



Rialtas na hÉireann
Government of Ireland

National Radon Forum 2023

Clayton Silversprings Hotel, Cork, 4 October 2023

Department of Housing, Local Government and Heritage



Technical Guidance Document C

Site Preparation & Resistance to Moisture

2023 Amendment

Three Sections



Section 1 Site Preparation and Site Drainage

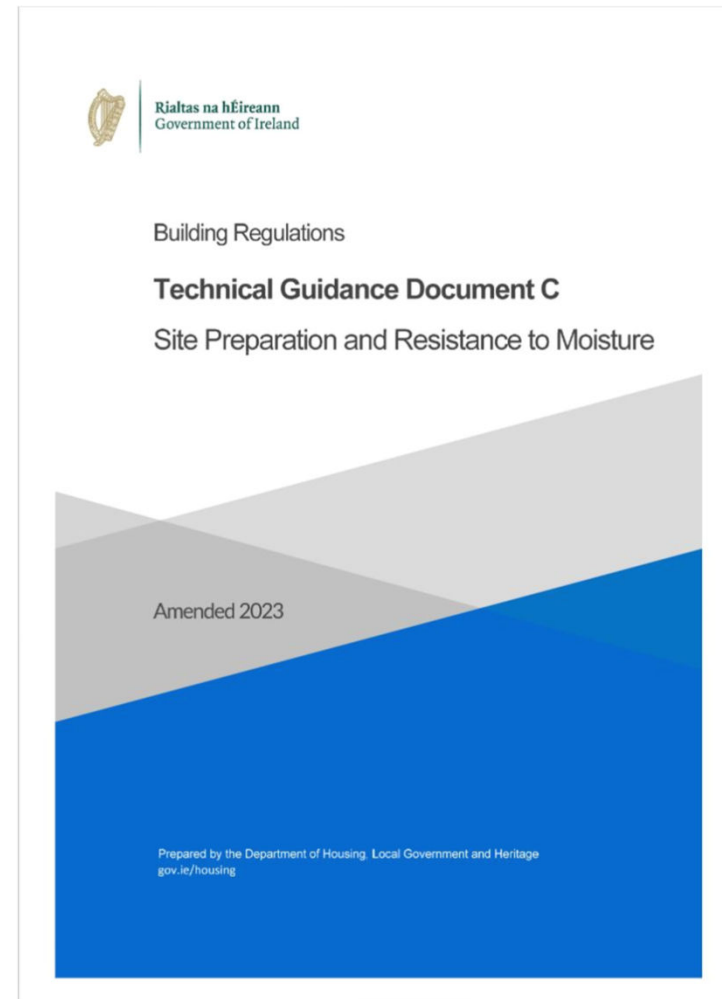
- Organic Material
- Site Drainage

Section 2 Dangerous Substances

- Investigation of Site
- Remedial Measures
- Radon
- Landfill Gas

Section 3 Resistance to Weather and to Ground Moisture

- Introduction
- Ground Supported Floors
- Suspended Timber Ground Floors
- Suspended Concrete Ground Floors
- External and Internal Walls -Moisture from the Ground
- External Walls - Moisture from Outside



Building Regulation C3



Reasonable precautions shall be taken to avoid danger to health and safety caused by substances (including contaminants) found on or in the ground to be covered by a building.

In this Part -"contaminant" includes any substance which is or could become flammable, explosive, corrosive, toxic **or radioactive** and any deposits of faecal or animal matter;

Section 2.7 Radon National Reference Levels



Dwellings: The National Reference Level (NRL) for long-term exposure to Radon in dwellings is 200 Becquerels per cubic metre, or **200Bq/m³**. Above this level the need for remedial action should be considered.

Workplaces: The Radiological Protection Act 1991 (Ionising Radiation) Regulations 2019 (S.I. No. 30 of 2019) transposes the EURATOM Basic Safety Standards Directive – Council Directive 2013/59/EURATOM and sets a National Reference Level for Radon Gas in Workplaces of **300Bq/m³** annual average concentration.

Dwellings or other long-stay residential buildings



Clause 2.10

- (a) **High Radon Areas:** measures should be taken to protect the building from Radon in the ground.

For example, in the case of a noncomplex building of normal design and construction, a **fully sealed membrane** of low permeability over the entire footprint of the building and a potential means of extracting Radon from the substructure such as a **standby Radon sump** or sumps with connecting pipework or other appropriate certified systems should be provided.

