



Housing Health and Safety Rating System (HHSRS)

Case Studies

Group A
Protection Against
Accidents

Hazard A2
Falling on
Stairs etc.

Example A2.1
1920–45
Semi-detached House

Vulnerable Group
All persons aged
60 years and over

Multiple Locations
Yes

Related Hazards
No



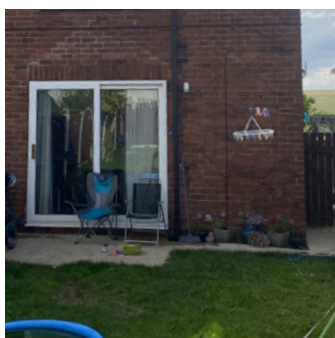
Dwelling

Description

The property is a 1920–45 semi-detached house, with insulated cavity brick walls and a concrete, tiled, hipped roof and 270mm of loft insulation. The external walls have an injected damp-proof course and there are uPVC double-glazed doors and windows installed throughout. There is a combined living/dining room and kitchen on the ground floor, and two bedrooms and a bathroom are located on the first floor. The property has a mains, gas-fired central heating system installed throughout via a combi boiler located in bedroom. There are radiators with thermostatic radiator valves in all rooms and the property has an energy performance certificate (EPC) rating of Band C (dated December 2020). There are mains-wired smoke alarms installed in the circulation areas to the ground and first floors. There is an open front garden, which provides a parking area, and a fully enclosed rear garden laid to lawn.



1
Front view of house with
front entrance door and
slope/step access



2
Rear view of house with
sliding doors to access
rear garden

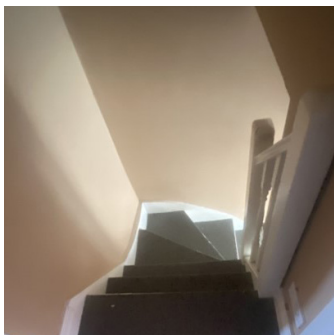
Deficiencies

Description

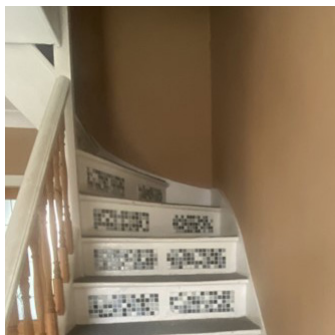
There is no natural light on the first-floor landing, making the edge of the top step difficult to see when going down the stairs. The light switches for the stairs light are inconveniently located, i.e. more than arm's length from the top or bottom step, meaning the occupant would be unlikely to use either switch.

The stairs from ground to first floor have three angled steps providing a 90 degree turn at the mid-point, and there is a handrail on one side of the stairs only. The handrail on the inside of the turn of the stairs does not run the full length of the stairs, and the newel post at the turn of the stairs is difficult to hold. The electrical socket at the top of the stairs increases risk of trips.

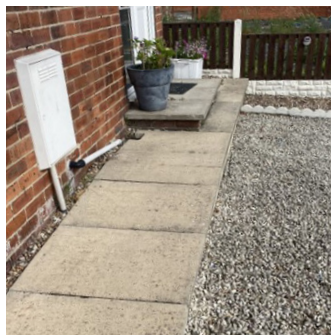
The sloped pathway and step to the entrance has no guarding or handrail.



3
Staircase looking down
from first floor landing



4
Staircase looking up from
ground floor hallway



5
Sloped pathway leading to
front door steps

Relevant Baseline Indicators

0

Satisfactory
or N/A

1

Not
Satisfactory

2

Defective

3

Seriously
Defective

Subject	Score	BI	Baseline Indicators
9 External Space	0 1 2 3	9.1	External yards, paths, steps accessways and surrounds within the curtilage of the dwelling shall be in good repair, even and well drained. Accessways must be suitable non-slip surfaces, have adequate lighting and should not have slopes of sufficient gradient to present a falls risk. This includes consideration to unevenness, trip risks and poor slip resistance, to any steps or surfaces within external space that is provided, to the front door, yard and garden. Where there are drops of more than 300 mm from paths, patios, steps, terraces or garden areas, guarding will be necessary where there are high risks of falling.
11 Security	0 1 2 3	11.1	Adequate external lighting shall be provided to all means of access including entrances and external refuse stores, providing good visibility when there is no daylight.
12 Walking Surfaces	0 1 2 3	12.1	Every interior and exterior stairway, ramp, deck, porch, balcony walkway, terrace, landing and hall shall be maintained structurally sound, in good repair, properly anchored and capable of supporting the imposed loads.
	0 1 2 3	12.2	Internal and external stairs must be safe, secure, in sound condition, free from defects and projections and well maintained. External stairs must be designed to allow water to drain away from the steps.
	0 1 2 3	12.3	Stair coverings must be securely and safely fastened. Treads on exterior stairways shall have non-slip surfaces, be firmly fixed and cover at least 75% of each tread.
	0 1 2 3	12.4	Every interior and exterior stairway with four or more risers shall have at least one structurally sound continuous handrail installed, between 900 and 1,000 mm high, measured from the pitch line to the top of the handrail. The handrail shall be firmly fastened, capable of supporting a load of 140 kg and be in good condition.
14 Lighting and Services	0 1 2 3	14.2	Every hall, stairs and landing within the house, and every room used, or intended for use, by the occupant of the house shall have a suitable and adequate means of artificial lighting that is controllable and accessible which can allow lighting to be turned on and off and bulbs/fixtures to be changed and maintained safely. Two-way or PIR-activated lighting shall be provided to any internal staircase.
	0 1 2 3	14.3	Light switches that control ceiling- or wall-type electric light fixtures shall be located conveniently in each room for safe use.

