



GUIDANCE SHEET FOR NEW DWELLINGS.



This leaflet provides guidance on how to attain compliance with The Building (Amendment) Regulations (Northern Ireland) 2006, **Part F1, Conservation of fuel and power in dwellings.**

In order to achieve compliance with Technical Booklet F1, the following Criterion must be met, (but should not be read in isolation), when constructing a dwelling.

CRITERION 1 – ACHIEVING THE TER

- TER to be submitted with application
- Calculating the DER for the actual dwelling
 - The DER shall be calculated using SAP 2005
 - Two DER calculations are required. One for the design and one on completion after and alterations and air permeability is measured
 - $DER \leq TER$
 - SAP to highlight all critical design features in compliance
 - SAP assessment, DER and TER to be forwarded to Building Control before approval AND within 5 days of completion
- Secondary heating
 - Will be considered in the DER calculation
- Lighting
 - Will be considered in the DER calculation
- Low or zero carbon energy sources
 - Will be considered in the DER calculation

CRITERION 2 – MINIMUM ACCEPTABLE STANDARDS

- U-values
 - Elements to comply with Table 2.2, where column (a) gives the area-weighted average U-value for each element and column (b) gives the maximum U-value of any individual element or part of an element, such as meter box
- Air permeability
 - The maximum air permeability is $10\text{m}^3/(\text{h}\cdot\text{m}^2)$ @ 50 Pa
 - On small developments of not more than 2 dwellings, pressure testing may be avoided if a) similar construction has been used within 12 months or b) use a value of $15\text{m}^3/(\text{h}\cdot\text{m}^2)$ @ 50 Pa when calculating DER, although compensating provisions may need to be made
- Minimum acceptable standards for fixed building service systems
 - Heating and hot water systems and insulation, (see heating leaflet)
 - Mechanical ventilation systems are to be designed and installed to GPG 268 and comply with Table 2.3
 - Mechanical cooling systems to be not less than Class C in “the Energy Information Regulations 2005”

- Fixed internal lighting to have energy efficient light fittings in most frequented areas at a rate of a) one per 25m² of floor area or (b) one in every four; whichever is the greater
- External lighting which is permanently fixed to the dwelling and is controlled and powered from the dwelling shall have a maximum output of 150W per fitting and automatically switch off when not required and in daylight

CRITERION 3 – LIMITING THE EFFECTS OF SOLAR GAIN

- SAP assessment to consider solar gains and design as CE 129 “Reducing overhang – a designers guide” and “BS 8206-2:1992 Lighting for buildings”

CRITERION 4 – QUALITY OF DESIGN, CONSTRUCTION AND COMMISSIONING

- Must be designed and constructed so that $DER \leq TER$
- Building fabric
 - Thermal bridges must be avoided at insulation layers, gaps, joints and edges
 - Dwelling to be constructed to “Accredited construction details” <http://www.planningportal.gov.uk> or
 - BRE IP 1/06 “Assessing the effects of thermal bridging at junctions and around openings in the external elements of a building”
 - Demonstrate compliance with above documents by site inspection, report, checklist and copy to Building Control
- Air permeability and air pressure testing
 - The DER is calculated using the design air permeability specified by the designer. Where testing is carried out it must be in accordance with ATTMA publication “ Measuring air permeability in building envelopes” and carried out by qualified persons.
 - When accredited construction details are used, air pressure testing shall be carried out on a unit of each dwelling type selected by Building Control
 - Compliance is shown by measurement not greater than 10m³/(h·m²) @ 50 Pa and using rating to establish $DER \leq TER$
- Design, installation and commissioning of heating and hot water systems
 - Fixed services to be designed, installed, commissioned and handed over in efficient working order
 - Notice of above to be provided to Building Control

CRITERION 5 – OPERATING AND MAINTENANCE INSTRUCTIONS

- The building owner shall be given information, operation and maintenance instructions to enable operation and maintenance of fixed building services
- Instructions to be readily understandable and explain the operation of systems including timing and temperature controls and maintenance requirements
- An energy rating for the dwelling is to be calculated and displayed internally

APPENDIX A - Tables

Table 2.2 **Limiting U-values {W/(m²·K)}**

Element	(a) Area-weighted average U-value	(b) Maximum U-value
Wall	0.35	0.70
Floor	0.25	0.70
Roof	0.25	0.35
Windows, roof windows, roof lights and doors	2.20	3.30

Table 2.3 **Limiting performance values for mechanical ventilation systems**

System Type	Performance
Specific Fan Power (SFP) for continuous supply only and continuous extract only	Not greater than 0.8 W/(l/s)
SFP for balanced system	Not greater than 2.0 W/(l/s)
Heat recovery system	Not less than 66%

APPENDIX B – Definitions

TER – Target carbon dioxide Emissions Rate.

This is the minimum acceptable energy performance for a new building. It is the mass of carbon dioxide produced by the building and measured in kg per m² of floor area per year. The target calculation includes heating, hot water, ventilation and lighting.

DER – Dwelling carbon dioxide Emissions Rate.

For the building to demonstrate compliance a DER must be calculated and must be equal to or less than the TER.

SAP – Standard Assessment Procedure.

The SAP rating is based on the energy costs associated with space heating, water heating, ventilation and lighting, less cost savings from energy generation technologies. It is adjusted for floor area so that it is essentially independent of dwelling size for a given built form. The SAP rating is expressed on a scale of 1 to 100, the higher the number the lower the running costs.

The method of calculating the energy performance and the ratings is set out in the form of a worksheet, accompanied by a series of tables. The methodology is compliant with the Energy Performance of Buildings Directive. The calculation should be carried out using a computer program that implements the worksheet and is approved for SAP calculations (BRE approves SAP software)

Energy efficient light fitting.

Including the lamp, control gear etc to have a luminous efficiency greater than 40 lumens per circuit-Watt

DISCLAIMER:

This document has been prepared by Down District Council, Building Control Services, as an aid in compliance with the new Part F1 Regulations. It should be used solely as guidance and should not be treated as a “Deemed to Satisfy” document.

NOTE: The above requirements are in ADDITION to the existing legislation.