



Dear Sirs,

**The Proposed legislation in the Welsh Assembly relating to the
mandatory installation of sprinklers in residential premises in Wales**

The ASFP

The Association for Specialist Fire Protection represents manufacturers and installers of Passive Fire Protection products i.e. those products that are 'built-in' as part of the fabric of the building. These include: fire protection to structural steelwork, fire resisting ducts and dampers, fire stopping products, fire resisting walls and floors etc.

The Association welcomes the opportunity to comment on the proposed measure to make the fitting of sprinklers mandatory in all new-build premises. The position of the ASFP has always been to consider sprinklers as part of the holistic process that goes to make up an effective fire protection regime, i.e. an appropriate balance of passive and active measures including:

- Fire Detection
- Extinguisher Systems
- Sprinkler / Mist Systems
- Signage
- Structural Fire Protection
- Fire Containment
- Flame Retardancy
- Fire Safety Management

The mix of measures adopted will depend on the building configuration and usage. This bill is directed at domestic dwellings but also includes building of multiple occupancy, care homes and schools. In all such building types, passive fire protection in all its guises will play an essential part in controlling a fire **AND** enabling sprinkler systems to do their job more effectively.

Cost/benefit analyses

The association has read through the documentation supplied via the explanatory notes ms-ld8131-em-e.pdf document available from the following website:

<http://www.assemblywales.org/bus-home/bus-legislation/bus-leg-measures/business-legislation-measures-domfiresafety.htm>

Whilst the association considers sprinklers as part of the overall fire regime, we have questions with the cost/benefit analysis arguments used in this case. Several of the reports referenced in the document

supporting the measure e.g. BRE 204545 (2005) show that the cost benefit arguments for residential sprinklers are not supported other than for residential care homes, tall blocks of flats (over 11 storeys high) and some other properties that would have to be demonstrated on a case by case basis. BRE 204545 goes on to state that apart from the three types of buildings listed above:

“Residential sprinklers are not cost effective for other dwellings”

CLG report Fire Research Series 1/2010 considers the installation of sprinklers in a large number of new homes to be developed in the Thames Gateway area. It states:

“The findings from our modeling are consistent with previous studies in suggesting that the benefits of installing sprinklers in *all new* housing, in terms of reduced fatalities, injuries and property loss, would fall far short of the costs (for example, see sections 5.5 and 7.1). We find some limited and uncertain evidence that installing domestic sprinklers in *new social* housing could lead to similar net social benefits as providing additional FRS resources.

The limited and uncertain evidence for installing domestic sprinklers in new social housing suggests that sprinklers may be cost-effective in some cases. It may therefore be appropriate for providers of new social housing to consider sprinklers on a case-by-case basis.

However, the cost benefit evidence from this study does not support the mandatory installation of sprinklers in all housing or social housing in the Thames Gateway. The benefits from installing sprinklers in social housing would be reduced in particular by the current government planning policy of mixing social and private housing, as the scope for FRS savings would be reduced where both housing types share the same FRS resources.”

The explanatory note also references two North American reports (US experience with sprinklers and other automatic extinguishing equipment published by NFPA and Benefit-Cost Analysis of Residential Fire Sprinkler Systems published by NIST). These are more positive about the cost/benefit arguments for residential sprinklers. This is also taken up by a Fire Sprinkler Association (FSA) critique of the ODPM - BRE Report “*Effectiveness of sprinklers in residential premises*” (the 205545 report). However, it should be noted that both the FSA and to a lesser extent NFPA are lobbying organisations for the sprinkler industry, whereas BRE is not.

The explanatory note also states that the assumptions in the cost benefit analysis are currently being updated by BRE Global and that revised ones will be due by autumn 2010. We await these with interest.

Sprinklers vs. Smoke alarms

BRE report 204545 also highlights the benefit of smoke alarms which:

“responded in typically half the time required by sprinklers and well before the conditions had become life threatening”.

