Door Upgrades

Promat SUPALUX® and MASTERBOARD® boards provide a quick and economical method of upgrading existing latched single leaf, single acting panelled timber doors to achieve 30 minutes fire integrity – FD30.

For use, for example, where required by alterations to a building, change of use, or under certification requirements of the Fire Precautions Act.

Promat products are robust, and their use eliminates the task of installing a new door and frame. They are particularly good for high quality panelled doors and it is possible to retain the original character and panelled appearance whilst achieving fire resistance.

The upgrading specifications described in this document have been fully tested or assessed by recognised independent authorities. They can be used to meet the relevant requirements of Building Regulations and the Fire Precautions Act.

In relation to the latter, upgrading can be used in hotels and boarding houses as well as conversion to multiple occupancy housing.

Supalux is a non-combustible board and Masterboard is a material of limited combustibility. Both products are equally suited to door upgrade applications.

DESIGN

Sealing the Leaf/ Frame Gap

To enable a doorset to achieve its required performance, an intumescent seal must be fitted across the head and down both jambs. The seals may be fitted either centrally in the leaf edge or centrally in the frame reveal opposite the leaf edge.

Where the leaf is being removed for upgrading work, it may be easier to fit the intumescent seal into the leaf edges.

An intumescent seal will activate to fill the gap between the leaf edge and the frame when fire breaks out. Intumescent seals alone are not designed to offer any resistance to cold smoke but, when activated, are effective barriers to hot smoke, flames and hot gases.

Smoke control can be achieved by the use of a proprietary smoke seal brush or blade, fitted into the leaf edges, or with combined intumescent/smoke seals that have been tested in accordance with BS 476: Section 31.1: 1983.

FRAME CONSTRUCTION

This upgrade does not apply to door leaves fitted into metal frames.

The door leaves should be hung in a doorframe of minimum dimensions 70mm x 32mm. The leaf to frame gaps must be controlled to a maximum of 4mm. Similarly, the threshold gap should be controlled to a maximum of 10mm.

The doorframe to structural opening gap must be suitably firestopped, and the doorset securely fastened to the surround.

It is not necessary for doorstops to be machined from the solid, a pinned and glued or screwed and glued stop is equally satisfactory. Doorstops must be a minimum 12mm deep. The density of timber used for constructing the leaf and the doorframe must be in excess of 480kg/m^3, and may be softwood or hardwood.

Existing door hardware cannot be assumed to be suitable for use on a fire resisting door, or assumed to be sufficiently well fitted.

Leaves must be hung on *three* brass or steel butt hinges of blade sizes as follows:

- 100mm high x 32mm to 35mm x 3mm thick blade for 44mm thick leaves.
- 100mm high x 25mm to 30mm x 3mm thick blade for 38mm to 43mm thick leaves.

The full width of the hinge blade must be fitted within the leaf edge/frame reveal.

The doorset must be fitted with a type of face-fixed automatic closing device and a latch/lock assembly, that have demonstrated their capability of maintaining integrity for the required period in similar doorset designs, when tested to the current standard. Concealed overhead closures are not suitable unless specifically proven by test.

Care of the Door Leaf

Gaps greater than 2mm between the stiles, rails and muntins must be filled over with an intumescent mastic. The top and bottom mortise and tenon junctions must be additionally fixed with a 10mm softwood dowel, glued into position with a urea formaldehyde adhesive.

AUTHORITY: CHILTERN INTERNATIONAL FIRE ASSESSMENT REPORT NUMBER: FEA/F98048

METHOD 1: (Fire from Either Side)

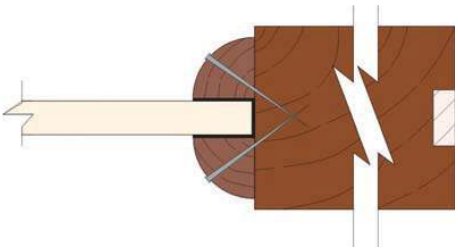
ORIGINAL DOOR:
Timber panelled door, with minimum 40mm thick leaf.

Maximum leaf size
2000mm x 815mm.

PANELS:
12mm SUPALUX® or 12mm MASTERBOARD® (faced with or without 0.7mm veneers to both faces, bonded with PVA adhesive), set in Promaseal Intumescent Sealant and held in place with 11mm hardwood quadrant beads skew nailed with 32mm steel pins at 200mm centres.

INTUMESCENT STRIP:
15mm x 4mm PVC encased Palusol 100 strip to both vertical edges and top of the door.

