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Sealmaster®

FireFace

Membranes for Upgrading the Fire Resistance of Period Timber Doors - Reversibly

MILLENNIUM PRODUCTS

Specified by English Heritage. Selected as a Millennium Product by the Design Council.
Featured in RIBA Journal. Exhibited abroad as one of the UK's top 120 products by the British Council.

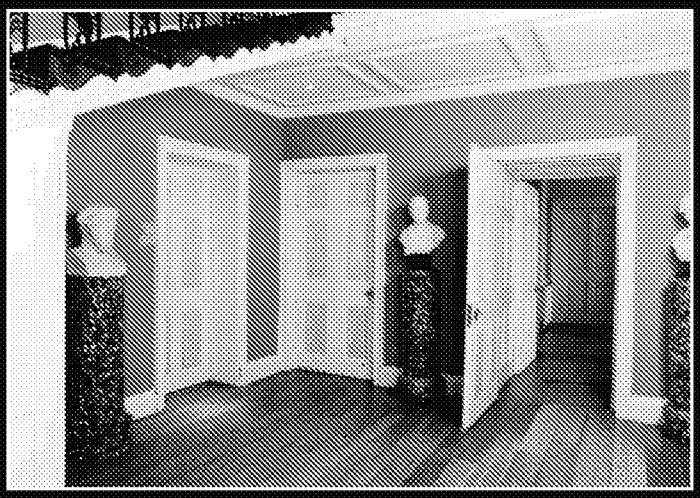
Introduction

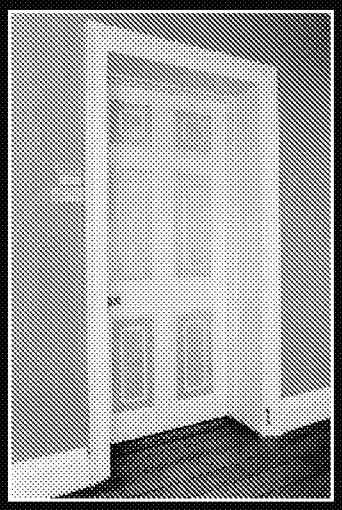
Fire spreads more rapidly through period and historical buildings than most others. The widespread use of timber flooring, panelling or laths and other combustible materials such as horse hair and straw explains part of the reason why. The ability of period doors to slow the spread of fire can make a critical difference.

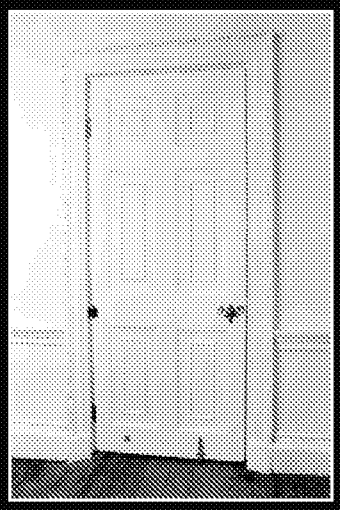
Traditionally, door panels were constructed of wide sheets of solid timber between 6mm and 15mm thick. Often the panels were jointed and those which were glued typically used an animal glue (which loosens under heat). These doors tend to fissure in the first few minutes of a fire allowing it to break through.

Upgrading doors' fire resistance to 30 minutes gives vital extra time for people to escape the building and for the emergency services to arrive. It also reduces the potential for damage by fire, smoke (and water). The challenge has been how to achieve this without replacing doorsets or 'fletching' (splitting door leafs sectionally, sandwiching incombustible boards within and reassembling them - a costly and highly intrusive method. Sealmaster's new FireFace membranes offer the first non-intrusive, undetectable and fully reversible solution.

FireFace membranes were developed by Sealmaster for English Heritage following a review of fire safety in the wake of the Windsor Castle blaze.







(Above) FireFace being applied to panelled doors in Kenwood House, Hampstead, London.

