



# THINK SPRINKLER



**South Yorkshire  
FIRE & RESCUE**

[www.syfire.gov.uk](http://www.syfire.gov.uk)

# THINK SPRINKLER

There is clear evidence that sprinklers can be effective in stopping fires spreading and putting them out. Derbyshire Fire & Rescue Authority (DFRA) plays a key leadership role in promoting better understanding of the benefits of sprinklers as part of a core commitment to reducing the impact of fire on people, property and the environment in Derbyshire.

## SPRINKLERS CAN:

- Reduce death and injury from fire.
- Reduce the risks to firefighters.
- Protect property and heritage.
- Reduce the effects of arson.
- Reduce the environmental impact of fire.
- Reduce fire costs and the disruption to the community and business.
- Permit design freedoms and encourage innovative, inclusive and sustainable architecture.



# SPRINKLER MYTHS

Sprinklers have been proven to reduce the impact of fire. They are a potentially life saving tool that bring many benefits. However, we have found there are some common misconceptions about sprinklers that are stopping people installing them. These sprinkler myths need to be dispelled.

**MYTH:** In a fire all the sprinkler heads go off together.

**FACT:** Only the sprinkler head(s) directly affected by the fire is triggered.

**MYTH:** Water from the sprinkler causes more damage than the fire.

**FACT:** Sprinklers attack the fire quickly and directly so less water is needed. As they also operate the fire alarm, the flow can be quickly turned off when the fire is out.

**MYTH:** A smoke detector will always provide enough protection.

**FACT:** Operational smoke detectors do save lives, however they do nothing to extinguish a growing fire.

**MYTH:** Sprinklers go off accidentally.

**FACT:** The odds of winning the lottery are greater than the 16 million to one chance of a sprinkler malfunction.

# We work to encourage building owners and developers to install sprinklers when there is a risk-based case for doing so.

 without sprinklers  with sprinklers

## Residential Care Homes

Older people, people with mental health problems and those with mobility issues are groups that are most at risk from fire.

We consider that all residential care homes should be fitted with sprinklers. In Scotland there is already a requirement within Building Standards for all new build residential care buildings to have automatic fire suppression systems installed and we think that there should be the same level of protection in Derbyshire.

## Schools

Hundreds of schools in the UK have a fire each year. The impact of these fires is significant, not just in financial terms, but also in terms of the devastating effect on the communities they serve and the disruption to students, teachers and families. The effects on children's education are not confined to lost course work but often include longer travelling times, disrupted social groups and poorer facilities. If sprinklers were considered at the design stage of building a new school or the refurbishment of existing buildings, the costs can be kept to a minimum (as low as one per cent of build costs).

## Domestic Premises

Fires in the home still account for the greatest number of fire deaths and injuries each year. While it would be ideal for all domestic premises to have sprinklers, it is recognised that this is not practical or realistic. We advocate the fitting of sprinklers in the homes of people most at risk from fire – younger people, older people, people with mental health problems and those who have mobility problems. We work in partnership with developers, the residents of Derbyshire and social housing landlords to encourage the installation of sprinklers in the homes of the most vulnerable people.



## Commercial Premises

There is a compelling case to be made for sprinklers in any commercial premises on the basis of loss of production or interruption to business as this is a real impediment to business continuity and productivity. It is a recognised fact that 85 per cent of small and medium businesses that suffer a serious fire either never recover or cease trading within 18 months. The installation of sprinklers in these types of premises could prevent this. Losses due to fire would reduce and fewer businesses would be forced to relocate.

## Design Freedoms

Sprinklers can allow much more interesting use of space. New building codes work on a performance-based approach to the safety of a building, so by including sprinklers, designers can achieve greater freedom to fulfil their overall vision. They can include features such as:

- Larger compartment sizes.
- More open spatial designs.
- Reducing exit door widths.
- Reducing periods of fire resistance to elements of structure.
- Reducing constraints such as distances between buildings.

## Preventing Damage to the Environment

Sprinklers can increase the sustainability and life expectancy of buildings, by limiting fire development and significantly reducing the amount of smoke, CO<sub>2</sub> and other pollutants.

Sprinklers use much less water to put a fire out than fire brigade hoses - and lead to much less water damage.

# THE SPRINKLER TIMELINE

The timeline below illustrates the progression of a fire in a building both with and without a sprinkler system.

Without sprinklers

Fire Starts



0 seconds

Smoke alarm goes off. Evacuate the building and call 999.



30 seconds

The ceiling temperature reaches 100°C



2mins 30secs

The fire reaches 600°C. Anyone in the room where it started is now dead.



3mins 30secs

With sprinklers

Fire Starts



Smoke alarm goes off. Evacuate the building and call 999.



The sprinkler head nearest the fire goes off.



The fire is brought under control.



The fire fills surrounding rooms. Any room where there are flames is now fatal to be in

The fire now engulfs the building. Toxic smoke and searing heat makes survival almost impossible.

The fire service fights the fire.

The house is uninhabitable for six months to a year and may need to be re-built.



**6 minutes**

**9 minutes**

**10 minutes**

**Aftermath**



The fire is out.



The rest of the building is fine.



The fire service checks the fire is out and turn the sprinklers off.



The room where the fire started is uninhabitable for one to two days and the building may need airing.

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