



# Sharing best practice

*Alan Oliver discusses issues around fire safety non-compliance in healthcare buildings and introduces the latest Healthcare Fire Compartment Inspection reference documents*

DAME JUDITH Hackitt's impressive May 2018 report into the causes of the Grenfell Tower fire, 'Building a Safer Future', called for radical changes in the fire safety industry. I took particular note of the following comment:

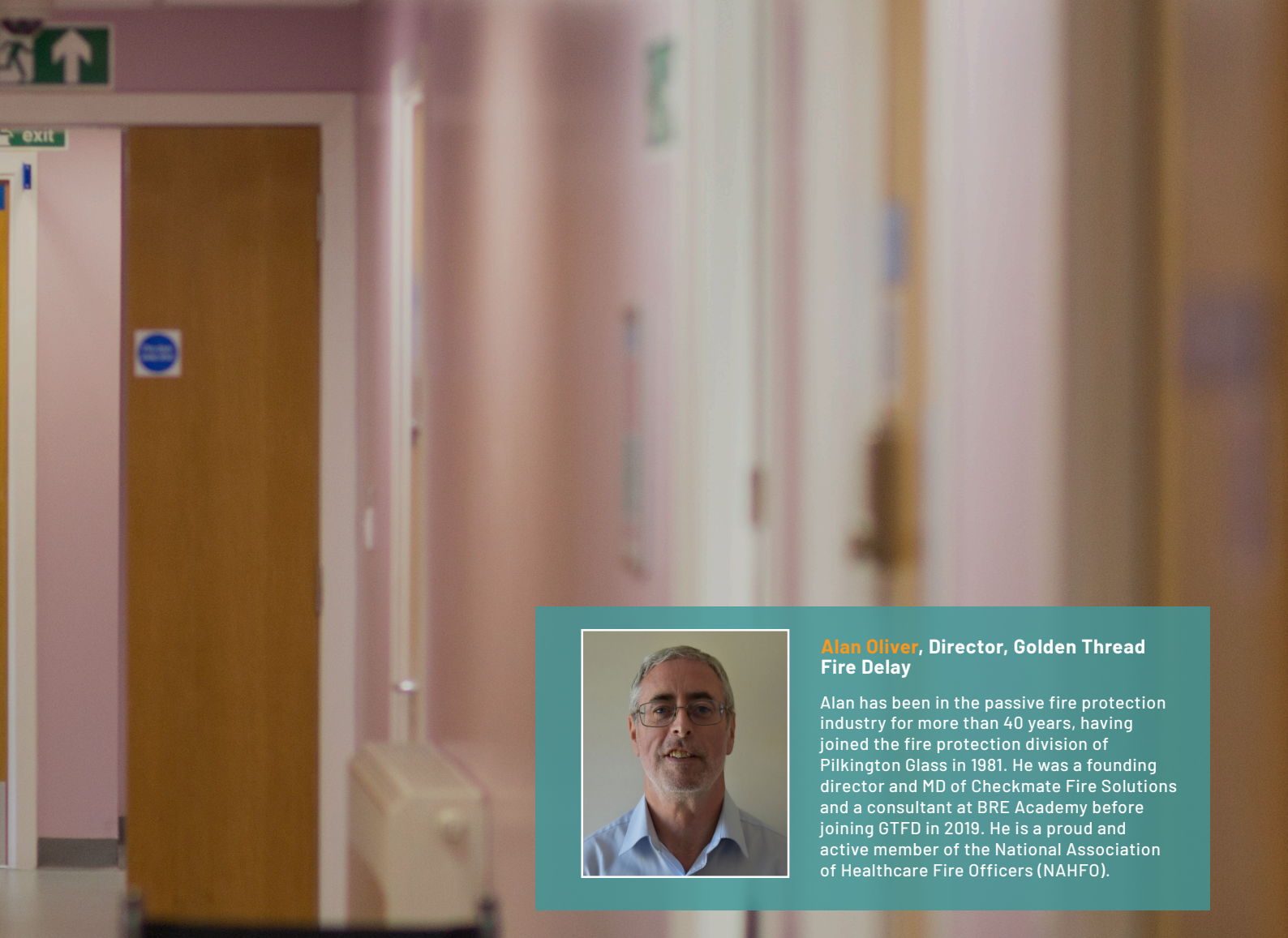
*"At the heart of this required change is a shift of ownership – those who should be the experts in best practice should not be waiting to be told what to do."*

It was probably with this in mind that at a National Association of Healthcare Fire Officers (NAHFO) London meeting later that year I asked Mike Ralph, who at the time was Principal Fire Engineer at NHS Improvement and NHS England why it was that the NHS, which is arguably the biggest owner of fire doors in Europe, doesn't have systems for inspecting them?

