building control northern ireland

GUIDANCE NOTE

Standards and Performance Panel

Topic: **Questions answered by DFP**

Ref No: **X/07/01**

Date: **April 2007**

Technical Booklets F1

1. ***Do new-build dwellings require Target carbon dioxide Emissions Rate (TER) to be provided with the application?***
   A Yes. See Technical Booklet F1 paragraph 2.18

2. ***In what form does the TER calculation have to be provided for Building Control?***
   A The report output by the National Calculation Methodology should be provided.

3. ***Who will be responsible for writing the 'instruction manual'? Is it sufficient to hand over operating manuals? What is acceptable as being 'readily understandable by the occupier?***
   A A document is required that is specific to the particular building and its services systems. It should give an overview of each system and give clear easy instructions on how to operate each system as a whole to reduce CO_2 emissions. It is not simply a folder containing all the user manuals for the systems in the building. It may refer to user manuals for more detail. It is up to the industry to determine who should produce this document. The Heating Engineer could be a suitable person.
   CIBSE Guidance Document A 2006 provides details of the requirements.

4. ***Who will we accept as a competent person?***
   A This is a matter for Building Control to decide in relation to the service. It depends on what function is to be carried out by the "suitably qualified person". In relation to services and commissioning a commissioning engineer would be appropriate; for air pressure testing a tester who is registered with or approved by the British Institute of Non-destructive Testing; for calculations on costs and payback a Quantity Surveyor; and for matters relating to SAP or SBEM a qualified assessor would meet the requirement.

5. ***With a block of apartments is an overall SAP rating required for the building and does each individual apartment require a SAP rating?***
A Each apartment must be assessed and provided with an individual SAP Energy Rating Notice, but some may have a DER greater than the TER as long as the floor area-weighted average DER is equal to or less than the average TER.
See Technical Booklet F1 paragraph 2.24

6. ***How will changing the shape, for a fixed area, affect the rating?***
A The SAP Energy Rating needs to be calculated for each individual building. Even if the window area on each elevation remains unchanged, the DER will increase if the area of the wall increases (when the plan is elongated). Compensating measures would then be required.

7. ***Will fixing rain cladding to the façade of a block of apartments require Part F1 to be applied?***
A The wall elements to which the cladding is to be applied will have to be upgraded to the U-value in Technical Booklet F1 Table 3.3 column (b).

8. ***Would constructing a pitched roof on a block of apartments, over an existing flat roof, attract full implication of Part F1?***
A The roof will have to be upgraded to the U-value in Technical Booklet F1 Table 3.3 column (b).

9. ***Is there a U-value for a conservatory roof, under Technical Booklet F1 Table 3.1?***
U-values are detailed for windows, roof windows and rooflights: Is it to be incorporated it in this section?
A At present, use the values in the table for windows, roof windows & rooflights. It is recognised it will be difficult for polycarbonate roofs to comply and it is being investigated what an acceptable U-value would be.
Guidance will be re-issued when it is available.

10. ***Does Decanting accommodation come under Part F1 – NIHE use these for temporary accommodation?***
A These are exempt – in Schedule 1 of the Regulations see Clause 8(d) “A movable dwelling including a tent, caravan, shed or similar structure used for human habitation”

11. Will open flued fires still comply with the Regulations?

A Yes. They are included in the SAP calculation and compensatory requirements may be required.

12. What constitutes a 'change to a buildings energy status'?

A This is where a building changes from being an unheated building or part thereof to a heated building.

See the definitions of the following terms in the Regulations – "CHANGE TO A BUILDING'S ENERGY STATUS means any change which results in a building becoming a building to which the energy efficiency requirements of these Regulations apply where previously it was not;" "Energy efficiency requirements means the requirements of Regulation F2" – [Conservation measures]

13. *Does the provision of a wind turbine automatically constitute a change to the buildings energy status?*

A No.

14. Listed Buildings – are they a special cause? Do they require special treatment?

A They are 'historic buildings' and are treated as such. These do require special consideration – see Technical Booklet F1 & F2 par 3.4 and 3.5. Guidance is also given in DOE Environment & Heritage Service publication "Historic buildings & energy efficiency. A guide to Part F of the Northern Ireland Building Regulations"

15. A refurbishment is ongoing, along with an extension to a property (for which we have received an application), during which the windows are replaced. We do not require an application for the windows, but the windows must comply with all of the current Building Regulation requirements. On site we are aware that the windows are not meeting the amended Part F, what action can we take, as we do not have an application?

A DFP are considering this issue and will inform us of their opinion.

Air Pressure Tests & Accredited details

16. Upon completion of building works, the builder is (and always has been) obliged to give Building Control 5 days notice to enable the carrying out of a Completion Inspection. Now, in addition to the above, the builder is also obliged to provide Building Control with a copy of the TER and DER/BER plus SAP calculations. The

builder shall within these 5 days undertake an air pressure test (if required), enabling them to produce the SAP & DER; he shall also post the SAP on the building (perhaps in the meter cupboard). When this is complete, Building Control can consider the regulations to be satisfied and issue a Completion Certificate. Is this the correct interpretation?

