INTUMESCENT UPGRADING SYSTEM FOR USE ON EXISTING PANELLED DOORS

Product 38 Data Sheet

FIRE PROTECTION UPGRADES FOR EXISTING PANELLED DOORS
MAINTAINS THE ORIGINAL CHARACTER OF THE DOOR
MAINTENANCE-FREE FOR YEARS OF TROUBLE-FREE PROTECTION
**Identification and Description**

**Introduction**

The United Kingdom and Ireland are undoubtedly famous for their wealth of architectural heritage. The national value of these buildings has caused many to be graded, resulting in refurbishment work to be carried out within strict guidelines. One of the main challenges in the maintenance and refurbishment of these buildings is implementing current fire legislation whilst maintaining the natural features. Environmental Seals Limited have designed a whole range of fire protection products for heritage property including its intumescent sheet system for upgrading flat panelled doors.

The system offers four choices of product:

1. An intumescent material and fire rated card composite 0.7mm thick that can be painted over with proprietary paint (applied to the panels) and an intumescent coating system for the beads.
2. Intumescent material and veneer composite 0.8mm thick (applied to the panels) for doors that require a wood finish (any veneer type is available)
3. The intumescent material alone for composite construction when new panels or door units are required.
4. Intumescent material and ply composite (applied to the panels) for doors that require a wood or ply finish.

**Advantages**

- Maintains the original character of the door
- Identification labels are supplied for the Building Control Officer to show that the door has been upgraded
- HW coating range can be applied over existing paint or varnish (no stripping required)
- The veneer system can be adhered to the treated panel, maintaining the original natural feature of the door
- Maintenance free
- Economical
- Identification labels are supplied for the Building Control Officer to show that the door has been upgraded

**Requirements**

**Standards and Approvals**

Envirograf® products are tested employing the general principles and criteria of BS476 Part 22 (1987) in UKAS-approved centres.

**Compatibility**

The intumescent paper is compatible with general building materials, and is non toxic. It is important to use the Envirograf® Product 46 (IA) intumescent adhesive – no other adhesive is compatible. Envirograf® Product 42 (HW Primer, HW01, HW02, HW03, and HW04) must only be used on wood and related products, according to finish required.

**Health and Safety**

Intumescent paper and the HW coating range pose no known hazard to health.

**Energy Retention**

Envirograf® products offer a degree of insulation to the door sets.

**Technical Description**

**Composition**

The paper comprises man-made materials and exfoliated graphite, giving excellent intumescent and insulation qualities. The paper must be adhered to the panels using Envirograf® Product 46 (IA) intumescent adhesive. Do not strip off the existing paint or varnish. Rub the panels with coarse glasspaper to give a key for the adhesive. Do ensure that you get into all edges and corners. The white protective card (which, in itself, gives Class 1 & 0 classification) can be painted over, and protects the intumescent material from kicks, knocks, etc – it is extremely strong. Veneer and ply-faced sheets, once adhered with Envirograf® Product 46 (IA) intumescent adhesive to the panels of the door, can be stained and varnished with Envirograf® products or any proprietary products. The intumescent paper, card, veneer and ply are not affected by moisture, especially when adhered to the door panels.

**HW Coatings**

The HW coating system comprises HW primer and intumescent coatings HW01 white or HW02 clear, HW03 Clear and HW04 White are top sealer coats.

**Moisture**

The intumescent paper is unaffected by normal atmospheric conditions and will adhere to most substrates. The HW range is hygroscopic and must be applied in dry conditions and must remain dry during the drying period. The moisture content of the door should be below 15%. Doors which have been exposed to high level of moisture, such as those in buildings unoccupied for a long time, must be allowed to dry out to reduce the risk of panels splitting. This is best achieved by heating the building whilst other restoration work is being carried out and placing the upgrading of doors to the latter part of the works schedule. Pre-stripped doors must be thoroughly rinsed before application.

