

Trends in building ventilation requirements and inspection in Ireland

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SUMMARY

This VIP paper provides a background regarding building ventilation regulations and inspection requirements in Ireland. Ventilation requirements for new buildings are provided in the National Building Regulations, which apply to the whole of the Republic of Ireland.

The Building Regulations came into force in Ireland on the 1st June 1992. The Building Regulations 1997 - 2022 set out the legal requirements in Ireland for the construction of new buildings (including houses), extensions to existing buildings as well as for material alterations and certain material changes of use to existing buildings. The Building Regulations are set out in a series of functional requirements, listed under the Second Schedule to the Regulations.

The related Technical Guidance Documents (Parts A - M respectively) provide technical guidance on how to comply with the Regulations in practical terms. Part L gives the requirements relating to the Conservation of Fuel and Energy in buildings and Part F gives the requirements relating to Ventilation.

The impetus for the amendments in 2019 were two fold, the increased focus on improving the energy performance of the building stock, and recognition of the important role of ventilation to optimise health and indoor air quality in energy-efficient buildings.

1 NATIONAL TRENDS

In Ireland, ventilation requirements for new buildings (and major renovations) are outlined in the Building Regulations, Part F (S.I. No. 263/2019 Building Regulations (Part F Amendment) Regulations 2019 (1) published by the Irish Department of Housing, Local Government and Heritage. Ventilation requirements for existing buildings, undergoing a retrofit are published by the National Standards Authority of Ireland in NSAI S.R. 54:2014&A2:2022 Code of Practice for the Energy Efficient Retrofit of Dwellings (2).

1.1 New Buildings

The Building Regulations apply to the design and construction of a new building or an extension, or a major renovation to an existing building. Part F of the Building Regulations applies to ventilation and was last revised in 2019 and has two Requirements, F1 and F2. F1 specifically refers to means of ventilation for people in buildings, and F2 refers to provisions to prevent excessive condensation in a roof.

A Technical Guidance Document F (TGD F) (1), provides guidance in relation to the application of Part F of the Building Regulations and the minimum provisions to meet ventilation requirements in non-complex buildings of normal design and construction with different ventilation strategies. Section 1.2 of TGD F deals with ventilation methods for new dwellings and extensions including continuous mechanical extract ventilation, mechanical ventilation with heat recovery and natural ventilation. Section 1.3 of TGD F deals with ventilation methods for buildings other than dwellings, in particular, offices and car parks.

An additional guidance document on the Installation and Commissioning of Ventilation Systems for Dwellings-Achieving Compliance with Part F 2019 (3) is referenced in TGD F. It provides installation guidance for ventilation systems as defined by TGD F and provides guidance on how to achieve compliance with Part F of the Building Regulations.

1.2 Existing Buildings

In the case of material alterations or change of use of existing buildings, the adoption without modification of the guidance in TGD F may not, in all circumstances, be appropriate. In particular, the adherence to guidance, including codes, standards or technical specifications, intended for application to new work may be unduly restrictive or impracticable.

NSAI S.R. 54:2014 & a2:2022 is a Code of Practice for the Energy Efficient Retrofit of Dwellings that provides guidance for these dwellings (2). This guide provides specific guidance on ventilation in existing dwellings undergoing an energy retrofit.

2. REQUIREMENTS ON VENTILATION OF NON-RESIDENTIAL BUILDINGS

Requirements for the ventilation of non-residential buildings are outlined in Part F of the Second Schedule to the Building Regulations (1), which provides for ventilation requirements in buildings other than dwellings. Such Regulations are mandatory.

A general ventilation rate of 10l/s per occupant for buildings is deemed appropriate where there are no significant pollutant levels. This rate is based on controlling body odours with low levels of other pollutants. Where there are significant levels of other pollutants, adequate outdoor air supply can be achieved by following the calculation method provided in CIBSE Guide A.

3. REQUIREMENTS ON THE INSPECTION OF VENTILATION SYSTEMS

Requirements for inspection of ventilation systems are mandatory (for residential dwellings) and are covered in the National Standards Authority of Ireland Ventilation Validation Registration Scheme. Checks and measurement methods broadly follow the guidance given in I.S. EN 14134:2019 Ventilation for buildings – Performance testing and installation checks of residential ventilation systems.

KEYWORDS

Ventilation Regulations Standards Guidance Inspection

2 REFERENCES

1. Department of Housing, Local Government and Heritage, (Technical Guidance documents A-K <https://www.gov.ie/en/collection/d9729-technical-guidance-documents/?referrer=http://www.housing.gov.ie/housing/building-standards/tgd-part-d-materials-and-workmanship/Technical-guidance-documents#> (accessed February 2024)
2. S.R. 54:2014 Code of practice for energy efficient retrofit of dwellings (Amendment 2). https://shop.standards.ie/en-ie/standards/s-r-54-2014-a2-2022-877610_saig_nsai_nsai_3214983/ (accessed February 2024)