

# Building in radon affected areas

## What is Radon?

Radon is a naturally occurring radioactive gas. It is a product of the breakdown of uranium and radium and is present in most rock types and soils everywhere. Some rock types including granite, are particularly rich in uranium and produce high levels of this naturally occurring gas.

## Why radon should be controlled?

Radon gas permeates through cracks and fissures in the rocks and subsoil and disperses into the atmosphere. When buildings are constructed above certain ground types radon cannot disperse as easily and may pool and seep into the building, thus posing a risk to health. Inhalation of radioactive gas significantly increases the risk of lung cancer.

Radon levels in the air are measured in Becquerels per cubic metre (Bq/m<sup>3</sup>).

Remedial action is recommended where a radon level greater than 200Bq/m<sup>3</sup> is detected.

## Radon affected areas

Surveys have been carried out to predict the likelihood of high levels of radon being present in a dwelling due to their geographical location.

Radon affected townlands within the Lisburn City Area:

- Annahilt (Village)
- Boardmills
- Dromara
- Drumbo (South)
- Hillsborough

This is not an exhaustive list and Building Control Services will be able to give information and advise on the location of radon affected areas. The Service will also be able to advise on protective measures that can be undertaken to reduce the risk from radon in new dwellings and certain extensions.

## Requirements of the Building Regulations

Regulation C2 of the Building Regulations (Northern Ireland) 2000 requires that:

“Measures shall be taken to prevent or limit the ingress of radon from the ground into any dwelling situated in a zone marked on the map.” The map is shown in Schedule 3 of the above Regulations.

Radon preventative measures apply to the following:

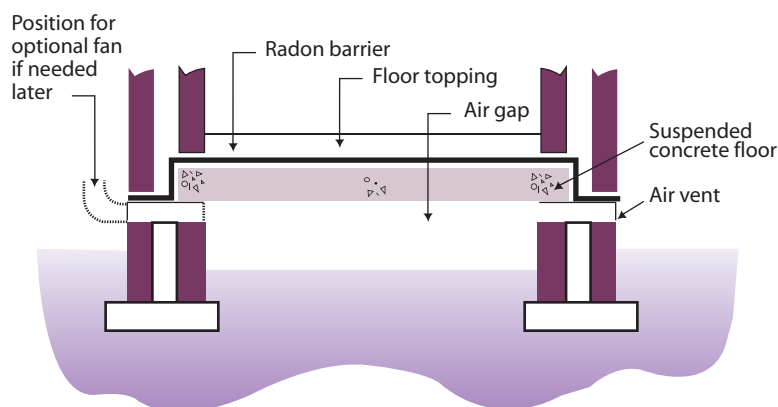
- New dwellings
- Extensions of 30m<sup>2</sup> or more to existing dwellings
- Extensions or alterations of existing dwellings, which currently have radon preventative measures

## How radon can enter dwellings?

Radon can enter dwellings through small cracks and gaps in solid floors, construction joints, gaps in suspended concrete or timber floors, gaps around service pipes and wall cavities. Such cracks are impossible to avoid and as pressure inside a dwelling is often lower than the outside, radon gas is drawn in.

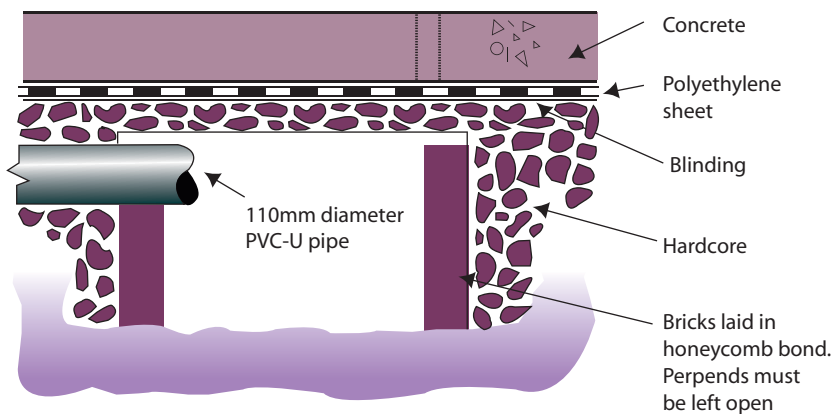
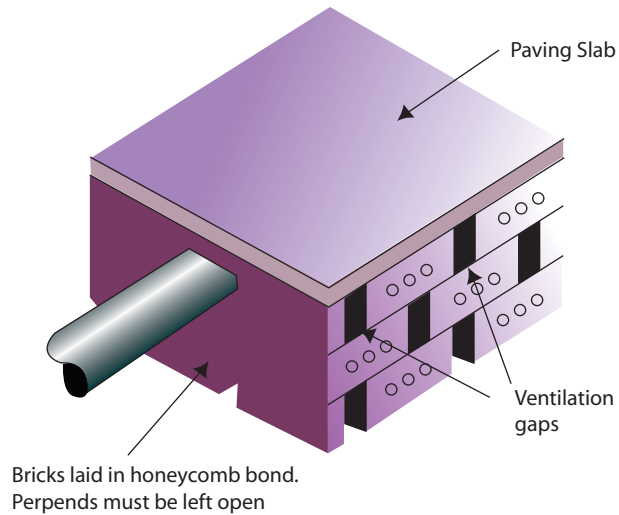
## How can the effects of radon be avoided?

The best way to avoid the effects of radon is to prevent or limit the gas entering your dwelling. A passive or primary protection involves a continuous gas impermeable membrane across the building, such as 1200-gauge polythene over the ground beneath the dwelling. The taping of joints, edges and where service pipes pass into the dwelling ensures a continuous membrane.



Primary protection in a suspended concrete floor

An active or secondary protection involves the provision of effective ventilation below the ground floor. The void under a suspended floor should be well ventilated and if required a 'sump' and powered extract fan beneath the floor should be fitted to draw out radon into the atmosphere.



Secondary protection in an in-situ concrete floor

Other active protection measures are now being developed, such as house pressurisation systems. Building Control Services will consider these in addition to primary protection in new buildings and extensions.

For further information on radon gas and its health effects, contact the:

**Health Protection Agency  
Radiation Protection Division**

**T. 0800 614529 or 01235 822622  
W. [www.hpa.org.uk](http://www.hpa.org.uk)  
E. [radon@hpa-rp.org.uk](mailto:radon@hpa-rp.org.uk)**

**If you require any further advice please contact...**

**Building Control Services  
2nd Floor  
Lisburn City Council  
Island Civic Centre  
The Island  
Lisburn BT27 4RL**

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