His answer was: *"Good question! Why don't you join NAHFO and set up a working group for writing a healthcare fire door inspection paper?"*

So that is what I did – I joined NAHFO in January 2019, quickly formed a working group of willing volunteers and embarked on writing the paper. Issue 1 was 5,298 words and had 14 pages, by the time of the 10th and final issue in August 2020 it had grown to 34 pages and contained 13,602 words.

The main reason for its development to such an extent was some marvellous peer reviewing and contributions from professionals within the fire door industry and fire safety sector, including Aviva Insurance, the Association for Specialist Fire Protection (ASFP), BRE/LPCB, London Fire Brigade, and other NAHFO members.



**Alan Oliver, Director, Golden Thread Fire Delay**

Alan has been in the passive fire protection industry for more than 40 years, having joined the fire protection division of Pilkington Glass in 1981. He was a founding director and MD of Checkmate Fire Solutions and a consultant at BRE Academy before joining GTFD in 2019. He is a proud and active member of the National Association of Healthcare Fire Officers (NAHFO).

During the review process, a number of people had suggested that it was a bit 'dry' for a wider audience to read and needed some images to make it more palatable and user friendly, so the next stage was to turn the paper into a reference document titled *Fire Door Inspections in Healthcare Buildings* – a final version was signed off in January 2021.

Further review, feedback, and suggestions led to a second edition of the document being created and printed in April 2022 and for the same reasons I am currently working on a third edition.

**Fire door inspections in healthcare buildings**

Split across four sections, the document introduces the concept of three generic types of fire door inspection and highlights the need for a golden thread of information so that doors are competently specified, procured, installed, managed, and maintained.

While the first two sections focus on inspections for new fire doors (Type 1) and existing doors (Type 2), respectively, the third section outlines ongoing planned preventative maintenance inspections for doors that have already been either Type 1 or Type 2 inspected. It covers issues such as impact damage and protection and gives guidance on frequency of inspection, based on risk, dependency, and usage. It also gives guidance on how to inspect doors that require additional expertise and consideration such as sliding doors, heritage doors, and final exit doors.

Finally, the fourth section gives guidance on creating a robust fire door management system, as the inspection of fire doors is only one aspect of fire door management.

I was very pleased that the document was peer reviewed by the National Fire Chiefs Council (NFCC), and Mark Andrews, their Lead Officer for Higher Risk Accommodation, agreed to write a Foreword.

**A legacy of non-compliance**

I passionately believe that all those responsible for fire safety in healthcare buildings need to be understanding, using, and promoting this document because fire door compliance in general continues to be extremely low. Many hospital trusts have issues with their existing doors for various reasons including:

- a legacy of Crown Immunity – up until April 1991, NHS hospitals were immune from needing to comply with fire safety legislation
- poor fire door management controls
- fragmented, complex management structures
- tight budgets.

What frustrates me, and I know others, is when brand new doors are fitted, replacing non-compliant doors, and they are themselves installed in a non-compliant state!

Pages 18-19 show examples of non-compliances in new door installations that I have inspected in hospitals in the last three to four years, therefore all installed post-Grenfell. >>>

# 1

In the first image directly below, showing the base of a double set of doors, you can see an uneven and excessive threshold gap. The door leaves are of separate shades of blue, suggesting that they were never supposed to go together as a matching pair. When we investigated how they were being stored, no QA system appeared to be in place to identify their intended location, as shown in the second image.



# 2

The first image shows a 40mm gap at the bottom of a door frame, which suggests it was either poorly measured or poorly installed. As shown in the second image, the wrong length of screws (75mm) were used to install the door frame to the surrounding structure. In this case, they should be 100mm in length.



# 3

In the image on the bottom left, the lock casing should have been sleeved with a bespoke intumescent sleeve, but it has been only partly protected by intumescent pads intended for hinges. In the image on the bottom right, the smoke seal doors in this new building should have had threshold gaps not exceeding 4mm but were all found to be excessive.





4

As shown in the image on the top left, a ventilation aperture was cut into a 60-minute door leaf. As you can see, the door core, which should have been lined, has been left exposed. In addition a 30-minute, rather than a 60-minute, intumescent insert has been used. Arguably the worst issue is that due to its location on a busy hospital street, it should have been fitted with an insert that provides smoke seal capability rather than only fire protection. The image on the top right shows doorsets opening directly onto a busy hospital corridor but are absent of vision panels that are required for safety reasons.

