Hardware General:

FLAMEBREAK™ is a laminated wood core product providing for universal screw fixing without the necessity to provide for additional timber bocking to receive hardware.

For use with fire rated door assemblies, the following recommendations apply:
a/ Reference should be made to BS8214 : 2016. Code of Practice for Fire Door Assemblies.
b/ Reference should be made to the 'Hardware for Timber Fire and Escape Doors' Code of Practice published jointly by the DHF *(Door & Hardware Federation)* and the GAI *(Guild of Architectural Ironmongery).*

Fixings: All hardware fitted to FLAMEBREAK™ based doors should be fixed with wood screws. Where fixings are likely to screw into end grain, the use of fully threaded 'Twinfast' or Chipboard screws is recommended. The screw size for load bearing items should suit the particular item of ironmongery, otherwise Min. 1 1/2in. No.8 fixing screws should be used, in all cases, the use of pilot holes to suit screw sizes is recommended.

Fire Door Applications:
NOTE: For 'product assured' items, the fixing instructions provided by the hardware manufacturer should be strictly adhered to and these instructions take precedence over BS8214 and Code of Practice general recommendations in the event of any conflict.

FLAMEBREAK™ based doors, like other wood and wood based doors, rely on the core material to erode at a predictable rate for their fire performance. Intumescent seals fill gaps around the door(s) that may occur as a result of shrinkage or distortion under fire conditions. The removal of core and intumescent material to accommodate hardware creates weaknesses that can be exploited under attack by fire. Large areas of metal, when used with a wood door can induce excessive distortion and premature failure. It is recommended that hardware is selected with care in consideration of these risks.

It is not unusual for hardware to be specified prior to the specification of the doors and without knowledge, at the time of preparation of hardware schedules, of the fire performances that need to be satisfied. It is a Designer's responsibility to ensure that the door assembly designs meet the requirements of national and local regulations for the purpose of fire certification. *(See: BS9999).*

FLAMEBREAK™ like other wood based products provides for very good insulation performances with a potential to provide for an insulation performance equal to the integrity performance. *(See BS476 Pt.22)*. Metal passing through the door from one face to another creates a path for thermal bridging, (*i.e. The transfer of heat from one side of the door to the other*), this will reduce the insulation properties of the door and in extreme cases may give rise to ignition on the non fire face of the door.

Under BS476 Pt.20 fire test conditions the pressure 'normal' in the furnace occurs at *(approx.)* 1000mm above floor level. Areas of door above the normal are subjected to increasing positive pressure from the furnace side while areas below the normal are subjected to negative pressure from the furnace side. This results in 'cold' air entering the furnace under the door with a cooling effect on this edge. Hardware items, particularly locks & latches, should be positioned below the 'normal' where possible.
NOTE: The pressure normal is lowered to 500mm above floor level for testing to BS EN 1634-1.

Where the door / frame seals are interrupted to receive hardware it may be necessary to provide for replacement sealing. The use of pressure intumescent seals *(e.g. Palusol P100 or Graphite)* may be unsuitable for this purpose due to a risk that pressure seals could compete with door / frame seals in an unpredictable manner. The replacement intumescent sealing should generally be of the low pressure type. *(Usually Phosphate based)*. Low pressure intumescent is available in sheet form *(often pre cut dedicated gaskets to suit particular items of hardware)*. (***See page 8.2***)

Intumescent Gaskets for Hardware:

Intumescent Gaskets for Hardware:

All hardware fittings that require the removal of door core material when used with FLAMEBREAK™ door constructions for fire door applications must be used with intumescent gaskets unless otherwise stated for the particular hardware product.

NOTE: Some hardware products are supplied complete with dedicated intumescent gaskets. Use of dedicated intumescent gaskets take precedence over the following listing and these must be used in accordance with the suppliers installation instructions.

Approved intumescent materials for these applications are as follows:

Application	Location	Product / Manufacturer	FD30	FD60
Hinges	Under both hinge blades. ***NOTE: May be omitted for FD30 applications only for door heights up to 2400mm***	**1/** 1mm Interdens - *Dufaylite Developments Ltd.*	✓	✓
		2/ 1mm MAP paper - *Lorient Polyproducts Ltd.*	✓	×
		3/ 1mm Pyrostrip 300 - *Mann McGowan Ltd.*	✓	×
		4/ 1mm Therm-A-Strip - *Intumescent Seals Ltd.*	✓	✓
		5/ 1mm G30 - *Sealmaster Ltd.*	✓	✓
		6/ 1mm NOR910 - *Norsound Ltd.*	✓	✓
Locks / Latches	Under forend & keep for double leaf door assemblies *OR* if the forend or keep is greater than 150mm high up to the maximum assessed dimension.	**1/** 1mm Interdens - *Dufaylite Developments Ltd.*	✓	✓
		2/ 1mm MAP paper - *Lorient Polyproducts Ltd.*	✓	×
		3/ 1mm Pyrostrip 300 - *Mann McGowan Ltd.*	✓	×
		4/ 1mm Therm-A-Strip - *Intumescent Se*als Ltd.	✓	✓
		5/ 1mm G30 - *Sealmaster Ltd.*	✓	✓
		6/ 1mm NOR910 - *Norsound Ltd.* *(NOTE 1)*	✓	✓
Top Pivot Fittings	Lining to all sides of the mortice.	**1/** 2mm Interdens - *Dufaylite Developments Ltd.*	✓	✓
		2/ 2mm MAP paper - *Lorient Polyproducts Ltd.*	✓	×
		3/ 2mm Therm-A-Flex - *Intumescent Seals Ltd.*	✓	×
		4/ 2mm Therm-A-Strip - *Intumescent Seals Ltd.*	✓	✓
		5/ 2mm G30 - *Sealmaster Ltd.*	✓	✓
		6/ 2mm NOR920 - *Norsound Ltd.*	✓	×
Flush Bolts	Lining to all sides of the mortice.	**1/** 2mm Interdens - *Dufaylite Developments Ltd.*	✓	✓
		2/ 2mm MAP paper - *Lorient Polyproducts Ltd.*	✓	×
		3/ 2mm Therm-A-Flex - *Intumescent Seals Ltd.*	✓	×
		4/ 2mm Therm-A-Strip - *Intumescent Seals Ltd.*	✓	✓
		5/ 2mm G30 - *Sealmaster Ltd.*	✓	✓
		6/ 1mm NOR910 - *Norsound Ltd.*	✓	✓
Cableways	Lining to the base of the groove. *(See detail page ???)*	**1/** 2mm Interdens - *Dufaylite Developments Ltd.*	✓	✓
		2/ 2mm MAP paper - *Lorient Polyproducts Ltd.*	✓	×
		3/ 2mm Therm-A-Flex - *Intumescent Seals Ltd.*	✓	×
		4/ 2mm Therm-A-Strip - *Intumescent Seals Ltd.*	✓	✓
		5/ 2mm G30 - *Sealmaster Ltd.*	✓	✓
		6/ 2mm NOR920 - *Norsound Ltd.*	✓	✓