Dwellings or other long-stay residential buildings



Clause 2.10

(b) Areas other than High Radon Areas: the building should be provided with a potential means of extracting Radon from the substructure, should that prove necessary after construction.

For example, in the case of a non-complex building of normal design and construction, the provision of a **standby Radon sump** or sumps with connecting pipework or other appropriate certified systems should be adequate.

Radon Protection Other Buildings



Clause 2.11

The designer should consider the provision of measures to protect buildings against high Radon concentrations.

In the absence of specific guidance, provisions similar to those in 2.10 may be adopted.

2023 Amendment to TGD C



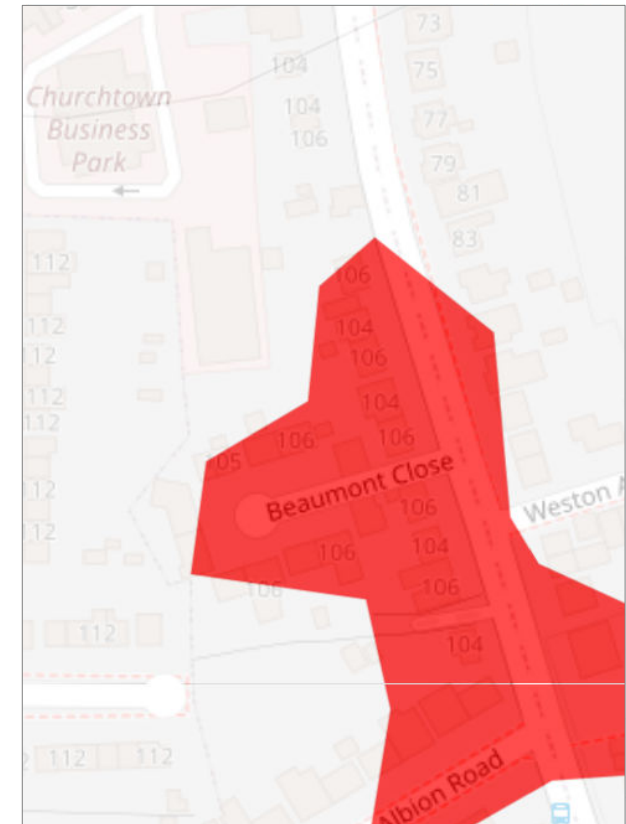
- In 2022 the Environmental Protection Agency (EPA) published a high spatial resolution Radon Risk Map of Ireland identifying High Radon Areas, based on the results of research undertaken in Phase 1 of the National Radon Control Strategy.
- The new map has been incorporated into TGD C in accordance with High Priority Action 34 of the Mid-Term review of the National Radon Control Strategy 2019-2024.



2023 Amendment to TGD C



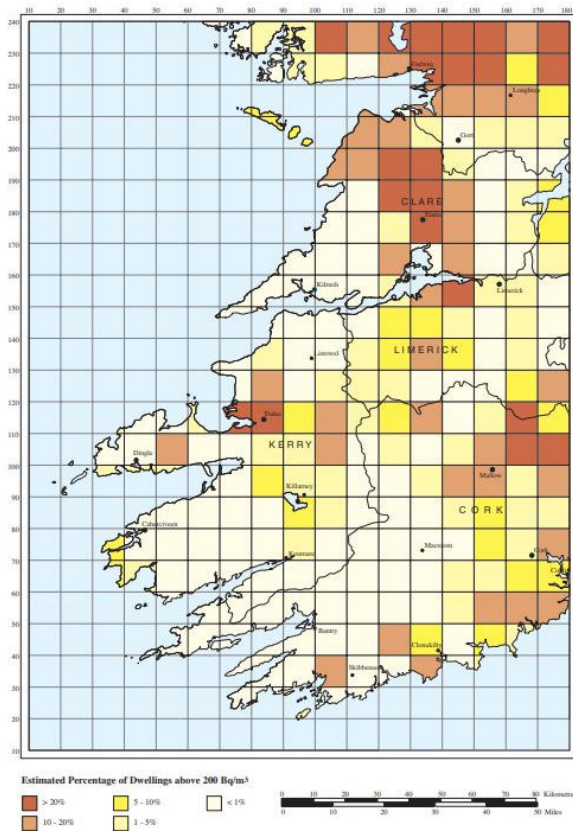
- The digital map is accessed via the interactive Radon.ie website maintained by the EPA. To establish a location's radon risk, designers enter the GPS coordinates of a building or a location into the digital map.
- Any queries in relation to this map are directed to the EPA via that website.
- An image of the radon risk map is reproduced, with the kind permission of the EPA, in TGD C.
- Where any part of a building falls within a High Radon Area, the entire building should be regarded as falling within that area.



