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Title:

Field of Application Report for Moralt Laminesse Firesmoke & Firesafe 44/54mm Doorsets

For:

30 Minutes Fire Resistance

Report No:

Chilt/A13058 Revision D

WF Contract:

421102

Valid From:

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Valid Until:

11th December 2024

Prepared for:

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15 Hardware

15.1 General

The following sections detail the scope and constraints for fitting hardware to the door design.

The following items of hardware must also bear the CE mark:

Locks and latches (EN 12209),

Electro mechanically operated locks (EN 14846),

Single axis hinges (EN 1935),

Controlled door closing devices (EN 1154),

Electrically powered hold open devices (EN 1155),

Door co-ordinators (EN 1158),

Emergency exit hardware (EN 179),

Panic exit hardware (EN 1125).

15.2 Tested Hardware

The following hardware has been successfully incorporated in the tests on Laminesse Firesafe & Firesmoke doorsets.

Element	Manufacturer and Product Reference
Hinges	Royde & Tucker H101 lift off hinges
Closer- surface mounted overhead closers	Dorma Door Controls Ltd TS73V
	Briton 2003E
Latch	Legge ‘life’ tubular mortise latch
Furniture	Aluminium lever type handle

The following concealed hardware has been successfully incorporated in the tests on LAMINESSE FireSmoke & LAMINESSE FireSafe 54mm doorsets.

Item	Make/type	**Size** (mm)
Concealed closer	Dorma ITS 96 with channel guide	52 x 34 x 340 (body) 31 x 22 x 440 (channel)
Concealed hinges	Simonswerk Tectus TE	155 x 26
Multipoint locking system	Glutz Multipoint lock/latch (Ref 1839.7.60.78.1788)	1788 x 20 (forend) 241 x 24 (strike) 110 x 24 (strike) Lock 200 x 89 x 20 Bolts 44 x 67.5 x 20

15.3 Certifire

The Certifire third party certification scheme approves various items of hardware for different door types and different fire ratings and has its own set of requirements relating to that item of hardware.

Where the alternative hardware sections in this report allow alternatives to the tested hardware, Certifire approved hardware may be used as an alternative, subject to the following provisos:

- In all cases, the requirements of this report must take precedence.
- The hardware must comply with the requirements of the relevant section e.g. hinges.

The hardware must comply with the limitations specified in terms of design, materials and dimensions.

15.4 Additional & Alternative Hardware

15.5 Latches & Locks

Latches and locks must either be as tested, or alternatively components with the following specification are acceptable.

Element	Specification
Maximum forend and strike plate dimensions:	235mm high by 25mm wide by 4mm thick
Maximum body dimensions:	18mm thick by 100mm wide by 165mm high.
Intumescent protection:	See section 14
Materials:	All parts essential to the locking/latching action (including the latch bolt, forend and strike) to be steel
Position	800 – 1200mm above the threshold

15.5.1 Multipoint locking

The Glutz multipoint locking system has been tested successfully in LAMINESSE FireSmoke & LAMINESSE FireSafe 54mm doorsets. Other multipoint locking systems can be fitted provided they have been successfully tested in 54mm thick timber based doorsets for 30 minutes to BS 476: Part 22: 1987 or BS EN 1634-1. The mortices must be no bigger than that detailed in section 15.2 for the Glutz multipoint locking system and the manufacturers tested intumescent protection system for the mortices must be installed.

This includes the following Winkhaus systems

- AV2– The system variants acceptable to this assessment are those which fit into the mortices detailed in section 15.2 for multipoint locking systems. However, if the manufacturer assessments permits other system variants for the 54mm thick door construction and this fire rating, then they can be used providing the recommendations contained in that assessment are applied.

When a multipoint locking system is used the door edge seal must be fitted in the frame reveals.

15.6 Hinges

Leaves ≤2250mm (h) must be hung on minimum 3 hinges. Leaves >2250mm (h) must be hung on 4 hinges. Hinges with the following specification are acceptable.