NOTE 1: The maximum latch forend size for FD60 application using 1mm NOR910 gaskets is 155mm high x 25mm wide.

Fire Door Applications - Hanging devices - Hinges:

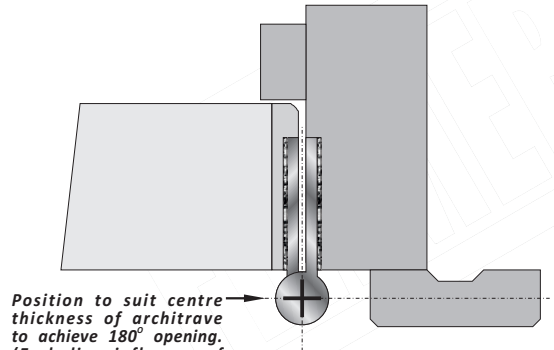
Hinges for use with FLAMEBREAK™ doors:

Hinges for use with FLAMEBREAK™ doors must provide for the appropriate BS EN 1935 : 2002 performance according to the door weight and anticipated usage and be suitable for use with timber fire doors to the required performance.

It is recommended that the hinge knuckle centre should be set as near to the opening face of the door as possible to minimise the 'door growth' during operation. *(See 'Growth Formula' -* ***Section 9 - page 9.32 - Coordination****)*.

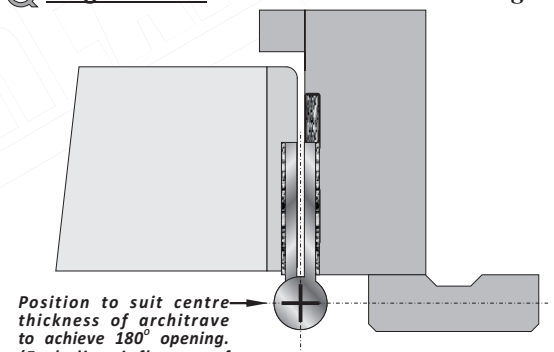
A hinge knuckle centered on the centre line of the architrave thickness will allow for 180° opening *(excluding the influence of other surface mounted hardware)*.

Hinges - FD30: *Fig. 8.1*



Blade Height	**90~120mm**
Blade Width (*excluding knuckle*)	**30~35mm**
Blade Thickness	**2.5 ~ 4mm**
Fixings	**Min. 4No. 30mm long #8 or #10 steel wood screws per hinge blade.**
Materials	**Steel or stainless steel *OR* brass (*Min. 800°C melting point*).**
Intumescent Protection	**See page *8.2* - FD30 Listing**
Hinge Positions:	**See page *8.3*** *Fig. 8.3*

Hinges - FD60: *Fig. 8.2*



Blade Height	**90~120mm**
Blade Width (*excluding knuckle*)	**30~35mm**
Blade Thickness	**2.5 ~ 4mm**
Fixings	**Min. 4No. 30mm long #8 or #10 steel wood screws per hinge blade.**
Materials	**Steel or stainless steel**
Intumescent Protection	**See page *8.2* - FD60 Listing**
Hinge Positions:	**See page *8.3*** *Fig. 8.3*

Fire Door Applications - Hanging devices - Hinges:

Fire Door Applications - Hinge Locations:

Fig. 8.3

Hinge Location - Fire rated Door Assemblies:

3No. hinges are required for use with door leaf heights 1500mm ~ 2400mm located as follows:

OPTION 1:
Top Hinge = dim. a = 200 ~ 220mm from top of door leaf.
Centre Hinge = located equispaced between top and bottom hinge
Bottom Hinge = dim. b = 220 ~ 300mm from bottom of door leaf.

OPTION 2:
Top Hinge = dim. a = 200 ~ 220mm from top of door leaf.
Alternative = dim. c = 200mm from centre line of top hinge.
Bottom Hinge = dim. b = 220 ~ 300mm from bottom of door leaf.

