

Housing Health and Safety Rating System (HHSRS)

Case Studies

Group B Physiological Requirements

Hazard Excess Cold

Example B9.6
1946–79
Semi-detached House
(Non-HMO)

Vulnerable Group
All persons aged
65 years and over

Multiple Locations
Yes

Related Hazard	B11
Damp and Mould Growth	

Dwelling

Description

This is a semi-detached house, built in the 1950s, of non-traditional construction, similar to the design employed by the British Iron and Steel Federation (BISF) at the time. It was built originally by the local council, then sold under the Right to Buy scheme, subsequently being acquired unimproved by a private landlord.

The walls are of steel-frame construction, faced externally with vertical steel sheeting. Internally the walls are finished with plasterboard, supported on timber frames. The property is in a good state of repair for its age. The gas safety and electrical installation condition reports for the property are satisfactory. The EPC is rated F.



1

Front exterior view of
property

Deficiencies

Description

There are gas fires fitted in the original fireplaces in the living and dining rooms on the ground floor. There is no fixed heating in the kitchen or bedrooms. There is an electric, blower heater fixed on the wall in the bathroom. The tenants use portable heaters in the bedrooms.

The walls are insulated by glass wool quilting hung within the external wall frame, and the roof space has a thin (50mm) layer to the whole area. There is no insulation or thermostat to the hot water tank, and the windows are single glazed. Ventilation of the kitchen and bathroom is by opening the windows.



2
Old gas fire



3
Portable heaters



4
Fan heater in
bathroom



5
Uninsulated
hot water tank

Relevant Baseline Indicators

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective

Subject	Score	BI	Baseline Indicators
4 Sanitary Facilities: Bathroom	0 1 2 3	4.8	Ventilation for the bathroom must be provided by mechanical extraction that is ducted to the outside of the building, in line with Baseline Indicator 16.1.
5 Sanitary Facilities: Kitchen	0 1 2 3	5.6	Suitable facilities for the effective and safe removal of fumes and moisture-laden air to the external air by means of a cooker hood or extractor fan; a cooker hood that only recycles the odour through an active carbon filter would not be acceptable, it must vent to outside. A mechanical extractor would be the normal mechanism for this function, in line with Baseline Indicator 16.1.
14 Lighting and Services	0 1 2 3	14.4	All electrical installations, including fixtures and fittings, must be maintained in good repair.
	0 1 2 3	14.5	Gas appliances and flues provided for occupants are safe for continued use.
15 Heating and Insulation	0 1 2 3	15.1	Structural thermal insulation shall be provided to minimise heat loss. Where there is a loft space, insulation shall be provided as detailed: a minimum 250mm of loft insulation (assumed to be mineral wool or similar).
	0 1 2 3	15.3	If the walls are of cavity wall construction, they must be insulated unless professional examination confirms to do so is technically unfeasible, due to either their condition or location in terms of wind-driven rain, or the width of the cavity being less than 40mm.
	0 1 2 3	15.4	Every dwelling shall have a properly installed heating system in good and safe working condition that is capable of safely and adequately heating all habitable rooms, bathrooms and WC rooms. The system must be capable of heating the main living area to 21°C and the remaining habitable rooms to a temperature of 18°C when the external temperature is minus 1°C, and the system should not allow the temperature to exceed 25°C in any room during the heating season.
	0 1 2 3	15.5	Heating and hot water must be capable of being controlled effectively and timed to operate by the occupiers.
16 Ventilation	0 1 2 3	16.1	The air exhausted from a bathroom, WC room, kitchen, clothes dryer or basement must be provided by mechanical ventilation or by a correctly designed and installed natural ventilation system, as required by Part F of the Building Regulations. In addition, it shall not be vented into any other parts of the building's habitable space or an attic; such air shall discharge directly to the outdoors but not near any intake on the building exterior.
	0 1 2 3	16.4	All means of ventilation shall be maintained in good repair and working order.

