

Radon in the Workplace

Contents:

- 1.0 Statement of purpose/objectives
- 2.0 Scope
- 3.0 Definition
- 4.0 Duty of care
- 5.0 Assessment of risk at the workplace
- 6.0 Information, instruction and training
- 7.0 Implementation
- 8.0 Compliance
- 9.0 Review of arrangements

1.0 Statement of purpose/objectives

This arrangement will assist in meeting Shropshire Council's core value to achieve more by working and learning together and also meet the legislative requirements. The main requirements are to create a safe working environment by ensuring effective control measures are provided for workplaces where elevated levels of radon gas may exist.

2.0 Scope

The scope of this arrangement is to promote an active safety culture and applies to all Shropshire Council employees and volunteers at work.

3.0 Definition

For the purpose of this arrangement radon is a naturally occurring radioactive gas that can seep out of the ground and may build up in indoor cellars & basement workplaces.

4.0 Duty of Care

Shropshire Council has a general duty of care to protect the health, safety and welfare of its employees so far as is reasonably practicable by ensuring safe workplaces.

5.0 Assessment of Risk at the Workplace

Managers and employees must work together to identify potential hazards and the subsequent risk from the working environment. A suitable and sufficient risk assessment must be carried out by the line manager prior to a cellar or basement area being used as a permanent workplace, this needs to take into account the completed Radon Checklist (see appendix 1).

6.0 Information, instruction and training

Appropriate information and training is an essential component in enabling employees to carry out work activities safely. Managers must ensure training needs for workers are identified. For example, during induction, appraisal or risk assessment. Information and guidance must be available to employees who are required to work full time in cellars, basements or poorly ventilated

ground floor rooms.

7.0 Implementation

Management guidance in the form of Frequently Asked Questions will be provided and updated to support the implementation of the arrangement.

8.0 Compliance

This arrangement will enable Shropshire Council to conform to statutory requirements and best current practice. Further references are provided in appendix 2.

9.0 Review of arrangement

This arrangement will be reviewed by the Health & Safety Team in three years.

Approving Body

Consultation	Health, Safety and Welfare Group October 2009
Approval	Health and Safety Forum
Revised	February 2018 (not published)
This revision	February 2021

Radon in the workplace

Frequently Asked Questions

Contents:

1. Roles and responsibilities - who does what?
2. What is radon?
3. Which workplaces may be affected?
4. What are the average radon levels in Shropshire?
5. What are the legal requirements for workplaces?
6. What is a radon survey?
7. What do the radon survey results mean?
8. What are radon in the workplace risk assessments?
9. Who should carry out radon in the workplace risk assessments?
10. What are the health hazards associated with radon?
11. Where can I get further training?
12. Where can I get further information?

Appendix 1

Radon in the workplace hazard checklist.

Appendix 2

Further information and references.

1 Roles and responsibilities - who does what?

1.1 Shropshire Council as a local authority employer, through its elected members, has ultimate responsibility for compliance with Health and Safety legislation.

1.2 The Chief Executive and Corporate Management Team are responsible for ensuring:

- The implementation of the Radon in the Workplace arrangement across all Directorates to ensure consistency of approach.
- The allocation of suitable and sufficient resources.

1.3 Assistant Directors are responsible for ensuring:

- The implementation of the Radon in the Workplace arrangement and that all employees are familiar with the contents of the arrangement as it is relevant to their workplace.
- Suitable levels of competency for managers, supervisors and employees, enabling them to undertake work activities safely.
- The allocation of sufficient Directorate resources to effectively manage Radon in the Workplace.

1.4 Line Managers/Supervisors are responsible for:

- Identifying working environments where potentially, elevated levels of radon gas may exist for example, in cellar or basement work areas.
- Ensuring risk assessments are undertaken for relevant workplaces and that control measures are communicated to the appropriate people.
- Assets Management Team if the outcome of the risk assessment indicates a survey or monitoring may be required.
- Ensuring that all employees receive appropriate information, relating to Radon in the Workplace arrangements.
- Reporting any Radon in the Workplace issues to the Strategic Assets Management Team and the Health and Safety Team.

