



Housing Health and Safety Rating System (HHSRS)

Group A
Protection Against
Accidents

Example A5.1
1920–45
Two-storey Maisonette
(Non-HMO)

Vulnerable Group
All persons aged
5 years and under

Multiple Locations
Yes

Related Hazard A4
Fire and Explosions

Related Hazard B14
Excess Heat

Case Studies

Hazard A5
Flames, Hot
Surfaces, etc



Dwelling

Description

This dwelling is a 1920–45, two-storey three-bedroomed maisonette occupying part of the top two floors of a six-storey purpose-built block of maisonettes. Access to the maisonette is via external stairs at the rear of the block, then into a hallway, from which the kitchen and living room are reached.

The maisonette is part of a larger development of social housing, with some communal facilities, including a district heating system.

The kitchen is small but well laid out, and the cooker is suitably located to minimise the risk of contact with hot rings or pans.



1

Exterior view of the flats

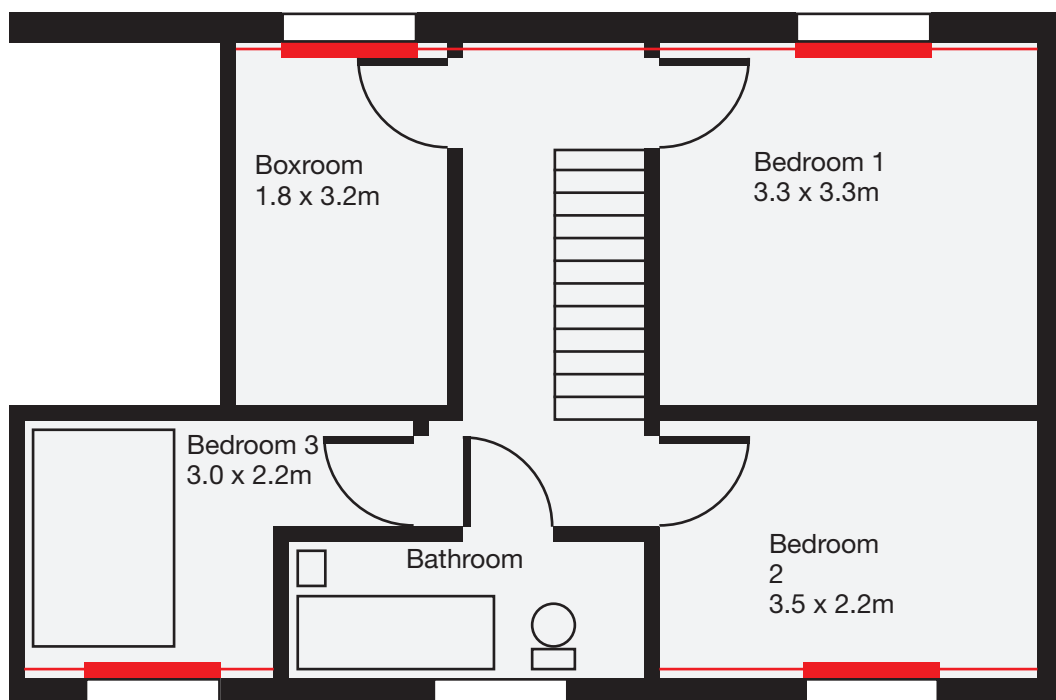
Deficiencies

Description

The uninsulated pipes from the district heating system are exposed adjacent to the radiators in most of the rooms in the flat (but not in the kitchen or bathroom), despite the temperature of the pipes being in excess of 80°C. High temperatures are required by the long distribution runs from the estate's boiler house, and the tenants have no control over the output of the system other than the manual valves on each individual radiator.

In the third bedroom, the only position for the bed means that there is a gap between the foot of the bed and the exposed pipes.

Each flat has its own hot-water tank with immersion heater to supply the sink, bath and wash-hand basin.



2
Floorplan showing
locations of exposed
pipes and radiators



3
Gap between foot of bed
and uninsulated central
heating pipes

Relevant Baseline Indicators

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective

Subject	Score	BI	Baseline Indicator
3 Plumbing System	0 1 2 3	3.2	An adequate supply of heated running water shall be provided to sinks, wash-hand basins, baths and showers. Hot water storage tanks shall be set at a minimum temperature of 60°C. At bath taps and shower heads, the maximum temperature shall be 45°C to prevent accidental scalding.
13 Guards	0 1 2 3	13.3	Any open fires or flames as a source of heat must be adequately guarded to ensure any accidental falls or trips do not result in contact with the open flames. Where there is risk of prolonged contact with hot surfaces of more than 43°C, adequate guarding must be provided to prevent contact
14 Lighting and Services	0 1 2 3	14.6	Every habitable room shall have at least 2 separate and remote double electric sockets that are suitably located for use. Kitchens shall have at least 4 suitably located double sockets.
15 Heating and Insulation	0 1 2 3	15.2	Hot water cylinder, if present, must be insulated with a minimum 50 mm jacket if not pre-insulated, and it must be fitted with a tank thermostat.
	0 1 2 3	15.5	Heating and hot water must be capable of being controlled effectively and timed to operate by the occupiers.

