

Petition: P-05-777 Application of the Automatic Fire Suppression Systems Legislation within the current Building Regulations for Wales

Y Pwyllgor Deisebau | 17 Hydref 2017
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Research Briefing:

Petition number: P-05-777

Petition title: **Application of the Automatic Fire Suppression Systems Legislation within the current Building Regulations for Wales**

Petition text:

We call on the National Assembly for Wales to urge the Welsh Government to review and amend the current implementation of the Fire Sprinkler Regulations, within the current Building Regulations, that came into force in January 1st 2016 (Wales).

The review to amend should specifically take into consideration how the regulation has been integrated into the current Building Regulations with regards to projects that fall within the "Material Change of Use" category (Regulation 5) and the requirement to retrofit Automatic Fire Suppression Systems. The review should primarily take into consideration what is actually achieved when 2 properties are amalgamated into 1 given that:-

- 1) Where 2 dwellings become 1 the actual building process should be deemed no different from what would be considered as an Extension to a dwelling. Under the current Building regulations Extensions do not require an automated fire suppression system to be installed regardless of size.
- 2) The requirement is to install an automatic fire suppression system into the building as a whole and not just the developed part.
- 3) The Regulation does not take into account any substantial fire reduction measures already taking place as a result of the building project, such as reducing the number of kitchens within a property (70 - 80% of all domestic fires start within kitchens - Firesafe.org.uk).
- 4) The current costs for "Retrofitted" automatic fire suppression systems make the requirement not cost effective, a fact backed up by every commissioned and independent study undertaken thus far. (Collected costs and quotations range from £5000 to over £10000 depending on flow

availability, number of heads actuating and tank plus infrastructure requirements).

- 5) The Legislation has been implemented without sufficient infrastructure being in place. Within the whole of Wales there are only 7 registered BAFSA companies. This is highly likely to lead to non-competitive pricing.

The review should also look at the wider implications of how this Legislation has been implemented now that it has been in place for some time. Considerations should include:

- 1) Maintenance of the Systems – The Legislation does not include anything for any ongoing maintenance requirements once the system has been installed. The Welsh Assembly’s [sic] approach to this is to provide the public with a “Leaflet” which is supposed to provide information to the home owner regarding the maintenance requirements of the system; however this falls short of what would be achieved if it was part of the legislation to ensure ongoing maintenance of the system. However the knock on effect of this is to further burden homeowners with higher home owning and running costs, with ongoing maintenance costs estimated at over £2000 per year.
- 2) Legionella Risk (due to lack of maintenance) – It is widely thought that in general sprinkler systems are not a source of Legionella (FPA RC63), however as Wales is the 1st country in the world to legislate Domestic Sprinkler Systems as a requirement for all new build and converted homes we believe that more investigation is required especially as the regulation negated to include the maintenance of the system. We believe that as systems age and are not maintained due to costs, Legionella risk will become more prevalent putting the public at a higher risk of infection.
- 3) Costs – Due to the tight margins for House Builders and Developers, some have now stopped or will be stopping House building in certain areas of Wales (Persimmon & Redrow) as a direct result of this Legislation.
- 4) Cost Benefit Analysis – During the initial investigation it was estimated that the system would cost £1500 – £2500 per household. In reality the cost are between £5000 and £10000 per installation. Additional equipment is often required because Dwr Cymru cannot guarantee minimum water flow and pressure.

Background

The *Building Regulations &c. (Amendment No. 3) and Domestic Fire Safety (Wales) Regulations 2013* require automatic fire suppression systems (i.e. fire sprinklers) to be installed in new and converted residential properties in Wales. This requirement was introduced, subject to transitional provisions, in two stages on 30 April 2014 and 1 January 2016. There is no requirement to install sprinklers in existing housing undergoing refurbishment, unless such refurbishment involves the creation of one or more new residences.

Prior to the introduction of this legislation, sprinklers had only been required in new high rise residential buildings over 30 metres in height. This requirement was in place from 2007 and applied in both England and Wales.

Practical guidance on how to comply with the requirement for fire sprinklers can be found in the Building Regulations [Approved Document Part B \(Fire Safety\)](#).

Welsh Government action

Lesley Griffiths AM, the Cabinet Secretary for Environment and Rural Affairs, wrote to the Committee on 5 September 2017. Her letter addresses the issues raised in the petition:

Material change of use

The petition questions the requirement to install sprinklers where two existing residences are amalgamated, for the following reasons:

- The process should be deemed no different to adding an extension to an existing residence (sprinklers are not required to be installed in this scenario);
- The requirement is for sprinklers to be installed to the whole building, not just the developed part;
- The requirement does not take into account other fire reduction measures introduced as a result of the building work, for example reducing the number of kitchens;
- The costs of ‘retrofitting’ sprinklers is prohibitive, ranging from £5,000 to £10,000; and
- There are only seven British Automatic Fire Sprinkler Association (BAFSA) registered businesses in Wales, which is ‘highly likely’ to lead to non-competitive pricing.