- Ensuring, in conjunction with line managers, that risk assessments are reviewed annually or more frequently where there has been any significant change or incidents, and if new legislation requires change to best working practice.

1.5 The Health and Safety Team is responsible for:

- Providing advice and guidance to enable managers to carry out their duties and responsibilities effectively.
- Ensuring, in conjunction with line managers, that Radon in the Workplace is monitored on a regular basis via self-auditing and auditing processes.

1.6 Directorate Health and Safety Co-ordinators are responsible for:

- Ensuring Radon in the Workplace risk assessments that require control measures to be implemented, are reviewed by the Directorate Health and Safety Group.

1.7 The Strategic Assets Management Team are responsible for:

- The Update and maintenance of Shropshire Councils Radon File.
- Arranging radon surveys and,
- Providing passive detectors for radon gas surveys.
- Ensuring the requirements of the Building Regulations 2000 are met in regard to the protective measures provided to ensure action levels are not exceeded.
- Applying appropriate controls as required.

1.8 All Shropshire Council employees including volunteers are responsible for:

- Complying with the requirements of the Radon in the Workplace arrangement.
- Assisting with the risk assessment process, as required.
- Co-operating with the safe systems of work as identified to enable Shropshire Council to comply with its health & safety responsibilities.
- Reporting immediately to their line manager, any adverse incidents that have arisen as a result of radon in the workplace.

2 What is radon?

Radon (more properly known as radon-222) is a naturally occurring radioactive gas that can seep out of the ground and may build up at indoor workplaces. Radon comes from Uranium which occurs naturally in many rocks and soils. Radon concentration levels are measured in units called becquerels per cubic metre (Bq/m³). For workplaces, action must be taken to manage occupational exposure if the radon level exceeds 300 Bq/m³.

3 Which workplaces may be affected?

The highest levels are usually found in underground spaces such as cellars, basements, caves and mines. Well ventilated ground floor and higher storeys are unlikely to have significant radon levels.

3.1 Boiler and plant rooms located at basement level are not generally considered to be 'at risk' workplaces as they are not usually occupied by employees on a permanent basis.

4 What are the average radon levels in Shropshire?

The Health Protection Agency publish data and graphs indicating radon levels in the UK. The average level in Shropshire is 50 Bq/m³.

5 What are the legal requirements for workplaces?

- 5.1** Under the Health and Safety at Work etc, Act 1974, employers must, so far as is reasonably practicable, ensure the health and safety of employees and others who have access to their work environment.
- 5.2** The Management of Health and Safety at Work Regulations 1999 require the assessment of health and safety risks and this should include radon if a workplace is located underground or in a radon Affected Area. The risk assessment should include radon measurements for underground workplaces.
- 5.3** The Ionising Radiations Regulations 2017 (IRR17) come into effect where radon is present above the defined action level of 300 Bq/m³ when employers are required to take action to restrict resulting exposures.
- 5.4** The Building Regulations 2000 (England and Wales) supported by BRE report BR211 Require that buildings and extensions (workplaces and dwellings) constructed after 2000 in radon affected areas have protective measures installed during construction.
- 6** **What is a radon survey?**
Radon surveys should be conducted in any workplace where its location suggests that elevated radon levels may be found and the area is to be occupied on a full-time basis by employees. Inexpensive surveys can be carried out by leaving small plastic passive detectors in workplaces of interest. Measurements are made over a period of 3 months after which the detectors are posted back to the supplier who then provides the report with results. The Strategic Assets Management Team arrange all radon surveys.
- 7** **What do the radon survey results mean?**
Where workplace measurements show radon levels below 300 Bq/m³ then the only further action required is to decide when the risk assessment will be reviewed. The period of remeasurement might be in the order of once every 10 years. For occupied workplaces with radon levels above 300 Bq/m³ managers may need to take steps to manage occupational exposure or ensure the radon levels are reduced by engineered means. Control measures shall be implemented when radon levels of greater than 300 Bq/m³ are recorded.
- 8** **What are radon in the workplace risk assessments?**
Group will provide support in the identification and maintenance of any mechanical control measures required. Risk assessments will help identify radon issues to be addressed and confirm that the workplace can be occupied. The risk assessment would include:
- Location of the workplace
 - Means of ventilating the workplace
 - Length of time employees occupy the workplace
 - Control measures to protect the employees from radon exposure
 - Employee training needs.
- A hazard checklist is provided at Appendix 1.
- 9** **Who should carry out radon in the workplace risk assessments?**
The risk assessment should be carried out by line managers with the full co-operation of employees. A hazard checklist is provided in Appendix 1. The risk assessment should be reviewed annually or more frequently where there has been any significant change or incident. The outcome of the risk assessment will show if the workplace is suitable for permanent occupation by employees. Support from the Health and Safety Team is available, The Strategic Assets