**Environmental/Biological**

Envirograf® products are resistant to fungi, insect attack, bacterial action and are not susceptible to rodents and other vermin. They contain no CFCs or HCFCs.

**Thermal**

The intumescent paper mentioned in this data sheet is unaffected by normal variations of temperature, cold, heat or frost. The HW coating when completely dry is also unaffected by normal variations of temperature.

**Product Options**

<table>
<thead>
<tr>
<th>PRODUCT OPTIONS</th>
<th>ES/MP/V 0.7mm thick</th>
<th>ES/MP/FC 0.7mm thick</th>
<th>ES/MP/PLY 1.8mm thick</th>
<th>ES/MP*** 1mm thick</th>
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<td>30/50 min</td>
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<td>Varnished</td>
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</tr>
</tbody>
</table>

***for door construction

Other test data exceeds 30 minutes. For further details, contact our sales / technical department using the contact details on the cover page.
DOOR PREPARATION & SPECIAL NOTES

1. Scrape off all loose paint (not applicable for stained or polished doors).

2. Thoroughly rub down the door panels (including corners and edges) with coarse glass paper, providing a good key for the adhesive.

3. Thoroughly clean the panels, rails, and stiles of the door.

UPGRADING SYSTEM 1

It is only necessary to treat the risk side if a room door (such as a bedroom or lounge door) opens onto a corridor. If the door is positioned in a corridor or on a staircase, then both sides need to be treated.

For preparation, see COMPOSITION on the previous page.

METHOD A

This method is for doors with rails and stiles 31-34mm, with a minimum 6mm panel thickness. Paint the beads, rails, and stiles with Envirograf® Product 42 (HW Range), using two coats of either HW01 intumescent paint or HW02 intumescent varnish at a coverage rate of 8m² per litre plus one coat of either HW03 or HW04 protective top coat. HWAP primer must be applied first if the door has been previously varnished. Then, using Envirograf® Product 46 (intumescent adhesive), fix the Envirograf® Product 38 paper with card, plywood, or veneer to the face of the panels between the beads.

METHOD B

This method is for doors with stiles and rails 35mm and above. Upgrade only the beads using the HW system, then adhere the Envirograf® Product 38 paper as shown. Envirograf® HW coatings are then applied as follows:—

For varnished doors, apply HWAP primer over existing varnish. Then apply two coats of HW02 matt varnish at 8m² per litre per coat, followed by one coat of HW03 (matt, semi-gloss, or gloss) at 10m² per litre.

For painted doors, apply two coats of HW01 at 8m² per litre per coat. Then apply one coat of HW04 undercoat at 8m² per litre, followed by one coat of HW04 top coat at 8² per litre.

PLEASE NOTE THAT PRIMER IS NOT NORMALLY REQUIRED WITH HW01 COATING

UPGRADING SYSTEM 2

Doors with rails and stile minimum thickness 40mm - 50mm. Panels of minimum thickness 12mm, comprising two 6mm panels with 1mm thick Envirograf® paper sandwiched between the panels and fitted into a groove.

The panels comprise two 6mm thick plywood panels with the Envirograf® paper sandwiched between. These must be glued together with Envirograf® Product 46 (IA) intumescent adhesive.

Paper, plywood, or timber should be rebated into the stiles, rails, and muntins by 15mm depth, using Envirograf® Product 46 (IA) intumescent adhesive.

DOOR PREPARATION FOR DOOR MANUFACTURERS: PAPER SANDWICHED IN COMPOSITE PANELS

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SPECIAL NOTES ON COATINGS:

Previously-coated doors do not need to be stripped, provided that the varnish or paint is in good order. Follow normal preparation as shown in adjacent illustrations. HW Adhesion Primer should then be applied before the other HW coatings. If the door is new or stripped wood, then HW Adhesion Primer is not required.

NB: All knots must be appropriately treated before the application of Envirograf® products.

