



Housing Health and
Safety Rating System
(HHSRS)

Case Studies

Group B
Physiological
Requirements

Hazard B9
Excess Cold

Example B9.8
1920–1945
End-of-terrace House
(Non-HMO)

Vulnerable Group
All persons aged 65 years
and over

Multiple Locations
Yes

Related Hazard B11
Damp and
Mould Growth



Dwelling

Description

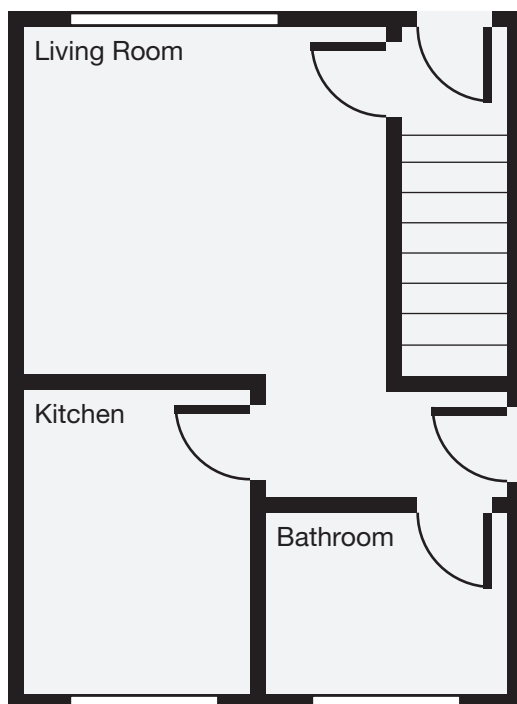
This is a three-bedroomed, end-terrace house on a small estate, just off the centre of a small market town. The property was built around 1922 and is constructed with solid brick walls. It was re-roofed in the 1980s with concrete tiles, and this roof, the gutters and downpipes are in sound condition. The ground-floor rooms have solid, uninsulated floors.

The windows are all uPVC double glazed. All are in sound condition and open and close freely. There is a 27-year-old combi-gas boiler providing central heating and radiators (with thermostatic radiator valves (TRVs)) in every room. The system has a programmer and room thermostat. Hot water is provided by the combi-boiler.

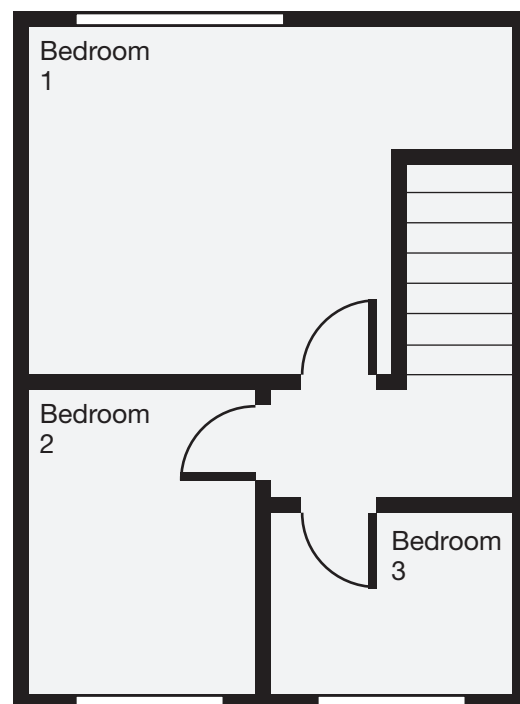
There is a gas safety certificate (but no service records for the boiler), and the electrical installation is satisfactory. The EPC, provided in 2014, is E rated (score of 51). The dwelling is rented to a family.



1
Front exterior



2
Ground Floor



3
First Floor

Deficiencies

Description

There are solid brick walls, with the exposed gable wall being north facing. The mineral-wool loft insulation has settled to a depth of less than 25 mm (originally it was 50 mm). Half of the fixed lighting is low energy.

The windows are double glazed but do not have trickle vents. There is no extractor fan in either the bathroom or kitchen.

None of the TRVs appear to work properly except for the one in the living room. The tenant was unaware that these could be adjusted and did not know how to use the programmer correctly.



4
The boiler

Relevant Baseline Indicators

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective

Subject	Score	BI	Baseline Indicator
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.

Relevant Baseline
Indicators

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective

Subject	Score	BI	Baseline Indicator
16 Ventilation	0 1 2 3	16.2	All habitable rooms must have at least one window, door or skylight which opens to the outside and can be fixed in an open position. In addition, ventilation may also be provided by the presence of trickle vents, air bricks or passive stack ventilation.
	0 1 2 3	16.4	All means of ventilation shall be maintained in good repair and working order.
17 Moisture and Contaminant Control	0 1 2 3	17.3	No single room in any of the property shall have an observable level of damp or mould growth or deterioration of internal finishes that exceeds 5% of the wall and/or ceiling surface.

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

Score

1 in 100

Justification of Scoring
Likelihood of Harm

The solid brick wall construction was common in the local area until 1945. The older boiler is not capable of heating the entire dwelling efficiently or adequately. The defective TRVs to all but one radiator reduces the ability of any occupant to adjust the comfort levels in each room, though any excessive heating costs are mitigated somewhat by the room thermostat and the programmer/ time clock. The house has a north-facing gable wall that results in significant heat loss, which, combined with the negligible loft insulation, makes the house very expensive to heat adequately. These factors justify an increase in the likelihood of harm to a value greater than the national average.

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

No change from the national average. There is no reason to believe the potential spread of harm outcomes will be any different from the national average.

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 100		
Extreme 30.0%	Severe 5.0%	Serious 20.0%
		Moderate 45.0%
Category	Band	Score
1 Legal duty to take action	High	10,000
	Example Dwelling	3,115
2 Discretion to take action	Medium	1,000
	National Average	311
	Low	100
Score		3,115

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%
------------------	----------------	------------------	-------------------

Category	Band	Score
----------	------	-------

1 Legal duty to take action	High	10,000
-----------------------------------	-------------	--------

2 Discretion to take action	Medium	1,000
	Example Dwelling	623
	National Average	311

	Low	100
--	------------	-----

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%
------------------	----------------	------------------	-------------------

Category	Band	Score
----------	------	-------

1 Legal duty to take action	High	10,000
-----------------------------------	-------------	--------

2 Discretion to take action	Medium	1,000
	Example Dwelling + National Average	311

	Low	
--	------------	--

Score

311**Justification of Scoring**

After works meeting baseline indicators

The baseline indicators would require a minimum of 250 mm loft insulation, extractor fans in the kitchen and bathroom, and the heating system to be in good working order with TRVs so that the heating of individual rooms could be controlled, thus avoiding excess cost to the occupants.

Justification of Scoring

After further improvements

Further works could include replacement of the boiler with an efficient condensing boiler, provision of solid wall insulation (either by dry lining internally or cladding externally) and floor insulation to the concrete floors. Trickle vents could be provided in all the windows.

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.