

Radon Information Leaflet

What is Radon?

Radon is a naturally occurring radioactive gas emanating from many naturally occurring rocks and soils and can build up in indoor workplaces. Radon has no taste, smell or colour.

Radon and the radioactive elements formed during its decay can be inhaled and enter the lungs. Inside the lungs, these elements continue to decay and emit radiation. This radiation causes cell damage which can lead to lung cancer. Radon is measured in units of becquerels per cubic metre, Bq/m³ (i.e. concentration of radioactivity in air).

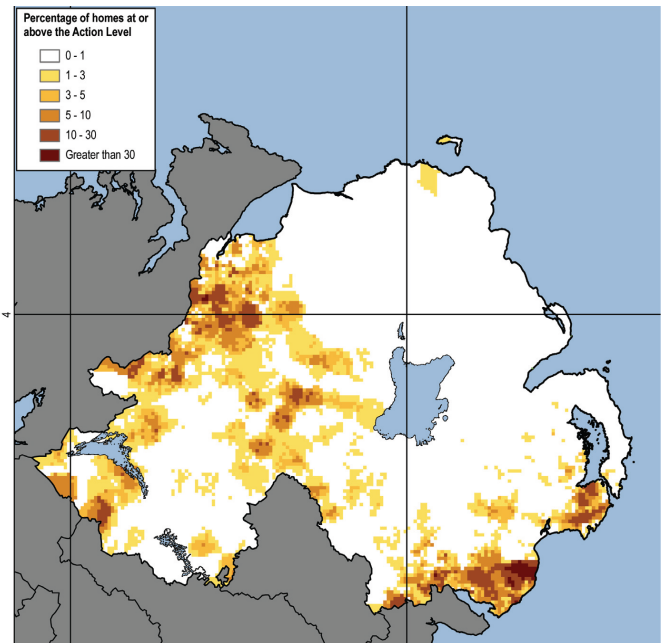
Radon contributes by far the largest component of background radiation dose received by the UK population and significant exposures are possible in workplaces.

Radon Affected Areas

Radon Affected Areas have been defined as parts of the country with 1% probability or more of present or future homes being above 200 Bq/m³.

The indicative atlas was published by the Northern Ireland Environment Agency:
www.daera-ni.gov.uk

Many parts of Northern Ireland have high radon levels. The darker the colour on the radon map the greater the probability of a high radon level in a building. To confirm the Radon Affected Area status of a workplace an employer may choose to request a radon risk report for their postcode area from www.ukradon.org (a small fee is charged).



Overall map of Radon Affected Areas in Northern Ireland (axis numbers are the 100 km co-ordinates of the Irish Grid)

Workplaces which may be affected

The highest levels are usually found in underground spaces such as basements, caves and mines. High concentrations are also found in ground floor buildings.

High radon levels have also been linked with workplaces incorporating water and air conditioning in which the pressure is unbalanced.

Legal requirements for workplaces - risk assessment

Under the Health and Safety at Work (NI) Order 1978, employers must, so far as reasonably practicable, ensure the health and safety of employees and others who have access to their work environment.

The Management of Health and Safety at Work (NI) Regulations 2000 require assessment of health and safety risks. This includes radon. See also: www.hse.gov.uk/radiation/ionising/radon.htm

Testing for radon

Radon measurement surveys are simple and inexpensive (approximately £25 per measurement). They are carried out by leaving small plastic passive detectors in rooms of interest. Public Health England can give further information on radon issues.

Measurements are usually made over a period of three months and levels calculated using seasonal correction factors. Monitors needed will depend on building size. Radon predominately affects the ground floor and basement areas.

Assessment of radon risks should include radon measurements in the following circumstances:

- All workplaces located in Radon Affected Areas
- All occupied (>1 hour per week average) below ground workplaces irrespective of Radon Affected Area
- During remedial action
- Review periodically

What will the test results mean?

The Ionising Radiations Regulations (NI) 2017 (IRRNI2017) apply where radon is present above the defined level of 300 Bq/m³ annually. Employers are required to take action to restrict radon exposure.

Reducing the radon levels to below 100 Bq/m³ is the ideal outcome for remediation works in existing buildings and protective measures in new buildings. This target level is being promoted in schools and other premises where occupancy by members of the public exceeds 2000 hours per year and may be reflected in future legislation.

In Radon Affected Areas employees could also be receiving significant exposure at home. Employers are strongly encouraged to recommend home testing to their employees who live in the Radon Affected Area.

| Level | Radon Concentration (Bq/m ³) |
|-------------------------|--|
| Regulatory surveillance | 300 annually |
| Average in homes | 20 |
| Average outdoors | 4 |

Practical control of radon levels in buildings

Controls measures normally involve installation of radon sumps and extraction pipe work (Please see Figure 1).

Other measures may include positive pressure ventilation, sealing gaps in floors and walls in contact with the ground and improved indoor ventilation.

Further information can be obtained from:

www.buildingcontrol-ni.com/

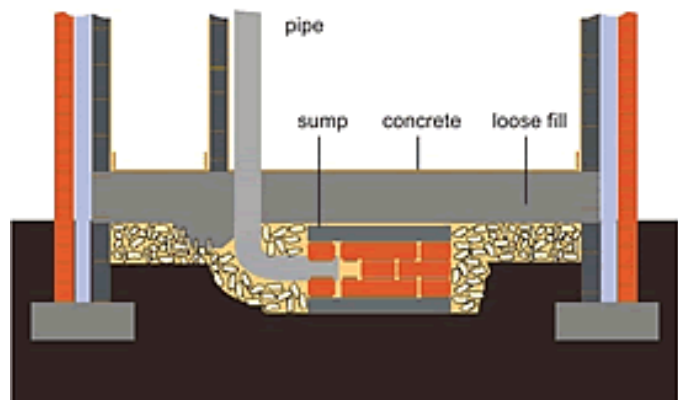


Figure 1

Reviewing radon risk assessment

As with all health and safety risk assessments, their applicability should be kept under review. The following guidelines are suggested:

| Radon level (Bq/m ³) | Frequency of re-measurement |
|----------------------------------|--|
| Significantly less than 300 | Once every 10 years |
| Just below 300 | More frequently than every 10 years or as advised by Public Health England |
| Above 300 | During remediation, immediately after remediation and significantly more frequently than every 10 years as advised by the appointed Radiation Protection Advisor (RPA) |

Useful links

www.hse.gov.uk/radiation/ionising/radon.htm

www.ukradon.org

www.buildingcontrol-ni.com/

www.gov.uk/government/collections/radon

www.ukradon.org/information/reducelevels