PLEASE NOTE:

If the coating system is to be applied to existing varnish, one coat of HWAP primer must be applied before HW02. The paper and board does not require HW coating. If veneer or ply is adhered to the panels to finish, coat the veneer with one coat of HW03. HWAP primer is not normally required with HW01 intumescent and it is not supplied in our DK1 door kit. In cases where the surface is greasy, oily, or exceptionally dirty, then it is advisable to use the HWAP primer. If you need the DK1 door kit, please mention this when ordering.

PLEASE NOTE:

If the coating system is to be applied to existing varnish, one coat of HWAP primer must be applied before HW02. The paper and board does not require HW coating. If veneer or ply is adhered to the panels to finish, coat the veneer with one coat of HW03. HWAP primer is not normally required with HW01 intumescent and it is not supplied in our DK1 door kit. In cases where the surface is greasy, oily, or exceptionally dirty, then it is advisable to use the HWAP primer. If you need the DK1 door kit, please mention this when ordering.

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The paper is impervious to UV light. The HW coatings are not affected by UV light over a long period of time. However, the system is unaffected when used internally.

**STRUCTURAL, MECHANICAL**

Intumescent paper is a durable material adhered to Envirograf® Fire Card (or veneer) and is suitable for areas with continuous traffic.

**PERFORMANCE**

**FIRE**

Product 38 has undergone an extensive test programme including a wide variety of both new and old panelled doors. All tests have been held at UKAS-approved test centres to the requirements of BS476. Product 38 has helped maintain the integrity of many doors including those containing softwood panels as thin as 6mm for 30 minutes and 4mm for 20 minutes. Thicker panels will achieve up to 50 minutes of fire protection.

**LABOUR**

Before application, discuss with your Regional Office to ensure that skilled labour is used for the installation of the intumescent paper and HW system. It is important that the installers are fully aware, and have full understanding of the manufacturer’s instructions, which must be followed.

**LIMITATIONS TO FIRE PERFORMANCE**

Product 38 is an intumescent paper, designed to improve the fire resistance of timber door leaves which include thinner panels. In order to ensure that the fire resistance of the doorset as a whole is adequate, it is essential that steps are taken to check that the appropriate door-frames and fixings, door-stops, intumescent strips and door furniture are used.

**MAINTENANCE/REPAIR/REPLACEMENT/DISPOSAL**

The paper, once installed, should be maintenance free. If, for what ever purpose the paper is removed or damaged it is advisable to replace.

**DEMOLITION**

In the eventual demolition of a building, any Envirograf® products can be simply disposed of – no special conditions of disposal are necessary.

**SUPPLY**

Standard sizes are delivered from stock, and special sizes can be made to order.

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**SIZES AND ORDERING REFERENCES**

**PRODUCT 38 – MEMBRANE PAPER**

ES/MP: Paper only - for use for door manufacturers with composite panels.

ES/MP/FC: Paper with protective fire card for on-site upgrading. The 1mm intumescent paper is supplied adhered to two grades of fire card:

320g/m² for veneering over.

700g/m² for painting over.

ES/MP/V: Paper can be supplied with pre-applied veneer in 1200x1200mm sheets (other sizes are available).

ES/MP/Ply: Paper can be supplied with pre-applied birch ply in 1500mm x 1500mm sheets (other sizes are available).

ES/MP/GP: Gaboon ply facing 1200 by 1200mm, 1200 by 2400mm

**PRODUCT 69**

Envirograf® surface-mounted seals are fitted onto the frame and provide hinge protection.

**PRODUCT 71**

All rebated locks, hinges and door closures must be fully protected to comply with BS476 Part 22 (1987). The intumescent paper is laid behind the hinges and around locks whilst being installed. (Important: do not use mastic or putty).

**PRODUCT 100**

Seals can be fitted into

- the door edge

- the frame

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**PRODUCT 100**

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- the frame

**IMPAKT NOTE**

Intumescent seals must

- not be fitted to the door stops. In a fire they will

- push the door open.

**DOOR STOPS**

For fire doors with up to

- 60 minutes rating, stops can be

- 12mm or less and only need to be pinned or

- screwed - not glued.