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		Tread lengths
0	1	2	3		Riser heights
0	1	2	3		Tread and riser variation
0	1	2	3		Nosing length
0	1	2	3		Tread alternation
0	1	2	3		Handrails
0	1	2	3		Guarding
0	1	2	3		Flight length
0	1	2	3		Lighting
0	1	2	3		Differentiation
0	1	2	3		Doors onto stairs

Score					Matters affecting Harm Outcomes
0	1	2	3		Flight length
0	1	2	3		Stair pitch
0	1	2	3		Projections
0	1	2	3		Surfaces

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
	1 in 50
Unlikely	1 in 100
	National Average 1 in 200
	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 30	

Justification of Scoring
Likelihood of Harm

In order to access the front entrance, an occupier (or visitor) in the vulnerable age group of 60 years and over must negotiate the sloped pathway and step up to the front entrance door. This sloped pathway and step has no guarding or handrail, which, as suggested in the Inspection and Assessment Manual, will double the likelihood of a fall. This is the main entrance to the property and will be used daily irrespective of weather conditions, increasing the likelihood of a fall due to slips in wet or freezing conditions. This is compounded by reduced coordination and balance of those in the vulnerable age group in cold conditions.

The staircase between the ground and first floors has an interrupted handrail. The missing section of handrail is where it is needed most, namely at the winder. Stairs with winders command concentration, and as such there is usually a reduced likelihood of falls in comparison with straight staircases. There is a lack of natural lighting at the top of the stairs, making it difficult to judge the first step, and due to the proximity of the electrical socket to this unlit area, there is a potential for equipment or trailing wires (or even the fear of them) to break the concentration of the vulnerable age group when commencing their descent. The staircase will be used frequently to access the sanitary provisions and bedrooms, including during in the evening when the house will be naturally darker. The inconvenient positioning of the light switches may lead to attempts to navigate the staircase in dark conditions, increasing the likelihood of a harmful occurrence to a member of the vulnerable age 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	58.0	
	30.0		30.0		Example Dwelling			
	20.0		20.0		National Average			
Likely	10.0	Example Dwelling	10.0	Likely	10.0	National Average	These scores are simply calculated as the sum of the other three harm outcomes subtracted from 100%	
	5.0				5.0			
Example Dwelling + National Average	2.0	National Average	2.0		2.0			
	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		Score		Score		Score		
2.0%		10.0%		30.0%		58.0%		

Justification of Scoring

Harm Outcomes

A fall on the internal staircase could lead to a person striking themselves against the protruding newel posts and/or against the wall before they have had the chance to slow their momentum, increasing the likelihood of serious harm outcomes (fractured skull, severe concussion). A fall externally, although likely to be shorter in distance, would expose the person to impact with hard, unforgiving surfaces and a variety of projections such as the step edges and corners, pipework and the utility boxing, edging stones or the corner of the building.

This would be compounded in the event of cold temperatures and lack of light. These factors would result in an increase in the likelihood of severe or serious harm outcomes (serious fractures, fractured skull and severe concussion).

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 2.0%	Severe 10.0%	Serious 30.0%	Moderate 58.0%
-----------------	-----------------	------------------	-------------------

Category	Band	Score
1 Legal duty to take action	High	10,000
Example Dwelling		1,319
2 Discretion to take action	Medium	1,000
National Average		159
	Low	100

Score
1,319

Scenario 2

After works meeting baseline indicators

Likelihood of Harm
1 in 100

Extreme	Severe	Serious	Moderate
2.0%	10.0%	30.0%	58.0%

Category	Band	Score
1 Legal duty to take action	High	10,000
2 Discretion to take action	Medium	1,000
	Example Dwelling	396
	National Average	159
	Low	100

Score

396

Scenario 3

After further improvements

Likelihood of Harm
1 in 200

Extreme	Severe	Serious	Moderate
2.0%	10.0%	30.0%	58.0%

Category	Band	Score
1 Legal duty to take action	High	10,000
2 Discretion to take action	Medium	1,000
	Example	198
	National Average	159
	Low	100

Score

198

Justification of Scoring

After works meeting baseline indicators

The internal staircase would benefit from the implementation of baseline indicators 12.4 and 14.2 and it is anticipated that 'controllable and accessible' lighting would require the light switches to be moved to more useful locations. Other baseline indicators would ensure that the slope and steps to the front are in good repair and provided with a greater level of frictional quality, with appropriate lighting. As the slope and step do not amount to 'four or more risers' as described by 12.4, the requirement for a continuous handrail is not applicable. As such, the likelihood score will still be higher than average.

Justification of Scoring

After further improvements

A well-anchored, structurally secure handrail should be provided to the right-hand side (ascending) of the slope and steps to reduce risk of falls. The hand grip should be designed to facilitate safe use, bearing in mind that it is in an external environment. Along the ramp, it should be 900–1100mm high, measured vertically from the floor; and to the right of the steps should be 900–1000mm high from the pitch line to the top of the handrail. An additional continuous handrail that is structurally sound should be provided to the internal staircase right-hand side wall (looking upwards to the staircase), including to the stair winder, fitted 900–1100mm high when measured from the pitch line to the top of the handrail. The handrail shall be fastened firmly to the wall, capable of supporting a load of 140kg and in good condition.

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](https://www.gov.uk) website.