For door heights over 2400mm *(or where otherwise specified in project details)* additional hinges are used located as follows:

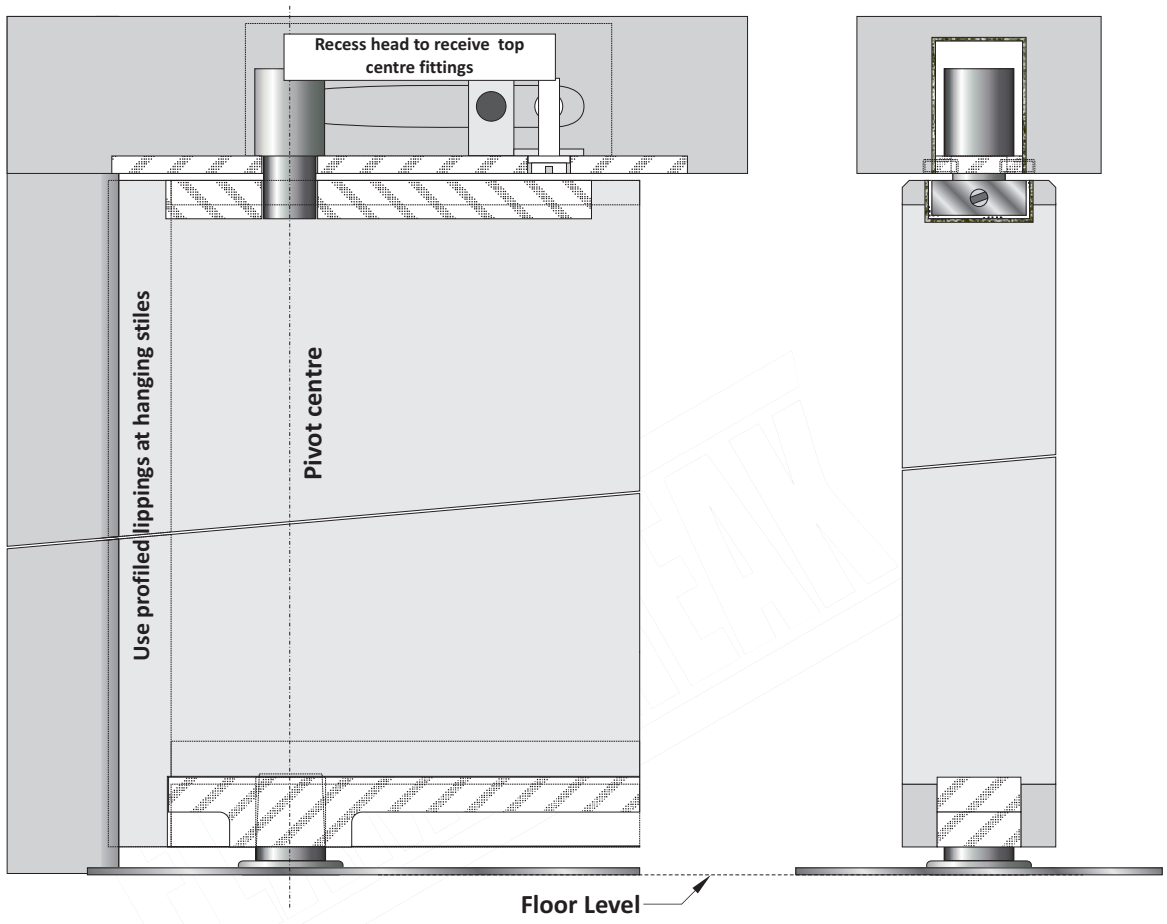
Top Hinge = dim. a = 200 ~ 220mm from top of door leaf.
Additional Top Hinge = dim. c = 200mm from centre line of top hinge.
Centre Hinge(s) = located equispaced between 2nd. top and bottom hinge with a further hinge for each additional 500mm in door height.
Bottom Hinge = dim. b = 220 ~ 300mm from bottom of door leaf.

NOTE: For door heights less than 1500mm doors may be hung on 2No. hinges located to suit dims. 'a' & 'b' in these details.

Fire Door Applications - Hanging devices - Floor Mounted Closers - Double Action:

Floor Mounted Closers - Double Action - FD30 & FD60:

Fig. 8.4



Double Action Pivots FD30 & FD60:

Automatic closing devices must be either as tested or components of equal specification have demonstrated contribution to the required performance of similar wood based types of door assembly design when tested to BS 476 Pt.22 : 1987 or BS EN 1634-1 with wood doors.

The top pivots to floor spring assemblies must be protected with intumescent gaskets as described by reference to ***page 8.2*** for the relevant fire performance. Alternatively a dedicated intumescent pack provided by the floor spring supplier may be used.

The above illustration indicates use of the DORMA BTS series floor mounted closer with double action fittings.

Hanging stile lippings must be profiled (*to suit the pivot centre*).

Pilot holes should be drilled to receive screw fixings. Min. 1 1/2in. No.8 wood screws should be used for fixing.

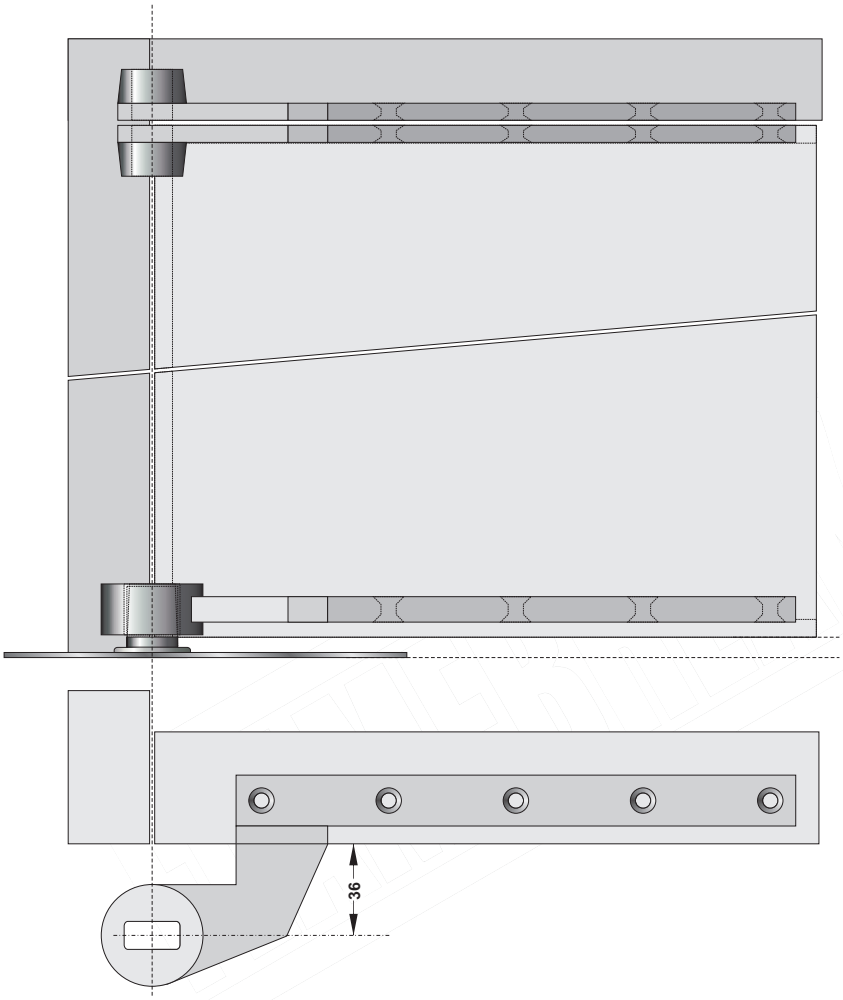
NOTE 1: Additional hardwood blocking may be used at the pivot location positions to provide for improved fixing of the load bearing elements.