Element		Specification	
Blade height:		90 – 120mm	
Blade width (excluding knuckle):		30 – 40mm	
Blade thickness		2.5 – 4mm	
Fixings:		Minimum of 4 No. 30mm long No. 8 or No.10 steel wood screws per blade	
Materials:		Steel, stainless steel or brass (melting point ≥ 800°C)	
Hinge positions:	If 3 hinges are required:	Top	150 –200mm from the head to top of hinge
		2nd	Minimum 250mm from top hinge or centrally fitted between top and bottom hinge
		Bottom	150 – 250mm from the foot of leaf to bottom of hinge
	If 4 hinges are required:	Top	100-200mm from the head to top of hinge
		2nd & 3rd	Equispaced between top and bottom or 2nd hinge 250mm from top hinge and 3rd hinge equally spaced between 2nd and bottom hinge
		Bottom	150 – 250mm from the foot of leaf to bottom of hinge
Intumescent protection:		See section 14	

15.7 Automatic Closing

Automatic closing devices, must either be as tested or components of equal specification that have demonstrated contribution to the required integrity performance of this type of doorset design, when tested to BS 476: Part 22: 1987 or BS EN 1634-1.

Concealed closer can be fitted into LAMINESSE FireSmoke & LAMINESSE FireSafe 54mm thick doorsets only, provided they have been successfully tested in timber based doorsets 54mm thick for 30 minutes to BS 476: Part 22: 1987 or BS EN 1634-1. The mortices must be no bigger than that detailed in section 15.2 for the Dorma ITS 96 and the manufacturers tested intumescent must be installed.

Note: The top pivots to floorspring assemblies must be protected with 2mm thick intumescent gasket (see section 14) or alternatively the manufacturers tested intumescent pack.

15.8 Pull Handles

Handles may be surface-fixed or bolted through the door leaf, providing they are steel, stainless steel or brass and the length is limited to 1200 mm between the fixing points. If through fixed, there must be no more than 1mm clearance between the hole and stud.

15.9 Push Plates & Kick Plates

Steel or stainless steel face-fixed hardware such as push plates and kick plates may be fitted to the doorsets.

They may be recessed to a maximum depth of 2mm on both sides of the door leaf on LAMINESSE FireSmoke & LAMINESSE FireSafe 54mm thick doorset design only. These items of hardware are permitted up to a maximum of 20% of the door leaf area if mechanically fixed and a maximum of 30% if bonded with a contact or other thermally softening adhesive. Plates must not return around the door edges.

15.10 Door Security Viewers

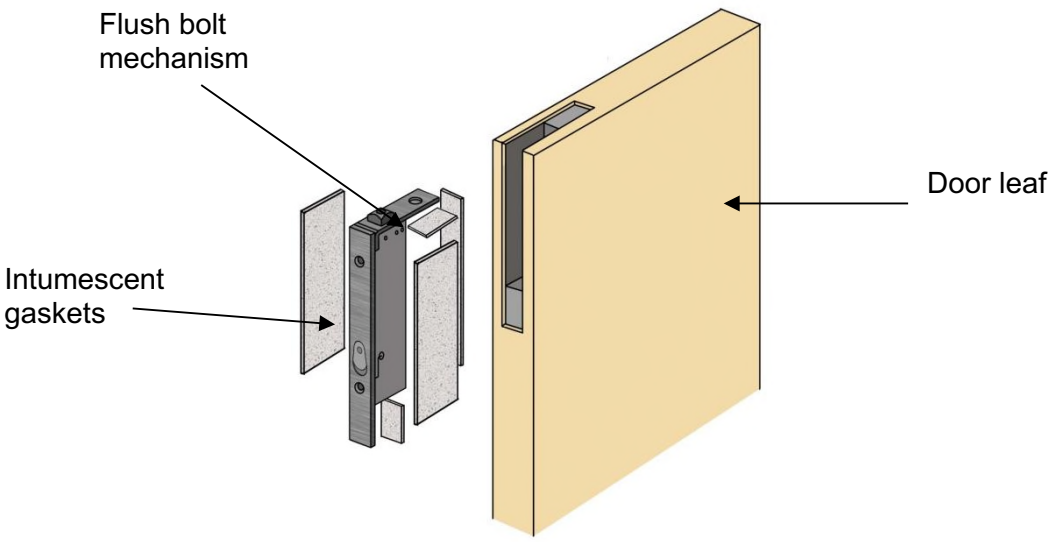
Door security viewers with brass or steel bodies of a diameter less than or equal to 15mm may be used provided that the through-hole is bored tight to the case of the viewer (maximum tolerance +1 mm). Lenses must be glass and the item must be protected with acrylic intumescent mastic.

