MANN McGOWAN
INSTALLATIONS LTD

INTRODUCTION

This document has been prepared to provide some basic guidance in respect of upgrading doors to achieve a level of fire and smoke performance.

The guidance is given on the basis of Mann McGowan's 30 years experience of undertaking and witnessing fire resistance tests and using suitable materials that have demonstrated their suitability to withstand fire.

The following list given below should be considered before undertaking work on any door. This list is not exhaustive but should help architects and designers begin to understand the issues relating to this complex subject.

- Will the controlling authority allow an up-grading solution? (BCO/FCO)
- Fire resistance period? (i.e. 30 minutes)
- To what standard is it expected to perform? (BS 476 Part 22)
- Smoke resistance (as defined by BS476 Part 31/1)
- Is upgrade more cost effective than replacement?
- Can timber species be identified?
- Are there gaps/holes in the door?
- Are the joints still tight? How bonded?(ie animal glues are thermoplastic – soften in fire)
- What is the door-leaf to frame gap dimension?
- Is the frame in acceptable condition?
- Can the frame to structure gap be adequately fire sealed?
- Is ironmongery acceptable? (Closing devices, hinges, latches)
- Butt joints in panels
- Thickness door leaf
- Straightness of door leaf
- Glazed apertures and beading material/dimensions

OPTIONS AVAILABLE

Mann McGowan Installations can offer a number of solutions which will depend upon whether the appearance of the door is critical

Pyroplaque

Pyroplaque face applied membrane is nominally 2mm thick and has wood-grain surface. This can be painted, veneered or have a stain applied.

Pyroplaque is manufactured from a thin intumescent sheet material which in the event of a fire expands forming a char. This char insulates the timber from the full effects of the fire. By careful application of this material to many existing doors and the correct installation of other products, doors can be upgrading on site to provide fire resistance periods in excess of 30 minutes and smoke resistance as defined by BS 476 Part 31/1.

Performance

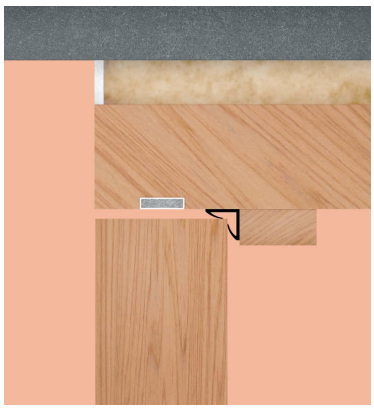
Pyroplaque has been rigorously tested when affixed to a variety of timber panels on half-height and full height door assemblies and exposed to the fire conditions as prescribed in BS 476 Part 22. Panel materials include 6mm softwood and 12mm plywood.
A field of application-assessment report covering these constructions is contained in an independent report from International Fire Consultants-reference PAR/9638/01 covering 30 minutes applications on a variety of panel thicknesses.

Installation

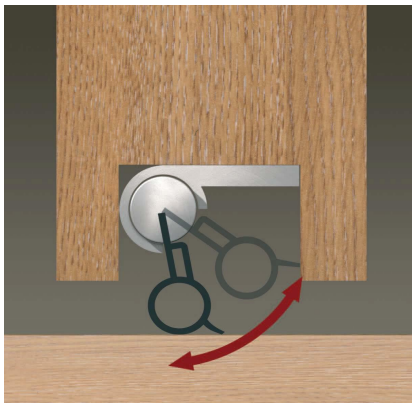
Pyroplaque is fitted to both sides of timber door panels. It can be used on both flat or raised and fielded panels. Pyroplaque is bonded using a adhesive and accelerator mix ensuring that the membrane adheres correctly to the panels. The edge of the Pyroplaque is fire sealed to the panel using Pyromas A intumescent sealant.

Door Edge Sealing

A variety of seals from our Pyrostrip ® and Enviroseal® ranges are used to provide fire, cold smoke and acoustic sealing properties. For specific applications please contact our Technical Department.
Some options are shown below



Pyrostrip ® Intumescent/Enviroseal ® ACS



Enviroseal® DD1 Sweep Threshold

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Pyrostrip® 210 Intumescent Sheet

The material can be used when splitting existing panels to form a sandwich construction which is then reassembled into the door stiles and rails.
This offers advantages such as

- Preserves original appearance of the door
- The building retains its historic fabric

Performance

In fire research tests undertaken on behalf of English Heritage a 20mm thick panel (9mm-2mm Pyrostrip®-9mm) achieved 30 minutes fire resistance.

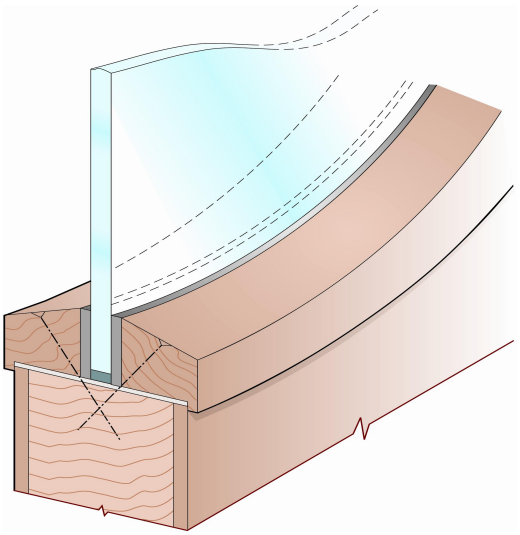
In addition we have conducted our own fire resistance tests utilising the principles of BS 476 Part 2-23 and achieved 30 minutes integrity and insulation on panels 360mm x 405mm. The make up of the panels were 6mm-2mm Pyrostrip®-6mm)

Chiltern International Fire Reports IF97036a and FEA/F98061 refer.

Installation

If the appearance of the door has to preserves then it has to be carefully removed form its hinges and de-assembled making sure the panels, stiles, rails and muttins are not damaged.
The panels need to be carefully split in half and the Pyrostrip® 210 sandwiched between the two substrates using a thermosetting adhesive. When re-assembling the door Pyrostrip® 300 intumescent seals must be used as a bedding material between the edge of the panel and the rails etc.

Glazing



As part of the up-grading service our range of Pyroglaze® seals can be used in conjunction with a variety of fire resisting glasses to provide vision panels in certain types of doors. For further details consult our technical services department.

Site Services and Installation

Mann McGowan Installations will undertake an initial site survey, produce recommendations and quote to undertake all the work required. Our trained operatives are carefully selected to ensure the minimum of disruption is caused to clients

We offer a certified CPD presentation on the subject of up-grading doors. Please contact Debbie@mannmcgowan.co.uk for further details.

Pyrostrip®, Pyroglaze® and Enviroseal® door edge and glazing seals are Certifire 3rd party accredited. This scheme-which forms part of the British Woodwork Federation Fire Door Scheme- is administered and run by Warrington Fire Research.

Technical Services

Services to architects and specifiers include CPD technical seminars, specification writing, technical support, site visits and surveys.

Mann McGowan®

The Mann McGowan Group started life back in mid 1970's and was the first company in the world to encapsulate intumescent within a PVC sleeve. This has since become the industry norm. Today the company exports to many parts of the globe with nearly half of its production finding its way overseas.

In 2000 Mann McGowan Installations commenced trading and has undertaken the installation of passive fire protection products throughout the UK and The Channel Islands.

Glass and Glazing Federation

Mann McGowan is an active member of the Fire Resisting Glazing Group within the GGF.

advancing architectural ironmongery

We are Associate members of the GAI and currently a number of our staff are undertaking the Guild's 3 year diploma course.

MANN McGOWAN
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