Sprinkler reliability and effectiveness

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Cross Party Group on Accident Prevention

Protecting people, property and the environment
What sprinklers do

• Independent heat sensing elements detect a fire
• Raise an alarm
• Automatically apply water to fire area controlling fire size and growth
• Reduce the toxic effects of smoke
• Prevent flashover development
• Increase evacuation time
• Allow more time for F&RS to attack the fire
• Reduce fire damage by up to 95%
Smoke alarm activates

F.B. notified

F.B. arrives

1st Water on fire

Time Mins

0  1  2  3  4  5  6  7  8  9  10

Fire Starts

Tenability Level

45 sec

10mins
Fire Starts

5 mins

Sprinkler operates

Fire under control

5 mins

Smoke alarm activates

Tenability Level

Fire starts at 1:15
Smoke alarm activates

Level

Time Mins

0 1 2 3 4 5 6 7 8 9 10
Scotland’s Standard

- Enclosed Shopping Centre
- Required in all new Residential Care Homes
- Sheltered Housing Complex
- High rise domestic over 18m high
- All new schools
- Hospital high risk areas and Departments.
- Warehouses over 14,000\(m^2\)
- Some local authorities have it mandatory in their social housing.
Who are the vulnerable?

• Older people
• Children and young people
• People with learning or physical disabilities
• People with mental illness, alcohol or drug abuse problems
• People in temporary accommodation or other poor housing

Two main factors where suppression systems are essential?

1. High probability of a fire occurring
2. Low probability of escape
Hostel: 9/6/15

- Fire in 2nd floor bedroom (deliberate)
- 46 bed hostel for homeless persons
- 1 sidewall head activated
- No fire-fighting action by crews
- 2m² fire damage reported
- No disruption to other residents
Sheffield mobility scooter fire January 2016

- Callow Mount
- Sprinklers fitted to 540 homes in 2015
- Mobility scooter parked outside house
- Fire started at about 06:00 while occupant asleep
- Fire prevented escape due to close proximity to doorway
- Fire entered house via glazing units
- 3 sprinkler heads operated to prevent fire spread inside
- Occupier safe inside adjoining room
- Fire treated as deliberate... signs of attempted theft.
Efficiency and Effectiveness of Sprinkler Systems in the United Kingdom: An Analysis from Fire Service Data

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Thanks

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