approved for FD60 fire door applications.

Planted Door Stop - Flush Overpanels:

Fig. 3.24

45x15 H/W Planted stop
Screwed & Glued to
face of the over panel.



Planted door stop - Flush Overpanel:

THIS DETAIL IS NOT APPROVED FOR FD60 FIRE DOOR APPLICATIONS.

Planted door stops may be screwed and glued to the closing face of the overpanel as an alternative to rebating to prevent swing through of single action pairs of doors.

The planted stop is required in the area of the meeting stiles (*covering the face of each door leaf by a minimum of 50mm*) but need not be to the full widths of the doors or the overpanel.

This detail is not approved for FD60 fire door applications. For storey height door assemblies with overpanels the door must be separated from the overpanel by use of an approved detail transom rail in the frame. See *Section 7 Frames*.

NOTE: This detail is not 'Q-Mark' approved for FD60 fire door applications.

Door Facings:

FLAMEBREAK™ door core constructions are supplied sub facings already applied as follows:

FLAMEBREAK™ 430 = Nom. 44mm thickness faced with 4mm plywood.

FLAMEBREAK™ 630 = Nom. 44mm thickness faced with 6mm plywood.

FLAMEBREAK™ FF630 = Nom. 44mm thickness faced with 6mm Medium Density Fibreboard.

FLAMEBREAK™ 660 = Nom. 54mm thickness faced with 4mm plywood.

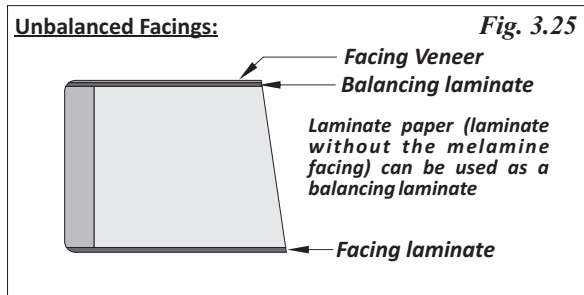
FLAMEBREAK™ FF660 = Nom. 54mm thickness faced with 6mm Medium Density Fibreboard.

Additional facings / finishings can be applied to the base core constructions.

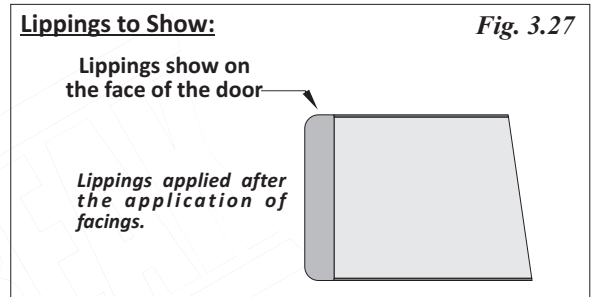
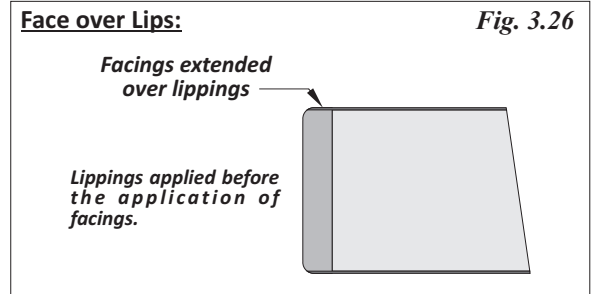
The adhesives used for the application of door facings should be suitable for use with the particular material for bonding onto a wood / MDF base.

FLAMEBREAK™ cores can be lightly sanded to permit the application of paint finishes direct onto the core material with grain filling or use of painting foils being recommended to achieve optimum quality finishes where plywood faced FLAMEBREAK™ cores are used.

Where different facing materials are used on each face of the door (e.g. Use of 1.3mm thickness laminate on one face and veneer on the other), it is recommended that consideration is given to the creation of a balanced structure to minimise the risk of distortion resulting from changes in environmental conditions. i.e. for the veneered face it is recommended that a balancing laminate paper is used on the veneered face (to balance the laminate face) before applying the thinner facing veneer. See Fig. 3.25



Facings can be applied after lipping i.e. 'face over lips'. OR, Lippings can be applied after facing the core, 'lippings to show on the face of the door'. See Fig. 3.26 & 27.



Door Facings - Fire Doors:

Whereas for general purpose applications the core may be calibrated to provide for a constant finished door thickness when facing materials have been applied, for fire door applications the calibration should be limited to 1mm (0.5mm from each face).

