building control
northern ireland
protecting people & the environment

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.

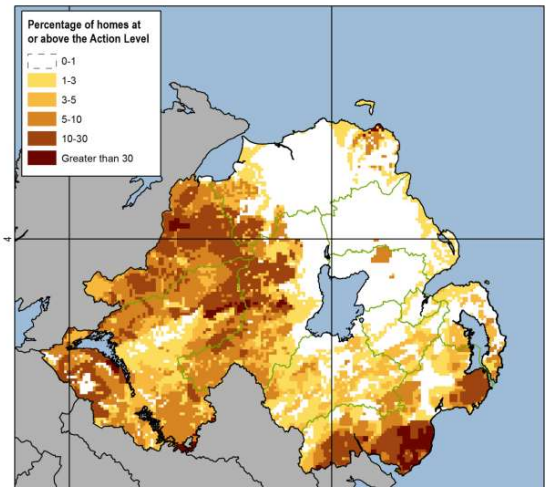
Radon has no taste, smell or colour. Radon and the radioactive elements formed during its decay can be inhaled and enter the lungs. Inside the lungs, these elements continue to decay and emit radiation. This radiation causes cell damage which can lead to lung cancer. Radon is measured in units of becquerels per cubic metre, Bq/m^3 (i.e. concentration of radioactivity in air).

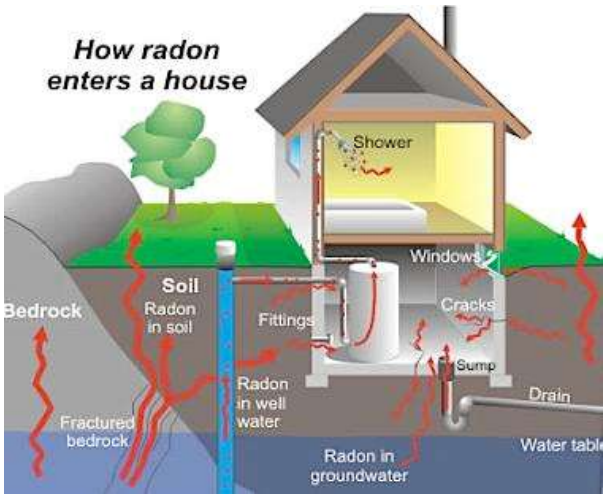
Radon contributes by far the largest component of background radiation dose received by the UK population and significant exposures are possible in workplaces.

Radon Affected Areas have been defined as parts of the country with 1% probability or more of present or future homes being above 200 Bq/m^3 .

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 view the map visit https://www.ukradon.org/information/ukmaps





How can you protect against radon?

The best way to avoid the effects of radon is to take measures to prevent the gas from entering your house. The two most common means by which this can be done is:

Radon Membrane: Lay a sheet of material that the radon cannot pass through over the ground beneath the house. This can be an impermeable membrane, such as 1200 gauge polythene. A membrane will reduce the radon level by approximately 50%.If an impermeable membrane is to be effective, it is very important that there are no gaps at the edges, or where service pipes enter the house. Measures should be taken to ensure the membrane is not ruptured should the floor slab settle.

Radon Sump: This is a void created beneath the house, with a pipe to the outside, to prevent the radon getting into the dwelling. A sump will reduce the radon level by approximately 90%, if fitted with a continuous running fan. Under the current regulations there is no requirement to fit the fan, but it enables the homeowner to initiate sub floor de-pressurisation in the future, if it is discovered that the radon level in the dwelling is high.

Table 3.1 Radon Protection Required

Radon risk shown on the radon map referred to in para 3.7 (probability of radon in a dwelling exceeding the Action Level)	Radon protection[1] required
0 – 1%	No protection required
1 – 3% 3 – 5% and 5 – 10%	Zone 1 measures (radon membrane required)
10 – 30% and greater than 30%	Zone 2 measures (membrane plus provision of subfloor depressurisation e.g. a sump and stub duct)

Note:
(1) BR 211 Radon: publication (referred to in para 3.11) provides guidance on determining the level of protection that is appropriate, along with details of protective measures for new buildings, and extensions etc.

Extract from Amendment Booklet AMD 7 (April 2022)

Guidance on protective measures is given in the BRE produced publication, BR 211 Radon: guidance on protective measures for new buildings.

If you need any further information on radon gas, please call your local councils Building Control Service for their advice.