Seven years after the Grenfell Tower fire, there is still clearly a lot of education and improvement that still need to take place.

I always felt that writing the reference document was the easy bit – getting people to know it existed, read it, and then apply the knowledge was likely to be far harder, so in an effort to raise awareness of the document, I created a five hour CPD training module to help promote it, which I currently deliver to hospital trusts free of charge. The module not only provides guidance on how to inspect fire doors, but also basic awareness, covering issues such as the applicable legislation, how they are tested, and how the compatibility of their components is key.

I particularly like to get in front of project managers and enlighten them with this knowledge, as a large number readily admit that their fire door competence could be improved. The module includes a practical session towards the end of the day, when everyone has the opportunity to apply the inspection theory into practice by inspecting their own fire doors.

### Fire dampers, firestopping, and cavity barriers

Meanwhile, NAHFO was also aware of major and manifold non-compliance issues with other fire compartmentation elements. The two images below show barriers that have been installed without mechanical fixings – the image on the right is more obvious where it has physically dropped!

Therefore, in July 2022, a new NAHFO London working group was formed; this time to write a reference document on how to inspect fire dampers, firestopping, and cavity barriers.

This new document, *Fire Damper, Firestopping & Cavity Barriers in Healthcare Buildings* (Reference RD2), follows the first one in that it recommends and outlines Type 1 inspections for new installations, Type 2 inspections for existing installations, and Type 3 ongoing inspections for elements that have already been either Type 1 or Type 2 inspected.

As the document states: “Fire and smoke resisting dampers and firestopping in fire walls, compartments, and sub-compartments, together with cavity barriers in hidden >>>





This cavity barrier was installed in 2023. It shows:

- unsupported fire dampers
- poorly installed coated batts
- the inappropriate use of polyurethane foam.

## “Why was it that the NHS, which is arguably the biggest owner of fire doors in Europe, doesn’t have systems for inspecting them?”

voids, play a crucial role in controlling and restricting fire, heat and smoke spreading from its source uninhibited; also in achieving the required degree of containment and thereby ensuring the fire evacuation strategy of a building can be undertaken with life safety risk and disruption, including critical care, minimised.”

As with the *Fire Door Inspections* reference document (now referred to as RD1), it was extensively peer reviewed and all those who contributed have been acknowledged.

The introduction enters and casts light on the murky world of hidden voids and introduces the reader to fire dampers, firestopping, and cavity barriers.

It highlights that these elements are subject to poor practice, with guidance on how to install and inspect new installations competently and how to inspect existing elements, including how to assess their condition and if they can be repaired or require replacement.

In support of the latter, Golden Thread Fire Delay carried out a fire test at the FPA facility in Blockley, replicating the repair of fire barriers, based on the typical retrofitting of services and creation of redundant holes. We deliberately ‘mixed and matched’ a variety of products from leading firestopping product manufacturers and suppliers, to replicate a scenario where the existing materials forming the barriers are unknown. Having achieved 60 minutes of fire resistance, the test was stopped after 65 minutes.

The test provides evidence that existing barriers of an unknown source can be successfully repaired, providing that the original barrier is in a good condition, was installed to a competent standard following the manufacturer’s fire tested details, and that the subsequent repairs also adhere

to the product manufacturer’s installation details.

RD2 also offers guidance on how to maintain dampers, firestopping, and cavity barriers that have already been either Type 1 or Type 2 inspected. It includes a matrix to give guidance on the frequency of inspecting fire walls. We are aware that HTM 05-03 Part K, which recommends annual inspection, typically isn’t followed, so this matrix looks to give guidance on inspection frequency based on risk.

Work on the third edition of the original fire door inspection document is underway as people continue to be introduced to it and provide valuable feedback – for example, Steven Lyon from Pennine Trust has recently emailed me to make me aware of issues using drop down seals on doors in a mental healthcare setting. Such feedback will go into the third edition and be acknowledged.

I will also be re-writing part of Section 1 to highlight the fact that the installation of fire doors under third-party certification schemes does not in itself ensure competence and compliance.

The reality is that all of the non-compliant installations highlighted above were undertaken in recent years under UKAS third-party certification installation schemes and I believe there is a need to make people aware of this. ◀

Golden Thread Fire Delay provides a complete menu of fire door and passive fire protection services and solutions. To obtain free copies of the reference documents, you can email [info@goldenthreadfiredelay.com](mailto:info@goldenthreadfiredelay.com)