DOOR STOP:
Minimum 12mm deep



METHOD 2: (Fire from Either Side)

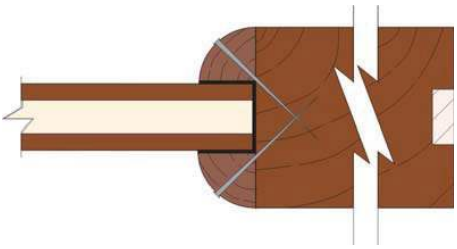
ORIGINAL DOOR:
Timber panelled door, with minimum 40mm thick.

Maximum leaf size
2000mm x 815mm.

PANELS:
9mm SUPALUX® or 9mm MASTERBOARD® with 4mm plywood facings or softwood raised and fielded panels (minimum 4mm at the fielding), set in Promaseal Intumescent Sealant and held in place with 11mm hardwood quadrant beads skew nailed with 32mm steel pins at 200mm centres.

INTUMESCENT STRIP:
15mm x 4mm PVC encased Palusol 100 strip to both vertical edges and top of the door.

DOOR STOP:
Minimum 12mm deep



METHOD 3: (Fire from One Side Only – Promat panel on Unexposed Face)

ORIGINAL DOOR:
Timber panelled door, with minimum 40mm thick leaf and minimum 6mm thick panels.

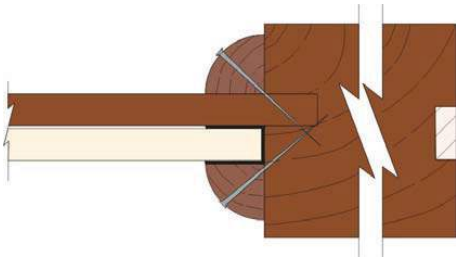
Maximum leaf size
2000mm x 815mm

PANELS:
9mm SUPALUX® or 9mm MASTERBOARD® (veneer not permitted), set in Promaseal Intumescent Sealant and held in place with 11mm hardwood quadrant beads skew nailed with 32mm steel pins at 200mm centres.

(If the door leaf is a minimum 44mm thick, the 9mm SUPALUX® or 9mm MASTERBOARD® may be faced with 0.7mm veneer on both faces using a PVA adhesive)

INTUMESCENT STRIP:
15mm x 4mm PVC encased Palusol 100 strip to both vertical edges and top of the door.

DOOR STOP:
Minimum 12mm deep



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METHOD 4: (Fire from One Side Only - Promat Panel on Exposed Face)

ORIGINAL DOOR:
Timber panelled door, with minimum 44mm thick leaf, and minimum 6mm thick panels.

Maximum leaf size
1981mm x 762mm.

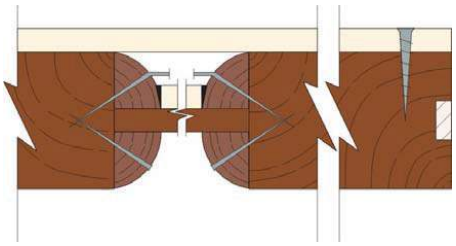
INFILL PANELS:
6mm SUPALUX® or 6mm MASTERBOARD® retained between the 11mm hardwood quadrant beads with 32mm long steel pins at 200mm centres with the top 10mm bent back over the face of the board. Sealed to bead edges with Promat intumescent mastic.

FACING PANELS:
6mm SUPALUX® or 6mm MASTERBOARD® fixed with 32mm x No. 8 steel screws around the perimeter of the leaf and across the mid-rail only at 150mm centres.

INTUMESCENT STRIP:
15mm x 4mm PVC encased Palusol 100 strip to both vertical edges and top of the door.

DOOR STOP:
12mm deep.

NOTE: This upgrade may be applied *in-situ*, and does not require the door stop to be repositioned, or the door re-hung.



METHOD 5: (Fire from Either Side}

ORIGINAL DOOR:
Timber panelled door, with minimum 44mm thick leaf, and minimum 6mm thick panels.

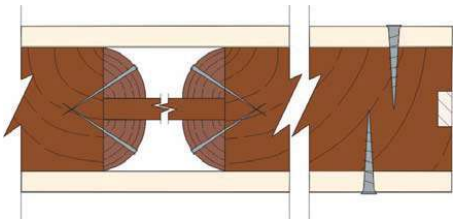
Maximum leaf size
1981mm x 762mm.

FACING PANELS:
6mm SUPALUX® or 6mm MASTERBOARD® fixed with 32mm x No. 8 steel screws around the perimeter of the leaf and across the mid-rail only at 150mm centres.

INTUMESCENT STRIP:
15mm x 4mm PVC encased Palusol 100 strip to both vertical edges and top of the door.

DOOR STOP:
12mm deep.

NOTE: This upgrade may be applied *in-situ*, and does not require the door stop to be repositioned, or the door re-hung.



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