NOTE 2: Bottom strap fittings can be over recessed to provide for required under door clearances.

NOTE 3: Transom mounted double action closers are <u>not</u> approved for 'Q-Mark' applications but may be used in reliance upon test / assessment data provided 'by others'. (e.g. Dorma RTS 85).

Fire Door Applications - Hanging devices - Floor Mounted Closers - Single Action:

Floor Mounted Closers - Single Action - FD30 & FD60: *Fig. 8.5*



Double Action Pivots FD30 & FD60:

Automatic closing devices must be either as tested or components of equal specification have demonstrated contribution to the required performance of similar wood based types of door assembly design when tested to BS 476 Pt.22 : 1987 or BS EN 1634-1 with wood doors.

The top pivots to floor spring assemblies must be protected with intumescent gaskets as described by reference to ***page 8.2*** for the relevant fire performance. Alternatively a dedicated intumescent pack provided by the floor spring supplier may be used.

The above illustration indicates use of the DORMA BTS series floor mounted closer with single action fittings.

Pilot holes should be drilled to receive screw fixings. Min. 1 1/2in. No.8 wood screws should be used for fixing.

NOTE 1: Additional hardwood blocking may be used at the pivot location positions to provide for improved fixing of the load bearing elements.

NOTE 2: Bottom strap fittings can be over recessed to provide for required under door clearances.

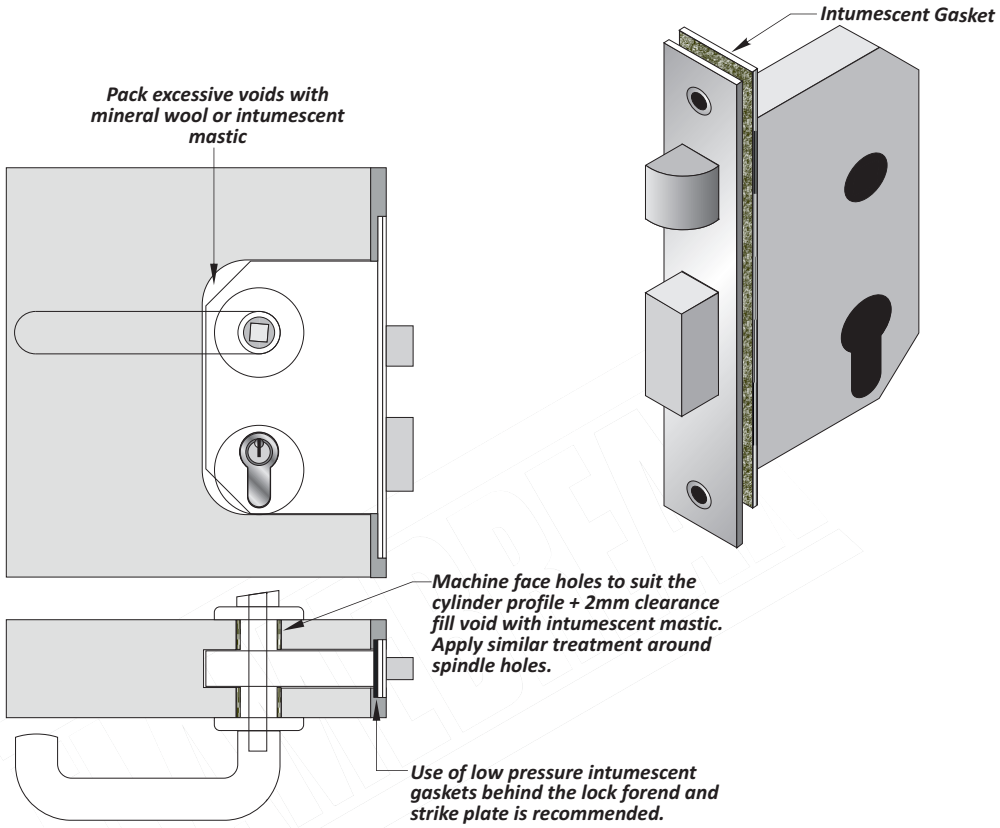
NOTE 3: Transom mounted double action closers are <u>not</u> approved for 'Q-Mark' applications but may be used in reliance upon test / assessment data provided 'by others'. (e.g. Dorma RTS 85).