For Fire Door Applications there are restrictions on the approved thickness of door finishes / facings as follows:

Facing Material	Max. Approved Thickness
Paint	0.5mm
Timber veneer	2mm
PVC / Plastic Laminate	2mm
Cellulosic foils	0.4mm

NOTES:

- Metallic facings are not approved (except for push / buffer and kick plates) See Section 8 Hardware.
- Core calibration is limited to 1mm (0.5mm from each face).
- Plastic laminates should not extend over door edges.
- Materials must not cover intumescent seals.



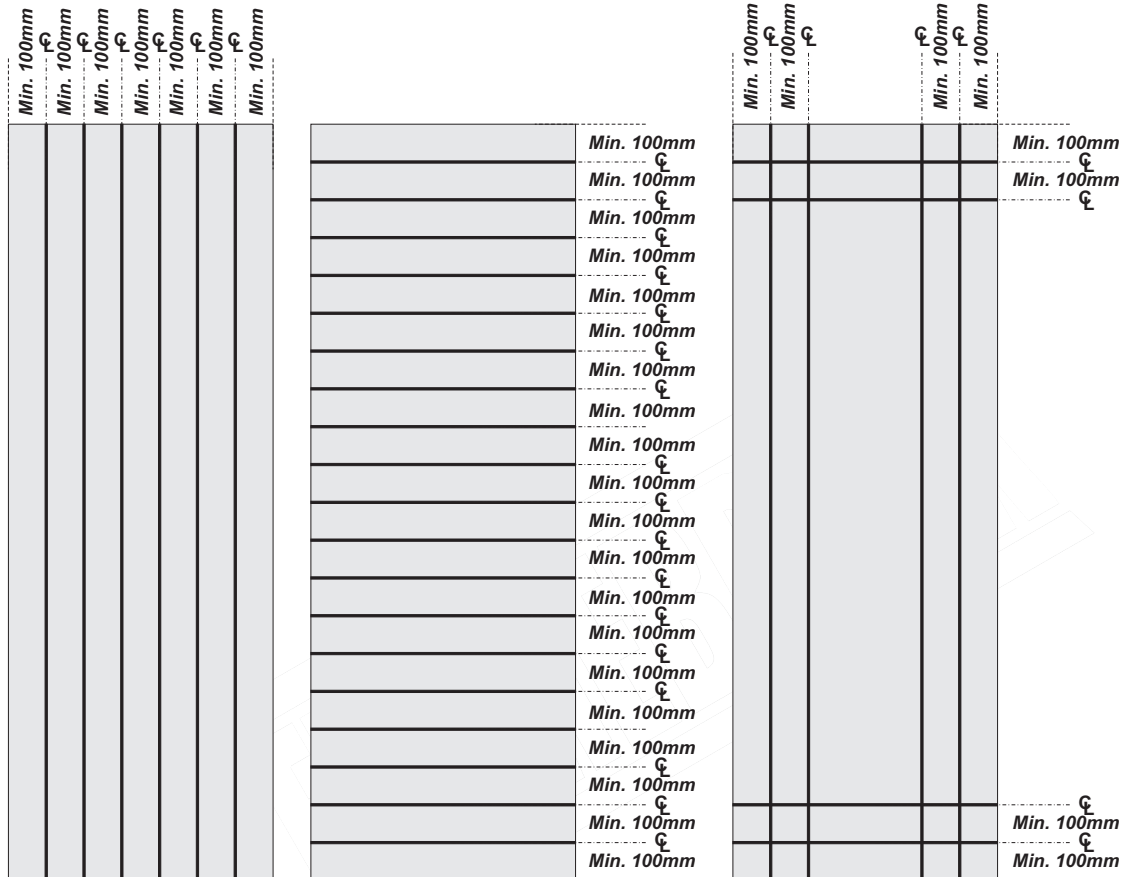
3.12 Lippings & Facings



Decorative Grooves:

Maximum approved grooving options for FD30 application using FLAMEBREAK™ 630 & FF630 core constructions only illustrated.

Fig. 3.28



Decorative Grooves:

FLAMEBREAK™ based doors, (including doors for FD30 fire rated applications) using 630 and FF630 cores only may be face machined to provide for decorative grooves.

The use of maximum 3mm x 3mm decorative grooves is approved for fire door applications for single leaf and double leaf configurations for FD30 fire door applications only.

Grooves may be painted or stained or may be filled with hardwood strips (or other material e.g. Laminate) to create desired aesthetic effects.

For vertical or horizontal grooving in fire doors the grooves may extend to the full height or width of the door leaf with an unlimited number of parallel grooves, subject to the minimum (100mm) approved margins shown in Fig. 3.28.

Where both horizontal and vertical grooves are required for the same fire rated door leaf, this decorative feature is limited to 4No. vertical and 4No. horizontal grooves. Subject to the minimum (100mm) approved margins shown in Fig. 3.28.

Grooves may be extended through to transomed overpanels (not flush overpanels) for storey height door assemblies and to the adjacent leaf for pairs of doors.

