



Housing Health and
Safety Rating System
(HHSRS)

Case Studies

Group A
Protection Against
Accidents

Hazard A7
Structural Collapse
and Falling Elements

Example A7.1
1920–1945
Semi-detached House
(Non-HMO)

Vulnerable Group
Persons of all ages

Multiple Locations
No

Related Hazard B11
Damp and
Mould Growth

Related Hazard C16
Domestic Hygiene



Dwelling

Description

This is a three-bedroomed semi-detached house, built in the 1930s as part of a large council house estate. It is rented to a family of four. The property is in a reasonable state of repair.

The bathroom, located on the first floor, contains the only toilet and wash-hand basin in the house. Otherwise, internally the property has been modernised (e.g. rewiring), but some of the work has not been carried out to a high standard.

The roof, chimney stack, guttering and external render are in sound condition, as is all the fencing around the garden.

The electrical installation is satisfactory, and the energy performance certificate (EPC) rating is E.



1

Front elevation of property

Deficiencies

Description

The bathroom is located at the rear of the house, above the kitchen. The mastic seal between the bath and the wall tiles has been crudely applied and it has deteriorated and split, thus not providing a watertight seal. The vinyl floor covering is badly worn and of a poor fit, especially around the toilet and wash-hand basin, meaning that any spilt water can find its way onto and through the floorboards to the joists below. Wet rot in the floor below the bath has caused the boards to deteriorate and some of the ends of the floor joists to come away from their bearings. The edge of the bath adjacent to the external wall has already dropped by 3 cm in places, resulting in cracks and bulging to the kitchen ceiling below.

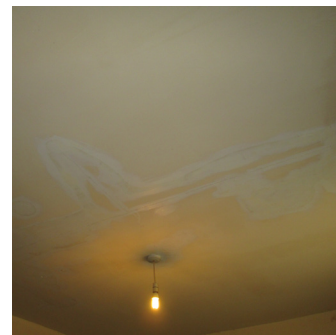
Immediately below the bath are the kitchen units and an electric cooker. To date, these do not appear to have been affected by water seeping from the bathroom above, and the units remain securely fixed to the wall. There is a door from the kitchen that provides the main access to the rear garden.



2
Failed seal around bath



3
Wet rot below bath



4
Water ingress and bulge
to kitchen ceiling

Relevant Baseline Indicators (BI)

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective

Subject		Score				Baseline Indicator	
1	Structural Condition	0	1	2	3	1.1	Externally, every foundation, roof, ridge line, flashing, fascia, soffit and bargeboard, exterior staircase, exterior wall/ fence shall be safe to use and capable of supporting the intended design loads and load effects and shall be in a proper state of structural repair. Internally, every interior wall, ceiling, inside stair, porch, accessory structure, door, window and window glass shall be safe to use and capable of supporting the intended design loads and load effects, and shall be in a proper state of structural repair.
2	Drainage	0	1	2	3	2.1	Every drainage fixture, stack, vent, water, waste and sewer pipe shall be properly installed, maintained in a safe and functional order and kept free from obstructions, leaks, and defects. The drainage system must have suitable rodding or access points to allow clearance of blockages.
4	Sanitary Facilities: Bathroom	0	1	2	3	4.2	A suitably located toilet in good working condition, that is sealed to the waste pipe and affixed to the floor or close-coupled, shall be properly connected to both the dwelling's water supply and a waste pipe, leading to an approved sewage system or private waste disposal system.
		0	1	2	3	4.3	A dedicated wash-hand basin that is located in the same room as the WC or immediately adjacent shall be in good working condition, with a stable connection to the wall or secure attachment to the floor that is properly connected to the heated and unheated potable water supply and a sealed trap leading to a waste pipe. The wash-hand basin must be adequately sealed with a flexible sealant to prevent leakage and damage to the adjacent areas.
		0	1	2	3	4.4	A fixed bath or shower in good working condition which does not leak and is properly connected to the heated/ unheated potable water supply as appropriate, and a waste pipe that does not leak. The bath or shower must be adequately sealed with a flexible sealant to prevent leakage.
		0	1	2	3	4.6	A constant supply of heated and unheated water to all wash-hand basins, baths and shower facilities must be supplied and a direct drainage connection with waste trap be in good working order and free from defects and sealed where necessary. Water supply pipes must have isolation valves to allow for maintenance.