WARNING: The pivot centre for these fittings extends a considerable distance from the opening face of the door. This can give rise to operational problems when used with narrow or thick door. See 'Growth Formula' Section 9 - page 9.43 - Coordination

Fire Door Applications - Securing devices - Locks & Latches:

Locks & Latches - FD30 & FD60:

Fig. 8.6



Locks & Latches - FD30 & FD60:

Latches and locks must be either 'as tested', alternatively components complying with the following specifications are acceptable:

Lock / Latch Specification FD30:

Maximum forend & strike plate dimension.	**235mm high by 24mm wide by 4mm thick**
Maximum body dimensions	**18mm thick by 100mm wide by 165mm high**
Intumescent Protection	**See page *8.2* - FD30 Listing**
Materials	**All parts essential to the locking / latching action (including the latch bolt, forend and strike) to be steel or brass, *melting point $\geq 800^{o}C$.***
Location	**Between 850 ~ 1200mm above floor level**

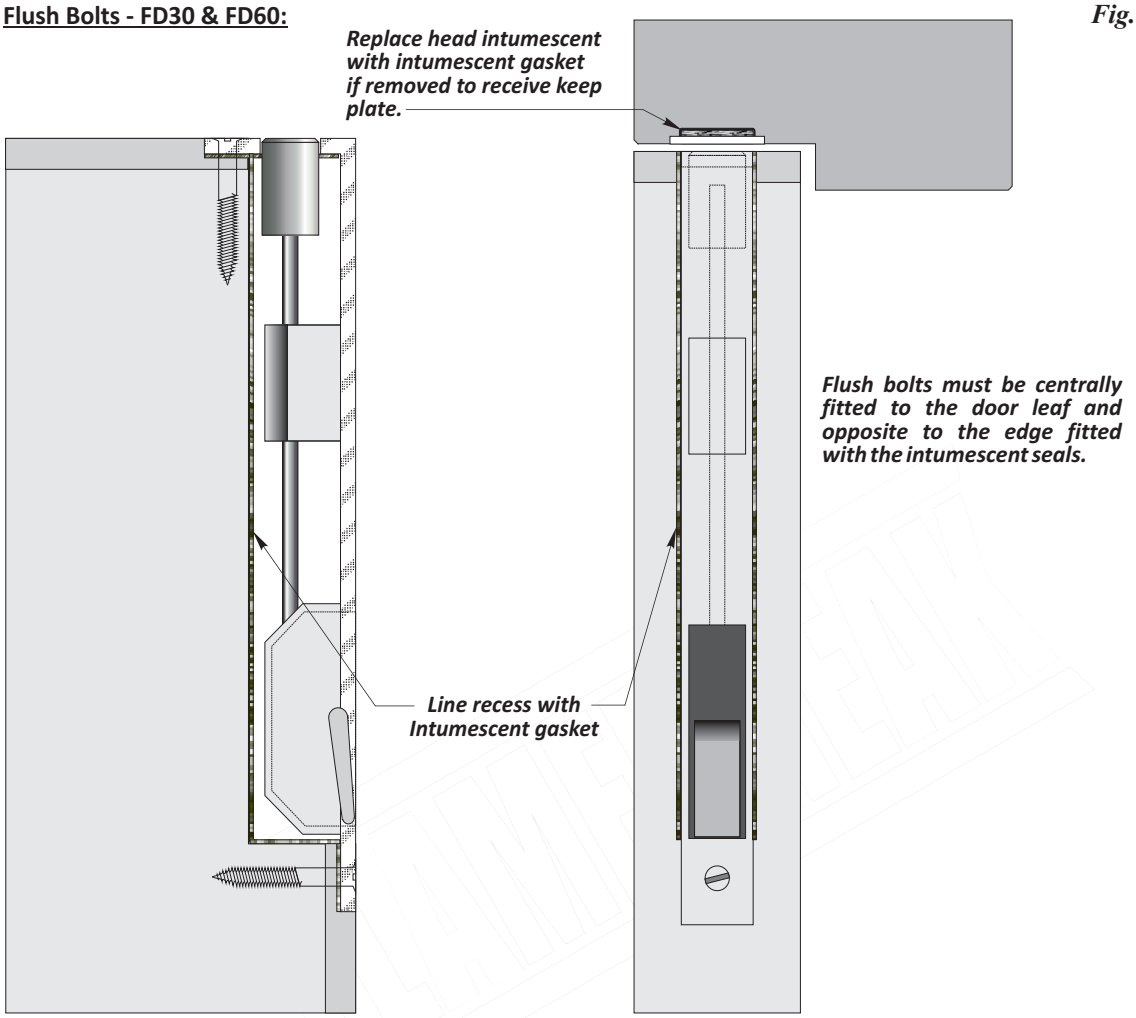
Lock / Latch Specification FD60:

Maximum forend & strike plate dimension.	**235mm high by 24mm wide by 4mm thick**
Maximum body dimensions	**18mm thick by 100mm wide by 165mm high**
Intumescent Protection	**See page *8.2* - FD60 Listing**
Materials	**All parts essential to the locking / latching action (including the latch bolt, forend and strike) to be steel or stainless steel.**
Location	**Between 1000 ~ 1200mm above floor level**

Fire Door Applications - Securing devices - Flush Bolts:

Flush Bolts - FD30 & FD60:

Fig. 8.7



Flush Bolts FD30 & FD60:

Bolts may be required to secure the secondary leaf of pairs. There are no restrictions on the use of surface mounted bolts (e.g. Barrel bolts) that do not interfere with the edge sealing of the doors.

Edge fixed flush bolts are approved for FD30 and FD60 fire door applications subject to the following:

Flush Bolt Specification FD30:

Flush bolts may be incorporated into the top and bottom of the meeting edge of the inactive (*or secondary*) leaf of a double leaf door assembly (*pair*), provided that the following maximum dimensions are not exceeded:
Length = 200mm.
Depth = 20mm.
Width = 20mm.
Flush bolts may be in steel or brass.

Flush Bolt Specification FD60:

Flush bolts may be incorporated into the top and bottom of the meeting edge of the inactive (*or secondary*) leaf of a double leaf door assembly (*pair*), provided that the following maximum dimensions are not exceeded:
Length = 200mm.
Depth = 20mm.
Width = 20mm.
Flush bolts must be in steel.