Other Relevant Matters

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective

Score				Matters affecting Likelihood of Harm
0	1	2	3	Hot surface protection
0	1	2	3	Thermostatic taps
0	1	2	3	Kitchen layout
0	1	2	3	Worktop space by cooker
0	1	2	3	Separation of cooking area from living/sleeping space

Score				Matters affecting Harm Outcomes
0	1	2	3	Surface/liquid temperature
0	1	2	3	Exposure time

Likelihood of Harm

Scale Points	
Likelihood of harm from this hazard over the next twelve months	
Very Likely	1 in 1
	1 in 2
	1 in 3
	1 in 5
Likely	1 in 10
	Example Dwelling 1 in 20
	1 in 30
	1 in 50
Unlikely	1 in 100
	1 in 200
	National Average 1 in 300
	1 in 500
Very Unlikely	1 in 1,000
	1 in 2,000
	1 in 3,000
	1 in 5,000
Score	
1 in 20	

Justification of Scoring
Likelihood of Harm

The only possible position for the bed in the third bedroom (which is highly likely to be used by a child) could allow a young child to slip into the gap between the bed and the wall where hot pipework is located. The pipework is uninsulated and can reach 80°C, significantly increasing the likelihood of harm to the vulnerable group to above the national average.

Exposed heating pipework and radiators elsewhere also pose a risk to the vulnerable group.

Harm Outcomes

Extreme		Severe		Serious		Moderate		
Death, permanent paralysis, etc.		Heart attack, serious fractures, etc.		Chronic stress, severe concussion, etc.		Broken fingers, moderate cuts, etc.		
Very Likely	50.0	Very Likely	50.0	Very Likely	50.0	Example Dwelling	64.8	
	30.0		30.0		Example Dwelling	79.8		
	20.0		20.0		National Average	These scores are simply calculated as the sum of the other three harm outcomes subtracted from 100%		
Likely	10.0	Likely	10.0	Likely	10.0			
	5.0		Example Dwelling		5.0			
	2.0		2.0		2.0			
Unlikely	1.0	Unlikely	1.0	Unlikely	1.0			
	0.5		0.5		0.5			
	Example Dwelling + National Average		0.2		0.2		0.2	
	0.1	Very Unlikely	0.1	Very Unlikely	0.1			
	0.0		National Average		0.0		0.0	
Score		Score		Score			Score	
0.2%		5.0%		30.0%			64.8%	

Justification of Scoring

Harm Outcomes

The ‘Severe’ harm outcome, which includes serious burns, has been increased to likely in this case due to the potential for a child to get stuck between the bed and the radiator and hot pipework.

The ‘Serious’ harm outcome, which includes burns to hands, has also been increased to very likely due to the potential for hand contact on hot radiators or pipework whilst trying to escape from the gap between the bed and the radiator.

Safety Ratings

Scenario 1
As described in this document

Key

Category	Band	Score
1 Legal duty to take action	High	10,000
2 Discretion to take action	Medium	1,000
	Low	100

Likelihood of Harm 1 in 20			
Extreme 0.2%	Severe 5.0%	Serious 30.0%	Moderate 64.8%
Category	Band	Score	
1 Legal duty to take action	High	10,000	
2 Discretion to take action	Medium	1,000	832
	Low	100	
National Average		29	

Score
832

Scenario 2

After works meeting baseline indicators

Likelihood of Harm 1 in 300			
Extreme 0.2%	Severe 0.0%	Serious 20.0%	Moderate 79.8%
Category	Band		Score
1 Legal duty to take action	High		10,000
2 Discretion to take action	Medium		1,000
	Low		100
Score 29	Example Dwelling + National Average		29

Justification of Scoring

After works meeting baseline indicators

BI 14.3 requires adequate guarding to be provided where contact is possible with surfaces that reach more than 43°C and BI 15.5 requires heating to be controllable by the occupants. Attaining these BIs would mean installing thermostatic valves on all the radiators to limit the surface temperatures to 43°C. All the exposed pipework would be boxed in or covered with insulation to prevent the risk of burns. The risk would consequently return to that of the national average.

Scenario 3

After further improvements

Likelihood of Harm			
Extreme	Severe	Serious	Moderate
Category	Band		Score
1 Legal duty to take action	High		10,000
2 Discretion to take action	Medium		1,000
	Low		100

Justification of Scoring

After further improvements

N/A

Other Legislation and Guidance

Updates

Matters for consideration listed in this section were correct at the time of publication. For the most up-to-date legislation and guidance in these areas, please visit the [gov.uk](https://www.gov.uk) website.