Objective Opinion

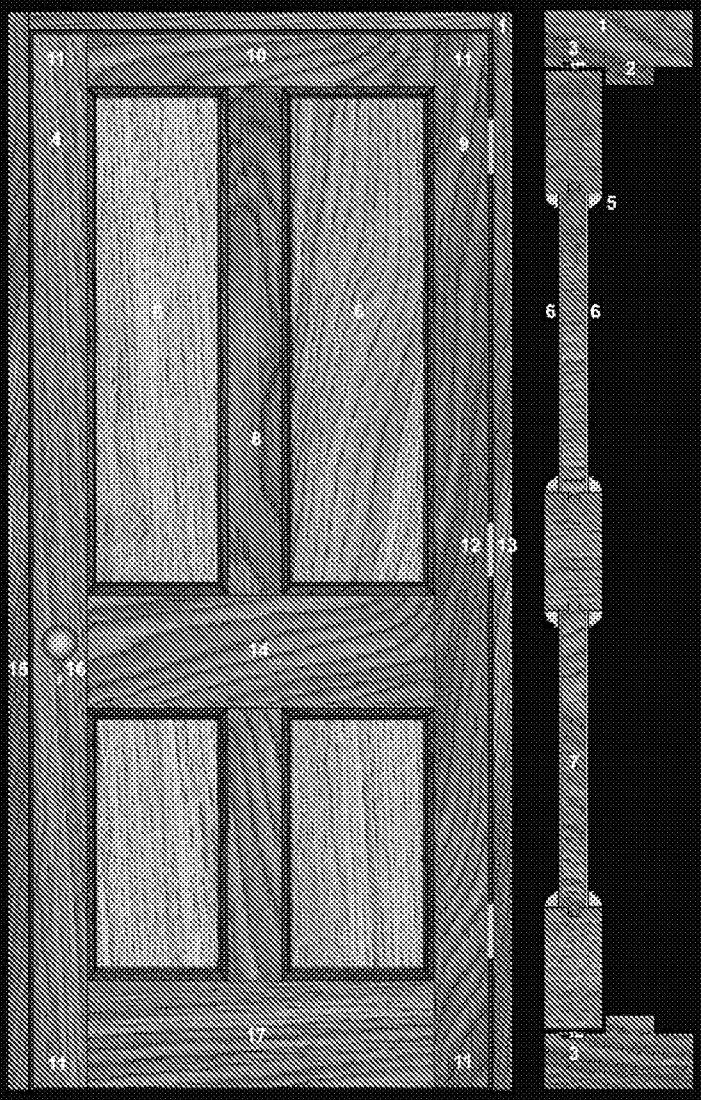
Today, FireFace is specified by English Heritage, Heritage Scotland and other leading authorities. It has been featured in a RIBA Journal article and described by House & Garden magazine as a 'Brilliant British Brainwave'.

In 1999, the Design Council selected FireFace membranes as Millennium Products and exhibited them on the Spiral of Innovation during 2000 in London. FireFace was chosen by the Conran Design Group as one of the UK's top 120 products and exhibited by the British Council on a year long tour of foreign capitals. FireFace has also been covered in other publications such as the Design Council's book Here's to the best of British and the Sharing Innovation Network's online databank.

No other product even comes close.

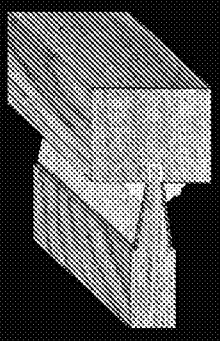
(Below) The Spiral of Innovation, featuring FireFace among some of the 1,012 Millennium Products selected by the Design Council.



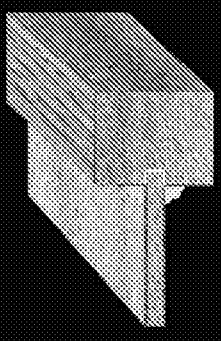


Key

1 Door frame
2 Door stop
3 Intumescent fire & smoke seal
4 Closing stile
5 Moulding
6 FireFace intumescent membrane
7 Door panel
8 Muntin
9 Hanging stile
10 Top rail
11 Hidden screw reinforcement
12 Hinge
13 Intumescent hinge protection
14 Middle rail
15 Intumescent latch protection
16 Intumescent lock protection
17 Bottom rail



FireFace on raised / fielded panels



FireFace on flat panels

Evaluating Doors

The extent to which a period door requires additional protection to achieve a 30 minute fire rating depends on a number of factors, such as the components' dimensions, the density and 'char rate' of the timber. Some may require little or no surface protection whereas others may not be suitable to upgrade because the panels are too thin (eg less than 6mm in some softwoods) or the rails etc. may be too small to prevent failure through distortion and warping under heat.