For both FD30 and FD60 applications the mortise to receive flush bolts should be as tight to the mechanism as is compatible with its operation and the mortice must be lined with an approved intumescent gasket. ***See page 8.2 for FD30 and FD60 approved gasket listing.***

Fire Door Applications - Operating Devices - Door Closers

Operating Devices - Closers - FD30 & FD60:

Automatic closing devices e.g. Single Action Overhead Closers, must either be tested or components of equal specification that have demonstrated contribution to the required performance of these types of FD30 or FD60 door assembly designs when tested to BS476 Pt.22 : 1987 or, BS EN 1634-1.

The use of concealed closers with FLAMEBREAK™ door constructions is not 'Q- Mark' approved.

See Appendix - Page 16G.1 for details of Rutland Closers

Concealed Closers

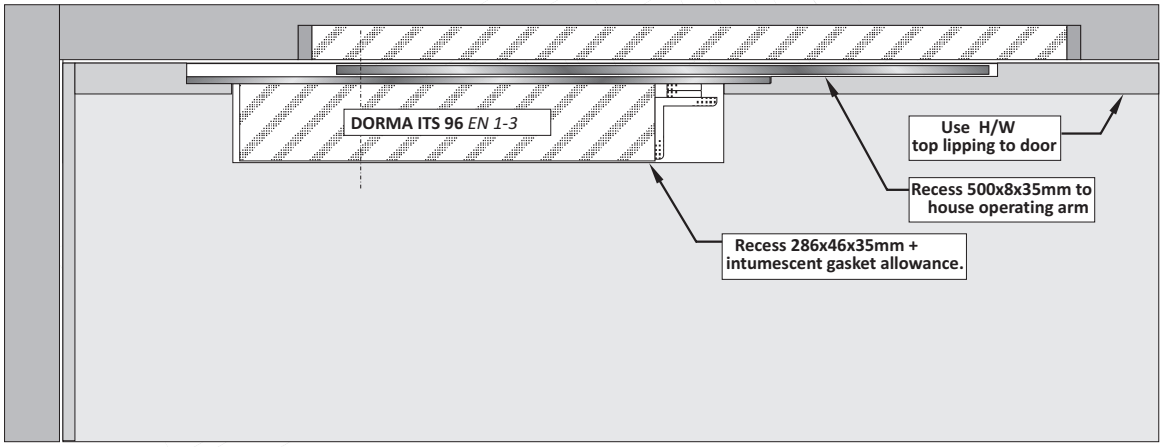
1/ Some concealed closer designs have been successfully tested for fire door applications in wood doors and may be used with FLAMEBREAK™ core doors in reliance upon test / assessment data provided 'by others'. However, these devices do require the removal of a large amount of core material to house the closer and its dedicated intumescent pack leaving minimal thickness door material either side of the mortise.

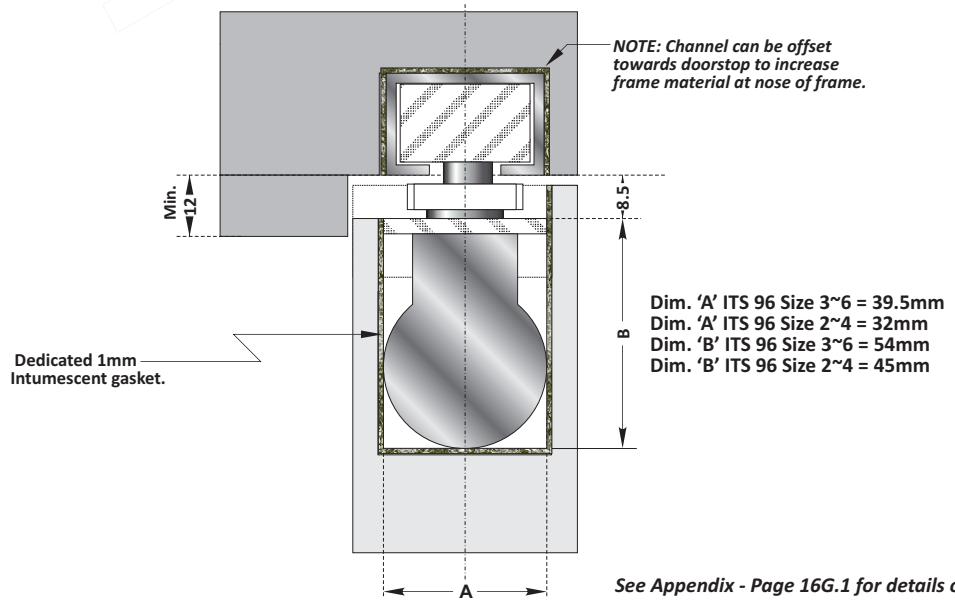
2/ It is recommended that these are only used with min. 50mm thickness doors to minimise the risk of 'telegraphing' of the mortise on the face of the door and a risk of mechanical failures at the mortise position.

3/ It is further recommended that doors are hardwood lipped on the top edge to provide for improved fixing.

Concealed Closers: (*Dorma ITS96 illustrated*) *Fig. 8.8*

NOTE: This detail is not approved for 'Q-Mark' Fire Door applications.





See Appendix - Page 16G.1 for details of Rutland Closers

Fire Door Applications - Other Hardware:

Securing Devices - *Barrel Bolts - FD30 & FD60:*
Barrel Bolts of a maximum length of 450mm can be surfaced fixed to the top closing corner of double leaf door assembly provided that the particular item does not require the removal of any material from the door leaf or the frame and does not interfere with perimeter intumescent sealing.

Operating Devices - *Pull Handles - FD30 & FD60:*
Pull handles may be surface fixed to both FD30 & FD60 door provided that they are steel or brass and the length is limited to 1200mm between the fixing points.
Bolt through fixing pull handles up to the same length may also be used for fire door applications with no additional intumescent sealing required, provided that the hole through the door to receive the bolt provides for a tight fit.

