

Date 21<sup>st</sup> October 2008

Dear Sir,

The recent fire in the Channel Tunnel was a worrying echo of the fire in 1996. We have yet to see photographs of the inside of the tunnel, but tunnel fires can be particularly destructive as photographs of the concrete tunnel lining in the last fire show.

In places the 0.4m thick concrete tunnel lining was reduced by spalling in 1996 to a mean depth of 0.17m, with the thinnest area being a mere 0.02m. With no built in fire protection the tunnel is vulnerable to collapse in a severe fire.

Despite advice to build in adequate passive fire protection, the builders and tunnel owners worked on the assumption that their designs would mean there would not be a severe fire. Even after the last fire, billed as a 'once in 100 years' fire, advice to build in passive fire protection was ignored. In fact based on actual events one may argue that the likelihood of the number of fires every hundred years now stands at 30.

Most attention has been focused on the potential loss of life, but the tunnel designers have gone to considerable lengths to minimise risk to life.

However, there is a significant risk of damage to the tunnel structure in a severe fire. The consequences of a severe fire and collapse of the Channel Tunnel on the UK economy would be significant.

It is perhaps unrealistic to expect to bring the tunnel itself up to the required standard of built in fire protection. When the tunnel was first planned such protection would have cost £28 million, but now the cost and time out of action would be enormous. The cost of adding active measures such as sprinklers would also be enormous, and ineffective without built in protection. But, that does not mean we should do nothing. Since fire would most likely break out in a Heavy Goods Vehicle in the train, we could do a

much better job of protecting the train itself. Applying passive fire protection principles to the train, rather than relying on water fog fire suppression and other active measures carriages could be converted into self standing compartments, so any fire would be contained to the point of origin within the individual carriage at a relatively modest cost.

Fire will break out again at some time in the Tunnel. This is the third fire in the last 12 years. Next time the outcome could be far worse. The technology and knowledge is available. Let us build in the protection to avoid a catastrophe.

Yours sincerely

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**Editors' notes:** The Passive Fire Protection Federation (PFPF - [www.pfpf.org](http://www.pfpf.org)) is dedicated to growing awareness and giving advice on fire protection, and the Regulatory Reform (Fire Safety) Order 2005 (RRO). The Federation brings together the collective expertise of the passive fire protection industry and provides a central forum so that the Industry speaks with one voice to articulate the benefits and value of passive fire protection in the achievement of fire safe building design and construction.

Passive fire protection is the primary measure built in to a building to provide fire safety and protection by containing flame, heat and smoke to the point of origin. It maintains building compartmentation, structural stability, fire separation and safe means of escape.

Passive fire protection measures achieve their intended purpose by raising the fire resistance of the structure, protecting the structure against the effects of fire,

reducing fire spread through secondary ignition, limiting the movement of flame and smoke, and minimising the danger of fire-induced collapse or structural distortion.

Passive fire protection design, incorporating passive fire protection materials, systems and assemblies, serves by fire containment to protect life, safeguard the building structure, protect assets, maintain building serviceability after fire, minimise rebuild costs, and facilitate quick business recovery and continuity.

Our website [www.pfpf.org](http://www.pfpf.org) carries advice on what to check and best practice in all passive fire protection measures

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