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### **To Upgrade or Not Upgrade– That is the Question Part 1 Panelled Doors**

In the austere times in which we find ourselves, a make and mend mentality has certainly crept back into our everyday lives.

Of course this concept is not new to owners of old properties, as our rich heritage of buildings is something the UK can be proud of. However the need to retain the character of a building against its function or use can often be in conflict.

This is certainly true when fire protection has to be considered – particularly if the Regulatory Reform Order (Fire Safety) legislation is to be complied with.

Occupant's safety and the need to escape from a burning building should fire occur, is a pre-requisite of the order. This means that fire compartments must contain the fire and the effects of cold smoke for a defined period of time.

Fire resisting doors are a crucial part of the passive fire protection strategy and it is important that they work when called to do so.

Existing doors that have been installed in a building for a considerable amount of time may become damaged or the components that make them work such as Intumescent seals or ironmongery, may have become worn. This is particularly true of panelled doors where overtime the panel(s) might crack.

There are a number of systems and products that have been developed to assist the building owner/occupier that can be successfully used to upgrade and repair existing panelled doors.

Before any work is undertaken, consideration should be given to a number of factors. These might include;-

Will Building Control or the Fire Service allow an upgrading solution?

What is the desired fire resistance period required?

Is upgrading/repair more cost effective than replacement?

Is cold smoke protection required?

What are the gap dimensions around the door?

Thickness of the panels

The above is only a snap-shot of what has to be considered. If doors have a glazed aperture within them, careful consideration must be given here as well.

When all the above and other issues have been considered and the decision is taken to up-grade or repair, then it would be prudent to consult a specialist producer and/or a contractor that specialises in this type of work.

There is a variety of ways panelled doors can be upgraded depending upon the needs and budget of the client.

If the building has Grade 1 or 11\* listed status then it maybe the doors will need to retain their existing appearance. This might be fine if the panels within the door are flat, made from hardwood and have a substantial thickness and no visible damage.

However, if the flat panel is relatively thin then it is likely that in the event of a fire the panel will be destroyed relatively quickly, thus allowing fire to penetrate through. To upgrade panels that preserve the original appearance, the doors will need to be disassembled and the panels will need to be split in half throughout their thickness. An Intumescent sheet such as Pyrostrip/Palusol sheet 2mm thick is then sandwiched between the 2 halves of the panel and bonded to make a 3-ply panel. The panel can then be re-assembled into the door, bedded on Pyromas Intumescent sealant.

In the case of thin panels where surface treatment would be acceptable, then an Intumescent membrane, with a plywood face such as Pyroplaque might be the answer. This 2mm thick sheet is applied using a two-part adhesive to both

sides of the panel. This membrane is available in a variety of finishes and it can be veneered or over painted if required.

Another option might be to remove the panel completely and replace it with a fire rated board material. There are a number of different products on the market, but one that has been developed recently is Palusol SW. This composite board is a pre-laminated construction and has excellent fire resisting properties. Like Pyroplaque it can be veneered or over painted.

On completion of this work, then consideration must be given to the rest of door. All fire resisting doors must be fitted with Intumescent seals around the door edges, and if cold smoke is a requirement then either a combined Intumescent/cold smoke seal such as Pyrostrip Flexifin can be used, or if preferred Pyrostrip Intumescent seals in combination with Enviroseal ACS stop seals can be fitted.

To work effectively, fire doors must close! It may well be that the ironmongery already on the door is fit for purpose- but if not, good quality ironmongery that has been CE marked should be used. A large range of door closers, hinges, latches, etc have all been successfully fire tested on doors.

Our next article will focus on glazed elements contained within fire resisting doors.