Operating Devices - *Push, Buffer and Kick Plates - FD30 & FD60:*
Face fixed only push, buffer and kick plates may be fitted to FLAMEBREAK™ doors for fire door applications provided that their fitting does not require the removal of any part of the door core.
These items of hardware are permitted up to a maximum of 20% of the door leaf area when screw fixed or 30% of the door leaf area when fixed with a contact or other thermally softening adhesive.
Plates must not return around the door edges.

Operating Devices - *Door Selectors - FD30 & FD60:*
Door selectors may be freely applied for use with FLAMEBREAK™ doors for FD30 and FD60 fire door applications, provided that they are not invasive in the door leaf edges or the door frame. Those that are invasive will require fire resistance test / assessment evidence to support their use. Additional intumescent protection is not required unless fire test / assessment documentation relating to the particular device requires otherwise.

Operating Devices - *Panic Hardware - FD30 & FD60:*
Panic hardware may be used with FLAMEBREAK™ doors for FD30 and FD60 fire door applications, provided that the installation does not require the removal of any core material from the door leaf or the removal of any timber from the door leaf, doorstop or frame reveal. Further, the panic hardware must not, in any way, interfere with the self-closing action of the fire doors.

Miscellaneous Devices - *Door Security Viewers - FD30 & FD60:*
Door security viewers may be used with FLAMEBREAK™ core doors for FD30 and FD60 applications provided that the viewers are manufactured from brass or steel with viewer bodies of a diameter of 15mm *(or less)* and provided that the through-hole is bored tight to the case of the viewer with a maximum tolerance of +1mm. Lenses must be glass.
Viewers must be bedded in intumescent mastic unless otherwise approved for use without additional intumescent by reference to fire test / assessment data relating to the particular viewer design when tested in wood doors.

Miscellaneous Devices - *Acoustic, Weather and Dust Perimeter Seals - FD30 & FD60:*
Acoustic, weather and dust seals with a proven flame retardant performance may be fitted to FLAMEBREAK™ based door assemblies for FD30 and FD60 applications providing that the fitting of the seals does not interfere with the activation of the door assembly intumescent seals or hinder the self closing function of the door leaves.

Miscellaneous Devices - *Automatic Threshold Seals - FD30 & FD60:*
Fully mortised automatic threshold drop seals with a proven performance when tested with wood doors may be fitted to FLAMEBREAK™ based door constructions for FD30 and FD60 applications providing that the fitting of the seals does not interfere with the activation of the door assembly intumescent seals or hinder the self closing function of the door leaves.

The following Automatic Door Bottoms / Drop Seals are 'Q-Mark' approved for use with FLAMEBREAK™ doors:

Manufacturer	Product
Lorient Polyproducts Ltd.	LAS8001Si
Pemko	411-AR
Raven	RP8Si
Athmer	Schall-Ex Duo L-15
Norsound Ltd.	NOR810, NOR810S

Fire Door Applications - Other Hardware:

Miscellaneous Devices - *Air Transfer Grilles - FD30 & FD60:*

Air transfer grilles not exceeding 0.2m^2 may be fitted to FLAMEBREAK™ based door assemblies for FD30 and FD60 applications provided that the particular grille design is supported by fire test evidence to BS476 Pt.22 : 1987 or BS EN 1634-1 that demonstrates an integrity performance that is at least equal to the desired fire performance of the door assembly when fitted into wood door leaves of a compatible thickness.

Margins for apertures to receive grilles are to be as described for glazing *(See **Section 6**)* with the grille located towards the bottom of the door *(i.e. in the low / negative pressure area of the door under test conditions)* unless the fire test / assessment data relating to the particular grille design provides for alternative locations in a wood based door.

Grilles must be fitted precisely in accordance with the grille manufacturers test / assessment data, including all hardwood lining, intumescent seals, fixings etc. as required for the relevant fire performance.

NOTE: When used with glazed doors, the maximum permitted area for glazing approved for the particular fire performance should be reduced by an amount that is at least equal to the area of the door that is occupied by the grille.

Pyroplex Air Transfer Grilles listed below are 'Q-Mark' approved for use with FLAMEBREAK™ door constructions for FD30 & FD60 fire door applications subject to the following:

Pyroplex Ltd:

Part No.	Dimensions mm.	Air Flow (sq. cm)	Compatible Face Plate
ATG 1500	150 x 150	153	FP1500
ATG 1503	150 x 300	307	FP1503
ATG 1300	300 x 300	614	FP1300
ATG 2251	112 x 225	161	FP2251
ATG 2250	225 x 225	323	FP2250

- ***Grilles must be located a minimum of 100mm from the edge of the door leaf and not less than 80mm apart if more than one grille is fitted.***
- ***The area occupied by the air transfer grille(s) must be deducted from the area of glazing that is otherwise approved for the particular door construction.***
- ***Grilles may be fitted up to a maximum height of 2200mm from the threshold.***
- ***The grilles must be installed in accordance with the manufacturer's installation details which includes a 6mm thick hardwood aperture liner (excluding Beech -** Fagus Sylvatica **- for FD60 applications) and sealed using Pyroplex intumescent mastic around the perimeter of the grille.***

Miscellaneous Devices - *Letter Plates / Boxes - FD30 & FD60:*

Letter plates *(boxes)* may be fitted to FLAMEBREAK™ based door assemblies for FD30 and FD60 applications provided that the particular letter plate *(box)* design is supported by fire test evidence to BS476 Pt.22 : 1987 or BS EN 1634-1 that demonstrates an integrity performance that is at least equal to the desired fire performance of the door assembly when installed in a wood door of a compatible thickness.