BRE report 218113 (2006) on recessed residential sprinklers makes the same point about the much more rapid response of smoke alarms than sprinklers.

CLG report Fire Research Series 1/2010 considering the installation of sprinklers in a large number of new homes to be developed in the Thames Gateway states:

“We assumed that all new housing has smoke alarms fitted, which decreases the net benefit of sprinklers”;

Finally, in evidence to Member Proposed Legislative Competence Order on Domestic Fire Safety DFS(3)-05-08(p1), Community Housing Cymru stated in April 2008:

“We think that it is important to weigh-up the merits of installing sprinklers in all new homes against a more targeted approach which seeks to install sprinklers in homes housing the most vulnerable in society, in order to meet their needs first. These might include nursing homes, sheltered housing, housing designed to meet the needs of people requiring support, Houses in Multiple Occupation, homes for people with limited mobility who might find it hard to escape from a fire quickly etc.

It may be that measures to increase the fitting of hard-wired smoke detectors in existing homes could be a more cost effective solution to reducing the number of deaths and accidents caused by fires in the home.”

ASFP position on the measure excluding ‘trade-off’

Having read the evidence referenced in the explanatory note, the ASFP remains to be convinced that the cost/benefit argument for residential sprinklers has been proven and we await the revised BRE assumptions with interest. Apart from the FSA critique, all the UK evidence cited above does not support residential sprinklers; either because the cost benefit analysis is not favourable, or it shows that smoke alarms will do a similar job (for life safety) at less cost.

Irrespective of this, the ASFP would still not oppose their introduction if they do not impinge upon the passive fire protection measures ‘built-in’ to the fabric of the building.

ASFP position on the measure including ‘trade-off’

Where the association cannot support the measure is in the use of trade-offs to bolster the argument for sprinklers. There are several references to ‘trade-offs’ between active and passive systems (8.14, 8.23, 8.41, 8.79).

8.1.4 states:

“if the automatic fire suppression system is included as part of the design, then trade-offs could be made which *“in some circumstances the savings achieved via trade-offs can result in a more cost effective design.”* Such trade-offs could for example, be the negation of a need for alternative fire protection measures.

8.23 states:

There are a number of factors that could cause the installation costs of automatic fire suppression systems to be considerably lower than the estimates above.

- It should be noted that more investigation is needed into trade-offs savings, which could reduce these costs.

8.4.1 states:

It should be noted that there may be design “trade-offs” that could considerably reduce these costs.

8.79 states:

The following summary of environmental benefits is taken from a report by the British Automatic Sprinkler Association.

“..... Sprinklers may not only provide benefits in terms of costs and life safety but also can impact on environmental issues, either by limiting the damaging effect of fire or by enabling reduced passive fire protection measures. Typical examples of this are:

- Reduction of fire doors and dampers.
- Reduction of fire resisting partitions and walls.
- Reduction of fire resisting glazing.....”

However, there is no evidence as to how much of a saving can be made by ‘swapping’ the passive fire protection measures ‘built-in’ to the fabric of the building with residential sprinklers. It is noted that 8.2.3 states that these need to be investigated.

So, if we can we remove passive fire protection measures; how much can we remove? 10%, 50 % 100%? Such sweeping anecdotal statements are unjustified both financially and morally. Such an approach has no place in fire safety – particularly when it is not costed. It’s as if one were to use the argument that the introduction of airbags in cars could justify in financial terms the removal of seat belts...

Summary

The ASFP is, in principle, not opposed to the measure to mandate the installation of residential sprinklers in new residential premises in Wales; even though we remain to be convinced by the cost/benefit arguments, or that they will provide a significant benefit over smoke alarms. However, the ASFP is totally opposed if the measure is introduced on the basis of trade-offs against passive fire protection that cannot be justified either morally or financially.

The association is willing to discuss the proposals above and to assist in any way it can. To this end we are at your disposal and look forward to hearing from you.

Yours sincerely,



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