Management Team will arrange for radon surveys when required.

10 What are the health hazards associated with radon?

Radon is now recognised to be the second largest cause of lung cancer in the UK after smoking. With a 25 times greater risk for cigarette smokers, than lifelong non-smokers¹ Lung cancer is also the most common cause of cancer related death in the UK with a 10-year survival rate of 5%.

11 Where can I get further training?

General workplace information and local induction training is provided by Directorates. If specific Radon training/information is required this will be coordinated by The Strategic Assets Management Team.

12 Where can I get further advice?

Further advice can be provided by the Health & Safety Team and the Strategic Assets Management Team.

13 Where can I get further information?

The Health Protection Agency <http://www.hpa.org.uk/HPA/Topics/Radiation/UnderstandingRadiation/>
The Health & Safety Executive <http://www.hse.gov.uk/radiation/ionising/radon.htm>
HSE Books <http://www.hsebooks.com>

Further references are given in appendix 2 below.

Appendix 1

Radon in the workplace hazard checklist

The generic checklist below may be used to help managers define the hazards and to undertake a Radon in the Workplace risk assessment.

Name of workplace _____

Managers name. _____

Date checklist completed _____

The Workplace	Yes/No	N/A
Is the workplace in a cellar or basement below ground level?		
Is the workplace poorly ventilated?		
Is the workplace occupied by employees on a full-time basis?		
<i>(The workplace is not suited to permanent occupancy or office use if the previous 3 responses were Yes)</i>		
Is a radon survey required? (if yes contact The Strategic Assets Management Team)		
Are radon extract fans installed?		
Can the workplace be naturally ventilated by the employees?		
The Employees	Yes/No	N/A
Are employees aware of the Radon in the Workplace arrangements?		
Supervision	Yes/No	N/A
Do you carry out regular supervisor checks on the workplace?		
Do you carry out regular checks on radon control measures?		
Information and Training	Yes/No	N/A
Do employees have information and training on radon in the workplace?		
Are employees aware of the Radon in the Workplace arrangements?		
Reporting systems	Yes/No	N/A
Are reporting procedures and systems in place?		
Other Hazards – Please list as necessary	Yes/No	N/A

Control measures:-

These may include;

Not using the cellar, basement area as office space.

Restrict the access to the cellar/ basement to short periods of work only.

Provision of mechanical ventilation (in consultation with The Strategic Assets Management Team).

The Strategic Assets Management Team monitor radon levels.

Appendix 2

Further information and references

- The Health and Safety at Work etc Act 1974
- The Management of Health and Safety at Work Regulations 1999
- The Ionising Radiations Regulations 2017 (IRR17)
- The Building Regulations 2000 (England and Wales)
- The Health Protection Agency (HPA)
- HPA-RPD, Indicative Atlas of Radon in England and Wales
- The UK Radon Map

Notes: (1) thebmj; Radon in homes and risk of lung cancer: collaborative analysis of individual data from 13 European case-control studies.

<https://www.bmj.com/content/330/7485/223>