Margins to the leaf edges must not be less than the margins approved for glazing *(See Section 6 - Glazing).*

NOTE: Beech -** Fagus Sylvatica **- must not be used as an aperture lining material for FD60 applications.

Letter plates *(boxes)* should generally be located towards the bottom of the door *(i.e. not more than 1000mm above the threshold level)* unless the fire test / assessment data relating to the particular letter plate *(box)* provides for alternative locations in a wood based door.

Miscellaneous Devices - *Cable Ways for electric locks / strike plates - FD30 & FD60:*

Concealed cable ways to provide for a route for the connection of electric locks / strikes with command units are permitted for use with FLAMEBREAK™ core doors with cable ways concealed in the following way:

- ***A hole of Max. 10mm diameter drilled centre thickness through the door leaf.***
- ***The cable for the electronic closing / latching mechanisms must be no more than 2mm smaller in diameter than the hole through the door leaf.***
- ***The cable for the electronic closing / latching mechanism must be PVC encased.***
- ***Cable ways are only approved for use with latched, single leaf, single acting door assemblies with maximum door leaf dimensions of 2100mm high x 900mm wide.***
- ***The conduit hole must be located below 1500mm from the threshold and must be spaced to provide fr a minimum margin of 90mm from any apertures within the door. e.g. glazing, air transfer grilles , letter plates etc.***
- ***The particular hardware for this application must be supported by appropriate fire test evidence to the required performance in wood doors and must be fitted with intumescent gaskets for the lockset, closing mechanism, receiver plate, cable loops etc. to replicate 'as tested' installations.***

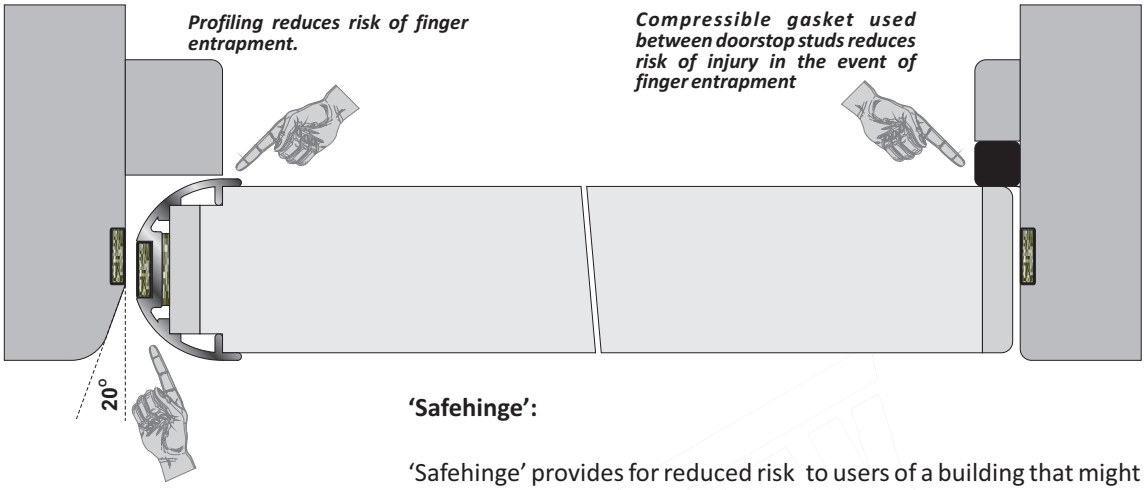
WARNING: The use of hardware items with a proven fire performance when used with metal doors should not be used with wood based fire doors (and vice versa) without the benefit of further testing.

Fire Door Applications - Other Hardware:

'Safehinge'

Fig. 8.9

NOTE: This detail is <u>not</u> approved for 'Q-Mark' Fire Door applications.



Profiling reduces risk of finger entrapment when used with backcheck closer, limiting stay or stop to limit opening angle.

'Safehinge':

'Safehinge' provides for reduced risk to users of a building that might otherwise result from finger entrapment at the hanging stiles of doors.

The Norsound 'Fingersafe' compressible seal can be surface applied to the face of the doorstop to reduce the risk of injury at the closing stile.

See: www.norsound.co.uk *for further information.*

'Safehinge'

'Safehinge' provides for a door hanging pivot system with design features that minimises the risk of injury due to finger entrapment at the hanging stiles.

At the closing stile, the face of the doorstop can be fitted with the Norsound 'Fingersafe' compressible gasket that provides for a similar injury reduction function.

Being a pivot system, the 'Safehinge' can be used with both single action and double action doors, but with opening limited to slightly more than 90°.

NOTE 1: 'Safehinge' is <u>not</u> a 'Q-Mark' approved product but may be used with fire rated door sets in reliance upon test / assessment data provided 'by others'.

NOTE 2: The 'Safehinge ALU30 has been approved for use with 44mm FLAMEBREAK™ doors for FD30 (BS476 Pt.22) applications by reference to IFC (International Fire Consultants Ltd) Field of Application Report IFCA/08160 - Rev. B - April 2010 in the following dimensions. Reference should be made to the full assessment before using this product with fire rated doorsets:

IFCA/08160 - Rev. B	Standard Intumescent Seal Specification		Enhanced Intumescent Seal Specification	
Configuration (Door Type)	Maximum leaf height (x associated width)	Maximum leaf width (x associated height)	Maximum leaf height (x associated width)	Maximum leaf width (x associated height)
LSASD	2301 x 727	966 x 1845	2606 x 786	1045 x 2090
ULSASD & DASD	2256 x 713	947 x 1809	2555 x 771	1024 x 2049
LSADD	N/A	N/A	2350 x 836	2350 x 836
ULSADD & DADD	N/A	N/A	2327 x 827	2350 x 836

LSASD = Latched single action single door. ULSASD = Unlatched single action single door. DASD = Double action single door.
LSADD = Latched single action double door. ULSADD = Unlatched single action double door. DADD = Double action double door.