

**Introduction:** This knowledge management article provides additional guidance on Radon contamination. It is important that all workmanship carried out during construction is completed in accordance with the relevant tolerances.

## Radon Contamination

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### Background

Radon is a naturally occurring radioactive colourless and odourless gas which is formed in small quantities by radioactive decay wherever uranium and radium are found. It can move through the subsoil and so into buildings. It comes from minute amounts of uranium that occur naturally in all rocks and soils. Some parts of the Country, notably the West Country, have higher levels than elsewhere. Exposure to high levels for long periods increases the risk of health issues. To reduce this risk all new buildings, extensions and conversions, whether residential or non-domestic, built in areas where there may be elevated radon emissions, may need to incorporate precautions against radon.

### Radon map of the UK

The British Geological Survey (BGS) in co-operation with the UK Health Security Agency publishes a radon potential map for United Kingdom. The current map took effect from 1st December 2022. All plots that commenced construction from this date will be required to have radon protection measures installed in accordance with this map.

### Guidance

**Section 1** – Ground conditions in our Technical Manual provides guidance on the need for Site Investigation reports. One of the Functional Requirements in this Section is that “Site investigation and remedial measures must meet the relevant Building Regulations.” I.e. those applicable in England and Wales, Scotland and Northern Ireland.

It is therefore necessary on sites where we are undertaking either Warranty or Building Control, to ensure adequate steps have been taken to identify Radon. The documents referenced at the end of this article, can also assist with identifying the measures to be taken.

Whilst we will always assist the customer, it is their responsibility to provide evidence of the actual risk from Radon when we have identified the potential for Radon, often though this can reduce their costs as the maps may identify a High Risk, requiring expensive works, whereas a property report may find a Low risk or indeed none at all.

A report may identify one of three outcomes:

1. No protective measures required.
2. Basic protective measures – usually a membrane barrier and passive ventilation.
3. Full protective measures – usually a combination of a protective barrier and sub floor mechanical ventilation system.

## Recommendations

The public are more aware of the need for Radon protection, due in part to Local Authority Searches and Home Buyer Reports. Testing of completed properties by BRE has found deficiencies due possibly to lack of initial identification, poor specification and/or poor detailing on site.

Therefore robust methods of construction and thorough checks must be undertaken: To remedy a failed Radon barrier would be a very costly procedure.

Further recommendations can be found in **Section 1** – Ground conditions of our Technical Manual.

Guidance on practical protective measures has been published by the BRE as Report BR 211 Radon: guidance on protective measures for new dwellings.

## **References:** (Valid at: February 2023)

BRE

BR 211: Radon: guidance on protective measures for new buildings

Good Building Guide 73 (2008) Radon protection for new domestic extensions and conservatories with solid concrete ground floors

Good Building Guide 74 (2008) Radon protection for new dwellings. Avoiding problems and getting it right

Good Building Guide 75 (2009) Radon protection for new large buildings

*Every care was taken to ensure the information in this article was correct at the time of publication. Guidance provided does not replace the reader's professional judgement and any construction project should comply with the relevant Building Regulations or applicable technical standards. For the most up to date Premier Guarantee technical guidance please refer to your Risk Management Surveyor and the latest version of the [Premier Guarantee Technical Manual](#).*