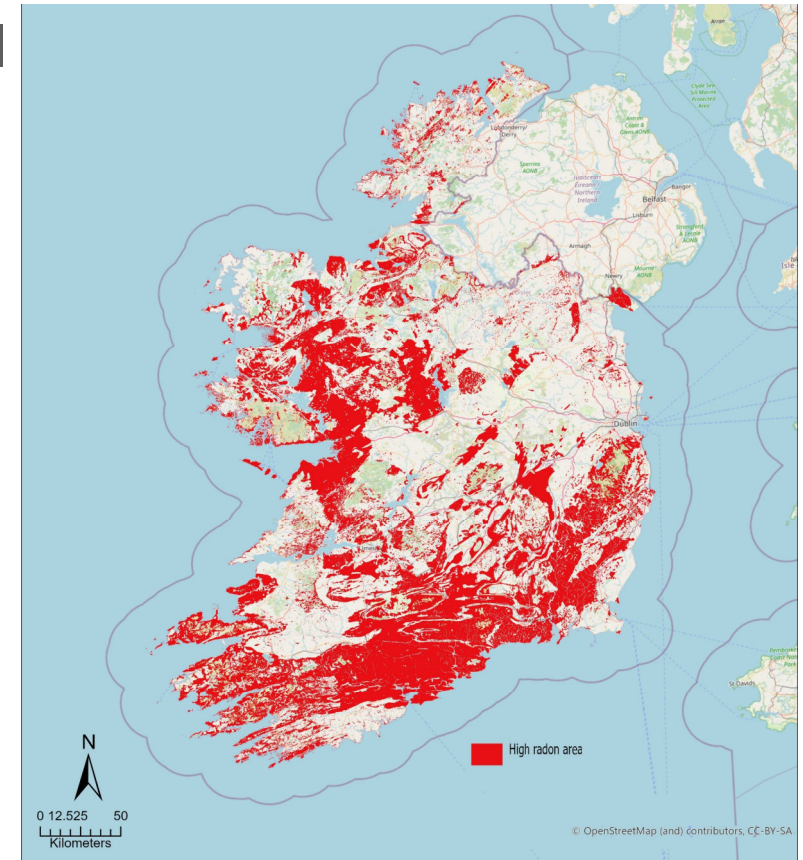
TGD C – radon map comparison



Sample of old map



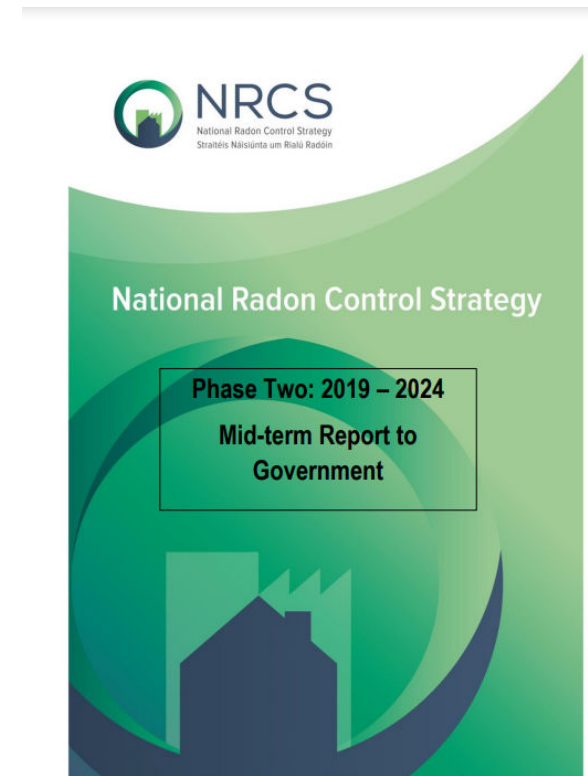
New digital map



2023 Amendment to TGD C



- The new map will apply to works that commence on or after **1 October 2023**, works commenced before that date will continue to work to the old map.
- This completes the action assigned to DHLGH under NRCS Phase 2 in relation to the radon map in accordance with Action 34 of the Mid-Term review of the National Radon Control Strategy 2019-2024.
- A full review of Part C is ongoing and is currently awaiting research on the ventilation of NZEB dwellings and the application of new Met Éireann climate change related weather data to various NSAI construction standards.





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Questions?

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