15.11 Flush Bolts

Flush bolts may be incorporated centrally into the top and bottom of one meeting edge, providing the following maximum dimensions are not exceeded and the components are fitted opposite the leaf edge fitted with intumescent strips:

- 210mm long x 20mm deep x 20mm wide.

Flush bolts must be steel or brass and the mortice must be as tight to the mechanism as is compatible with its operation. All edges of the mortices of the keep and body mechanism must be protected with intumescent gaskets as specified in section 14. Alternatively the hardware manufacturers tested gaskets may be used. Alternatively the hardware manufacturers tested gaskets may be used. See diagram below for example of intumescent protection to flush bolt.



15.12 Panic Hardware

Panic hardware may be fitted, providing the installation does not require the removal of any timber from the leaf, stop or frame reveal and it does not interfere with the self-closing action of the door leaf.

15.13 Door Selectors

Selectors may be fitted providing the installation does not require the removal of any timber from the leaf, stop or frame reveal and they do not interfere with the self-closing action of the door leaf.

15.14 Environmental Seals

Silicon based flame retardant acoustic, weather and dust seals (e.g. Norsound 710, Norsound 720, Lorient IS1212, IS1511, IS7025, IS7060) may be fitted to this doorset design without compromising the performance, providing their fitting does not interfere with the activation of the intumescent seals or hinder the self closing function of the leaves.

The following Deventer seals can be incorporated as shown in the figure in section 10.2

- DS6955a
- DS6922a
- DS155a
- DS112a

15.15 Threshold Seals

The following types of automatic threshold drop seals may be recessed in to the bottom edge of leaves to this design without compromising the performance:

Manufacturer	Product Reference
Lorient Polyproducts Ltd.	IS8010si
	LAS8005si
Raven	RP8Si
Athmer	Schall-Ex Duo L-15
Norsound Ltd.	810 range
STS Ltd	ST422
Planet	HS, RH and US

15.16 Letter Boxes/Plates

Letter boxes/plates may be fitted providing the product has demonstrated contribution to the required integrity performance of this type of doorset design, when tested to BS 476: Part 22: 1987 or BS EN 1634-1, when installed in a timber based doorset of comparable thickness. Products may be fitted up to 1200mm from floor level and no closer than 100mm to any leaf edge.

15.17 Air Transfer Grilles

15.17.1 General

Air transfer grilles may be fitted providing the product has suitable test evidence to BS 476: Part 22: 1987 or BS EN 1634-1 that demonstrates a minimum 30 minutes integrity performance when installed within a timber based doorset of comparable thickness. Margins to the leaf edges will remain as detailed for glazing and the position of the unit will be dictated by the pressure regime tested in the proving evidence (normally below mid height). The area occupied by the air transfer grille must not exceed that proven by the supporting fire test for the specific type of grille being used, and must be deducted from the area of glazing, if both elements are fitted.

15.17.2 Smoke Control

Smoke control as defined by the performance criteria set out in BS 476: Part 31: Section 31.1 or BS EN 1634-3: 2001 cannot be claimed for a doorset fitted with an air transfer grille(s) unless it is automatically operating on activation of the smoke alarm and has supporting data to the aforementioned test standards for smoke control.

16 Door Gaps

For fire resistance applications, door gaps and alignment tolerances must fall within the following range:

Location	Dimension
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm.
Threshold	10mm between bottom of leaf and top of floor covering For ambient smoke control tolerances see section 21

17 Structural Opening

The door assemblies are approved for installation within standard rigid and flexible supporting constructions that have demonstrated a minimum of 30 minutes fire resistance, when tested to BS 476: Part 22: 1987. Consideration must be given to the suitability of the supporting construction for supporting the proposed door assemblies.

18 Fixings

The door assemblies must be fixed back to the supporting structure using steel fixings appropriate for the substrate. The fixings are to be inserted at 500mm centres to all edges, with a fixing no more than 150mm from any corner and they must penetrate the supporting structure to a depth of 50mm. The fixings must be positioned to avoid exposure during fire conditions, which may necessitate a twin line of fixings. Packers must be inserted at the fixing locations.