

Housing Health and Safety Rating System Case Study – Hazard 24: Fire in an HMO

A two-storey, brick-built, mid-terrace house converted into two single occupation flats.

Age of property = pre-1920

Vulnerable group = all persons 60 yrs or over

Assessment is of top floor flat – Fire Matrix Level 3

The ground floor comprises an entrance hallway from the street from which there is a door into the ground floor flat and a door opening onto a stairway leading up to the first floor flat. Both flats are occupied by single families.

The conversion took place in the late 1970s and the level of fire precautions present is consistent with a conversion from this time.

The partitions between the flats and the staircase enclosure are estimated to provide 30 minutes fire resistance. All partitions and ceilings are found to be of sound lath and plaster construction.

The entrance doors to each flat, accessed via the common internal entrance lobby, are “old-style” purpose built fire doors in good condition but lacking intumescent strips and cold smoke seals. There are no internal fire doors within the flats.

There is no AFD or Emergency Lighting.

There are water type fire extinguishers on each landing.

Both flats have individual gas fired hot water/central heating systems, serviced and in good condition.

There are two, double, wall mounted electric sockets in each living room and bedroom and two doubles in the kitchen in addition to a cooker point – the installation is recent and in good condition. Ovens are electric and hobs are gas.

Primary	Compounding factors	Ameliorating Factors
Lack of smoke seals or intumescent strips to flat entrance doors and of fire doors within flats	Lack of AFD in common parts or rooms	Short distance of travel and low height of building (2 storey) FFE on each landing
Lack of suitable mains wired, interlinked smoke alarms	Lack of smoke seals or intumescent strips in fire doors to flat entrance and lack of fire doors within flats	Short distance of travel and low height of building (2 storey)
Lath and plaster ceilings and partitions – high risk of early failure		Low fire loading to building

The 'average' situation obtained from the Guidance

Average likelihood of an occurrence in next 12 months is 1: 1681

Converted to Representative Scale Point (RSP) this is 1: 1800

Average range of harm outcomes is:

	Class 1	Class 2	Class 3	Class 4
Guidance	5.6%	0.0%	27.7%	66.7%
RSP	4.6%	0.0%	31.6%	63.8%

This gives an average score of 39, which is band H

IN THIS CASE

Likelihood converted to representative scale point is: 1: 560

Justification for adjusting likelihood:

The lack of an adequate fire resisting lobby within both flats means that it is more likely that a fire starting in either flat would break out into the protected staircase enclosure more quickly, compromising safe exit from the building. The lack of internal fire doors within the subject flat would also increase the risk that a fire, if it did occur within the flat, giving rise to a class 1 to 4 harm outcome

The lack of any AFD and FFE would mean that it would be more likely that any small fire that occurred would not be tackled at an early stage, developing into a major fire

Range of harm outcomes is:

	Class 1	Class 2	Class 3	Class 4
RSP	10.0%	0.5%	31.6%	57.9%

Justification for adjusting range of harm outcomes:

Class 1 has been increased from 4.6% to 10% because of the lack of structural fire precautions within the flat and the lack of smoke detection (most average UK flats now have battery smoke alarms which work on 55% of occasions). Class 2 has been increased slightly because there is a possibility of severe burns or fractures in effecting escape from the building.

Hazard score for this case:

Class of harm	Weighting		Likelihood		Spread of Harm		
Class 1	10,000	X	1/560	x	10.0	=	178.6
Class 2	1,000	X	1/560	x	0.5	=	0.9
Class 3	300	X	1/560	x	31.6	=	16.9
Class 4	10	X	1/560	x	57.9	=	1.0
					Total score & Band (This case)	=	197.4 Band F +

Note If smoke alarms were fitted in the flats we would reduce likelihood to 1/1000 but leave the harm outcomes because although there would be slight reduction in harm outcomes for Class 1 it would still give the same RSP of 10.0. We would not accept them in response to enforcement action