The Cabinet Secretary’s letter confirms that the amalgamation of two existing residences would constitute a material change of use, and would therefore require the installation of sprinklers. The letter also describes the legislative process which brought about the requirement.

The *Domestic Fire Safety (Wales) Measure 2011*, which sets out the requirements for sprinklers, states:

- (2) ... this Measure applies to building work in Wales which comprises or includes—
- (a) constructing a building for use as a residence, or a number of residences,
 - (b) converting a building, or part of a building, to use as a residence, or a number of residences,
 - (c) subdividing one or more existing residences so as to create one or more new residences, or
 - (d) **amalgamating existing residences so as to create a new residence or new residences.** [Research Service emphasis]

On the costs associated with installing sprinklers where two existing residences are amalgamated, the Cabinet Secretary's letter states:

The costs of installing sprinklers included within the regulatory impact assessment represented a broad average of expected costs which have been largely supported by the pilot study final report. We do however accept costs of installing fire suppression systems in small scale developments and those involving refurbishment are likely to be higher, including where two or more dwellings are being altered into one (and conversely).

The pilot study report can be found on the Welsh Government website: [Welsh Government Sprinkler Pilot Study Final Report](#).

Overall cost of installing sprinklers

The petition states that, due to tight margins, some house builders (it names Persimmon and Redrow) have stopped building in some parts of Wales as a direct result of the requirement for sprinklers.

It also states that the actual costs of installing sprinklers is considerably higher than originally estimated (£5,000 to £10,000 versus £1,500 to £2,500), noting that additional equipment is often required because Dŵr Cymru does not guarantee minimum water flow and pressure.

The Cabinet Secretary's letter states:

... it is difficult to assess costs as each property will differ in relation to the building design, sprinkler design, availability of a suitable water supply and location of contractor. In relation to the water supply where there is sufficient flow and pressure then a main fed system is the most cost effective. Where a pump is required to enhance the mains flow and pressure then the costs will increase.

Maintenance of sprinkler systems

The petition highlights that there is no requirement for ongoing maintenance once the sprinklers have been installed, resulting in the requirement for sprinklers falling short of what would otherwise be achieved. However, it also states that the effect of such a requirement would be to place a further burden of £2,000 per year maintenance costs on homeowners.

The Cabinet Secretary's letter states:

In relation to the maintenance of a fire suppression system, this would be the responsibility of the homeowner or person responsible for the property, there are no continuing control requirements in relation to the building regulations following certification of the completion of the building work.

Legionella

The petition states that there will be increased risk of infection from Legionella as sprinkler systems age and are not maintained. It calls for more investigation into this area, given that

Wales is the first country to legislate to require sprinklers in all new and converted residential properties.

The Cabinet Secretary's letter states:

In relation to legionella, this spreads via infected aerosolised water. To be aerosolised, water droplets need to [be] a certain size, far smaller than the droplets of water that a[re] sprayed from fire sprinkler systems. In addition, aerosolised water would only be likely if the sprinklers were activated, in which case exposure is unlikely as occupants would be leaving the area due to a fire situation. While there is a risk of legionella, that risk is low or negligible when considering fire sprinkler systems.

Legionnaire's disease

The [NHS Choice website](#) states that:

Legionnaires' disease is caused by Legionella bacteria infecting the lungs. It is usually caught by breathing in small droplets of contaminated water. The infection is not contagious and cannot be spread directly from person to person.

Legionella bacteria are usually found (often in harmlessly low numbers) in sources of water, such as ponds, rivers and lakes. However, the bacteria can rapidly multiply if they find their way into artificial water supply systems, such as air conditioning systems.

Large buildings, such as hotels, hospitals, museums and office blocks, are more vulnerable to Legionella contamination because they have larger, more complex water supply systems in which the bacteria can quickly spread.

National Assembly for Wales action

Recent discussion on sprinklers in the Assembly has focused on fire safety in high rise buildings following the Grenfell tower fire in London in June, rather than on the specific issues raised in the petition.

The Equality, Local Government and Communities Committee is currently undertaking an [inquiry into fire safety in high rise buildings](#). The Committee took evidence from a number of stakeholders on [13 July](#), and from both the Cabinet Secretary for Environment and Rural Affairs and the Cabinet Secretary for Communities and Children (Carl Sargeant) on [27 September](#).

The Climate Change, Environment and Rural Affairs Committee undertook general scrutiny of the Cabinet Secretary for Environment and Rural Affairs on [20 July](#).

During these sessions the Cabinet Secretaries stated that any review of the Building Regulations, within the broader context of fire safety, would take place once the work of the expert groups established following the Grenfell fire have run their course.

The [Independent Review of Building Regulations and Fire Safety](#), established by the UK Government, is due to submit an interim report in autumn 2017 and a final report in spring 2018.

Every effort is made to ensure that the information contained in this briefing is correct at the time of publication. Readers should be aware that these briefings are not necessarily updated or otherwise amended to reflect subsequent changes.