Relevant Baseline
Indicators

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective

Subject		Score				Baseline Indicator	
		0	1	2	3	4.7	There must be a cleanable, non-absorbent water-resistant material on floor surfaces and extending on bathroom walls at least 300 mm above a bath and 1800 mm above the floor of a shower or shower tray. Such materials on walls and floors shall form a watertight joint with each other and with the bathtub or shower tray. Any shower shall have a shower screen, curtain or return wall that prevents water spillage to the floor.
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

Score

Matters affecting
Harm Outcomes

0 1 2 3

Fittings and fixtures

0 1 2 3

Height above ground

0 1 2 3

Size/weight of element

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
	1 in 300
	1 in 500
Very Unlikely	1 in 1,000
	1 in 2,000
	1 in 3,000
	National Average 1 in 5,000

Score

1 in 20

Justification of Scoring

Likelihood of Harm

Unless repaired, the escape of water from the bath will continue and further soak the supporting timberwork under the bath, causing continued rotting and failure of the floor materials. As part of the floor has already undergone some movement, the structure beneath is clearly deteriorating and without remedial action will only get worse.

The location of the bathroom – being directly above the kitchen and its specific areas that are in regular use – dramatically increases the likelihood that, in the event of a collapse, someone at ground-floor level will be affected.

The fact that the joists are compromised as a result of deterioration of the timber, there has already been movement to the floor, and the ceiling beneath is bulging would all suggest that collapse within the next 12 months would be very likely, with probable risk of injury.

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	77.8
	30.0		30.0		30.0		
	20.0		20.0		Example Dwelling	20.0	National Average
Likely	10.0	Likely	10.0	National Average	10.0		
	5.0		5.0		5.0		
	2.0		Example Dwelling		2.0	2.0	
Unlikely	1.0	Unlikely	1.0	Unlikely	1.0	These scores are simply calculated as the sum of the other three harm outcomes subtracted from 100%	
	0.5		0.5		0.5		
			0.2		0.2		
Example Dwelling + National Average	0.1	Very Unlikely	0.1	Very Unlikely	0.1		
	0.0				0.0		
Score		Score		Score		Score	
0.2%		2.0%		20.0%		77.8%	

Justification of Scoring

Harm Outcomes

A collapse of the kitchen ceiling would likely occur onto the wall-mounted units in the first instance. However, if an occupant were to be in the immediate vicinity, then the units and any ceiling debris could fall onto that person. 'Severe' and 'Serious' harms have consequently been slightly increased beyond the national average score.

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 2.0%	Serious 20.0%	Moderate 77.8%
Category	Band	Score	
1 Legal duty to take action	High	10,000	
2 Discretion to take action	Medium	1,000	
		Example Dwelling	539
	Low	100	
		National Average	1

Score
539

Scenario 2

After works meeting baseline indicators

Likelihood of Harm 1 in 5,000			
Extreme 0.2%	Severe 0.0%	Serious 10.0%	Moderate 89.8%
Category	Band		Score
1 Legal duty to take action	High		10,000
2 Discretion to take action	Medium		1,000
	Low		100
Score	Example Dwelling + National Average		1

Justification of Scoring

After works meeting baseline indicators

Compliance with the baseline indicators would ensure replacement of the defective kitchen ceiling and full examination of the bathroom floor joists, replacing where required. This, alongside dealing with all problem areas in the bathroom where water is escaping, making sure sealant is properly applied at all relevant junctions and providing a replacement water-resistant bathroom floor covering, would effectively deal with the defect.

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
Score			

Justification of Scoring

After further improvements

N/A

Other Relevant 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 website.