Since fire follows the path of least resistance, other weak points should also be protected - particularly the frame to leaf gaps, glued joints, ironmongery and glazed apertures. Care should also be taken to ensure that any voids around the doorset are adequately protected.For example, between the door frame and adjoining masonry, below or between floorboards etc. Sealmaster has developed a comprehensive range of products for these applications, designed with fire safety, conservation, economic and aesthetic priorities equally in mind.

The range of Sealmaster products, including FireFace, is backed up with free technical advice professional site surveys, exhaustive test data and state-of-the-art testing facilities. For further details, please contact Technical Support.

Tel. (01223) 832851, Fax (01223) 837215
tech@sealmaster.co.uk

What is FireFace?

FireFace is a thin membrane which is adhered to both sides of thinner or jointed timber door panels and to timber wall panelling to provide up to 30 minutes' fire resistance. FireFace can later be removed without damaging the fabric of the timberwork.

The FireFace membrane contain a thin layer of reinforced intumescent material, developed by Sealmaster for this application. During a fire, the intumescent compound swells and chars, insulating the surface of the timber beneath and retarding the effects of heat on the door's integrity. Between the intumescent layer and the timberwork, a specialised woven layer ensures that even if the panel fissures under intense heat, the risk of 'flaming' is avoided. (Flaming takes place when hot gases escape through a panel and combust on the unexposed face.)

FireFace Options

The latest version of FireFace, FireFace Plus is a mere 1.8mm and offers a woodgrain surface which can be decorated, stained or veneered for a seamless match with surrounding timberwork.

Performance

Sealmaster FireFace membranes conform to the strict conventions of the ICOMOS Vienna and Burra Charters. They have passed exhaustive tests carried out in accordance with BS 476 on new and old panelled doors. FireFace has proven a reliable solution when applied to painted surfaces and to softwood panels as thin as 6mm including those with a central unglued joint.

For details of tests carried out in-house, independently by Warrington Fire Research Centre and by International Fire Consultants, please contact Technical Support.

Fitting FireFace

FireFace Plus is easily applied without damaging the fabric of the door. It can be fixed beneath or between beads and mouldings. A solvent based contact adhesive is available.

Small gaps and joins are made good with Sealmaster Masterseal - a gun-applied intumescent compound which can be sanded and decorated. FireFace Plus can be decorated with emulsion or oil-based paints to match in. FireFace Plus can also be stained or veneered.

	FireFace Plus
Fire rating (minutes)	30
Non-Invasive & reversible	Yes
Overall thickness (mm)	1.8
Surface texture	woodgrain
Suitable for painting	Yes
Suitable for staining	Yes
Suitable for veneering	Yes
Tear-resistant reinforcement	Yes
Fixed between or below beads	Yes

Leading Specifiers' Choice

FireFace membranes protect many of the most important ancient and historical buildings in the UK and elsewhere. Amongst those we are at liberty to mention are:

Stormont Castle. Hampton Court Palace. Somerset House. Trinity College, Cambridge. Tower of London. Kenwood House.



Sealmaster Seminars

Sealmaster runs a programme of seminars and fire safety days, designed to bring specifiers, fire officers and other construction professionals up to date with the latest advances in the field (without charge). We are the only manufacturer in our field to be accredited by the RIBA for Continuing Professional Development. Contact us for details.

Sealmaster

Brewery Road, Pampisford, Cambridge CB22 3HG, England.

Tel. 01223 832851 Fax. 01223 837215

sales@sealmaster.co.uk
tech@sealmaster.co.uk
seminars@sealmaster.co.uk
www.sealmaster.co.uk