

Door Protection



SEALMASTER FIREFACE

Upgrading doors - "The first non-intrusive, undetectable and fully reversible solution"

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 leaves 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.

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.

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.



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

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

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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.

Both types of 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

FireFace is available in 2 types. FireFace Plus is the thinnest at a mere 1.8mm and offers a woodgrain surface which can be decorated, stained or veneered for a seamless match with surrounding timberwork. FireFace Standard offers a flat felt finish and is suitable for areas where aesthetic considerations are not such a high priority.

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.

FITTING FIREFACE

FireFace 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.

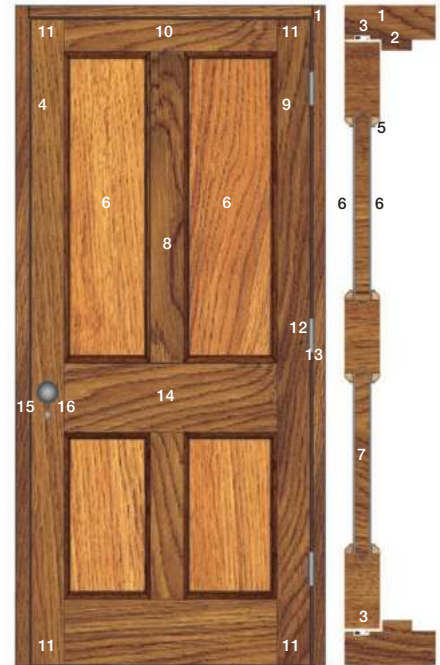
Both types of FireFace can be decorated with emulsion or oil-based paints to match in. FireFace Plus can also be stained or veneered.

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.

FireFace Specification		
	FireFace Standard	FireFace Plus
Fire rating (minutes)	30	30
Non-Invasive & reversible	Yes	Yes
Overall thickness (mm)	2.0	1.8
Surface texture	flat felt	woodgrain
Suitable for painting	Yes	Yes
Suitable for staining	No	Yes
Suitable for veneering	No	Yes
Tear-resistant reinforcement	Yes	Yes
Fixed between or below beads	Yes	Yes



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