Relevant Matters

Score				Matters affecting Likelihood of Harm
0	1	2	3	Thermostatic radiator valves
0	1	2	3	Insulation settling
0	1	2	3	Ventilation quantity
0	1	2	3	Ventilation control
0	1	2	3	Draught proofing

Score				Matters affecting Harm Outcomes
0	1	2	3	Thermostatic radiator valves
0	1	2	3	Insulation settling
0	1	2	3	Ventilation quantity
0	1	2	3	Ventilation control
0	1	2	3	Draught proofing

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
		1 in 20
	Example Dwelling	1 in 30
Unlikely		1 in 50
		1 in 100
		1 in 200
		1 in 300
Very Unlikely		1 in 500
		1 in 1,000
		1 in 2,000
		1 in 3,000
		1 in 5,000

Score

1 in 30

Justification of Scoring

Likelihood of Harm

The lack of fixed heating to bedrooms and the inefficient heater to the bathroom provide insufficient heat to maintain comfortable indoor temperatures. In addition, the inefficient means of ventilation, poor thermal efficiency (due to limited structural insulation) and single-glazed windows will mean any heat produced will readily dissipate from the dwelling. The dwelling is therefore significantly worse than the national average, justifying an increase in likelihood that someone within the vulnerable group will suffer from the effects of excess cold.

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 Dwelling45.0 National Average45.0 These scores are simply calculated as the sum of the other three harm outcomes subtracted from 100%	
Example Dwelling + National Average	30.0		30.0		30.0		
	20.0		20.0	Example Dwelling + National Average	20.0		
	Likely	10.0	Likely		10.0		
	5.0	Example Dwelling + National Average	5.0		5.0		
	2.0			2.0			
Unlikely	1.0		Unlikely	1.0	Unlikely		
	0.5		0.5		0.5		
	0.2		0.2		0.2		
Very Unlikely	0.1		0.1	Very Unlikely	0.1		
	0.0		0.0		0.0		
Score 30.0%		Score 5.0%		Score 20.0%		Score 45.0%	

Justification of Scoring
Harm Outcomes

There is no evidence to suggest harm outcomes would differ from the national average for this hazard.

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 30			
Extreme 30.0%	Severe 5.0%	Serious 20.0%	Moderate 45.0%
Category	Band		Score
	Example Dwelling		10,382
1 Legal duty to take action	High		10,000
2 Discretion to take action	Medium		1,000
	National Average		311
	Low		100

Score
10,382

Scenario 2

After works meeting baseline indicators

Likelihood of Harm
1 in 500

Extreme 30.0%	Severe 5.0%	Serious 20.0%	Moderate 45.0%
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Category	Band	Score
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1 Legal duty to take action	High	10,000
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2 Discretion to take action	Medium	1,000
	Example Dwelling	623
	National Average	311

	Low	100
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Score

623**Scenario 3**

After further improvements

Likelihood of Harm
1 in 1,000

Extreme 30.0%	Severe 5.0%	Serious 20.0%	Moderate 45.0%
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Category	Band	Score
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1 Legal duty to take action	High	10,000
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2 Discretion to take action	Medium	1,000
	Example Dwelling + National Average	311
	Low	100

Score

311**Justification of Scoring**

After works meeting baseline indicators

Installing a whole-dwelling heating system will enable healthy temperatures to be achieved. Increasing the depth of loft insulation and the installation of mechanical extract ventilation to the kitchen and bathroom will help to maintain healthy temperatures, and insulating the hot water tank and fitting a thermostat will make water heating more efficient and cost effective.

Justification of Scoring

After further improvements

Additional works to upgrade windows to double glazing and install wall insulation to provide efficiency comparable to masonry brickwork would bring this property to the national average. After installation of an appropriate whole-dwelling heating system as per BIs, the gas fires would be unnecessary. They could be removed and the chimney flues capped. These further works would improve the property to attain the national average.

Other Relevant Legislation and Guidance

Minimum Energy Efficiency Standard

The Energy Efficiency (Private Rented Property) (England and Wales) Regulations 2015 (often referred to as the Minimum Energy Efficiency standards/MEES) set a minimum energy efficiency level for domestic private rented properties. Since 1 April 2020, property owners can no longer let or continue to let properties covered by the MEES Regulations if they have an EPC rating below E unless they have a valid exemption in place. The Government has since proposed that all rental properties will need an EPC rating of 'C' or above in the future (which remains a proposal at the time of writing), and it will be in a property owner's interest to consider this when making decisions around conducting works, as it may be more economically efficient to improve a property straight to Band C rather than carrying out graduated works over a period of time.

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.