A There is no reason why the air pressure test cannot be carried out well before completion; this can be done as soon as the building is airtight.

17. ***Where weather conditions are unfavourable and it is not possible to undertake air pressure testing within the 5 days, is the builder guilty of an offence?***

A Completion Certificate should not be issued until the tests, calculations and Energy Certificate are completed. It may be preferable to undertake the air tightness test after all the services have been installed.

18. ***If a builder changes bricklayer/tradesmen following air pressure testing of the 'sample' house types, and Building Control have grave concerns that the quality and air tightness have reduced, is there any facility to require further testing?***

A No. If the developer satisfies Technical Booklet F1 Par.2.46 – 2.54, Building Control cannot require additional houses to be tested.

19. ***Are air-tests required for extensions?***

A Generally no – if 'equivalent carbon approach' is used then an air test must be carried out.

20. ***When considering the signing off of accredited details in a self-build project, who could we consider as being acceptable to confirm that satisfactory checks were made on site, (In the situation where there is no main contractor, sub-contractors for the different trades)?***

A Consider an approach agreed between the self-builder and the Building Control surveyor. For instance, involving photographic evidence supplied by the self-builder, and then agrees the signing off of the accredited details. Any similar approaches whereby Building Control can assure that the works have been built to the accredited details maybe adopted.

21. ***If a builder provides site quality check sheets and Building Control have concerns about their validity or accuracy what powers do they have?***

A Technical Booklet F1 paragraph 2.45 and Technical Booklet F2 paragraph 2.56 state "The builder shall demonstrate that an appropriate system of site inspection is in place to ensure that the construction standards achieve the required level of consistency." The operative word is "demonstrate" it will be up to Building Control as to whether or not they accept a proposed system of site inspection.

22. ***Can a designer choose to use the default value in SAP 2005, rather than use accredited details or the BRE paper BR 106?***

A Technical Booklet F1 paragraph 2.44 says that either accredited details or details that give an equivalent level of performance should be used. The default value in SAP for thermal bridges is approximately twice the figure for the accredited details so it would be to the applicant's disadvantage if this were selected in the SAP calculation.3

23. ***The backstop assumption for air-tightness is 10 - if the applicant designs to 7 but testing proves the actual value to be 8; What do we do, as this will probably fail, but 8 is still better when assuming 10?***

A Re-calculate the SAP using 8; if TER is > DER then this is OK.

If DER>TER then designer must either reduce the air permeability, by fixing leaks, and demonstrate compliance by a re-test, or they must make other improvements to give a DER/BER that is equal to or less than the TER.

A figure of 7 should not be difficult to achieve in a well-designed building so if the major leakage paths are identified with a smoke wand these should be sealed before the re-test is carried out. See Technical Booklet F1 paragraph 2.52.

24. How do we communicate about accredited details to builders?

A It is acknowledged that DFP's Building Regulations Unit should have a link on their website to accredited details. Building Control have provided this link on their website.

25. How do permanent ventilation openings to the external air impact on Part F1?

A It has no impact on SAP. Such openings are sealed for the air tightness test.

26. Do you block up the fireplace when carrying out air-tightness tests?

A Yes. The ATTMA document "Measuring air permeability of building envelopes 2006" states that "Permanently open uncontrolled natural ventilation openings should be temporarily sealed".

Renovating thermal elements

27. Is it 25% of the surface of each wall within a room, all walls in each room, or is it all walls in a building when calculating the need to upgrade?

A Where 25% or more of a thermal element is being renovated, reasonable provisions for upgrading of that element are required.

The following scenarios help to clarify:

- I am replacing the living room floor in a dwelling as the joists have rotted due to the ingress of damp. The living room floor area is more than 25% of the total floor area of the dwelling. I only need to insulate/upgrade the living room floor to the new standards. It would be unreasonable to require upgrading of all the ground floors in the dwelling, as this would mean pulling out and refitting bathroom fittings and kitchen etc.
- I am replastering more than 25% of the internal face of the external wall of a room. This wall is a thermal element so I need to insulate and dryline the inside face of the internal wall of this room. It does not trigger the upgrading of the internal face of any other room on which no work is taking place.
- I am re-rendering more than 25% of the face of a wall. This wall is a thermal element so I have to insulate that face of it to a reasonable standard, which I propose to do by external insulation. The works only trigger the insulation of the face of the wall on which I am working. They do not trigger the insulation of other walls facing the same direction nor does it trigger the insulation of other elevations

28. "Renovation to a thermal element" - This is a new category of building work, introduced by the Amended Regulations. It is therefore necessary to ascertain if "renovation" constitutes a structural alteration, bearing in mind the definition of "structural alteration" given in Reg. A2 (1). It seems clear that many operations - such as the replacement of roofing material, which, up to now, have been considered to be structural alterations - could also come under the definition of "renovation". This

situation needs to be clarified, as work, which can be classed, as a structural alteration will come under the "no new or greater contravention" provision of Reg. A7.

A It is felt there is no conflict and this has been researched with the legal team, the new regulation A8A over rules A7.

Controlled Services

29. ***Where an existing heating system is to be extended (by the provision of additional radiators, but not the replacement of a boiler), it is not controlled by par. 3.37.***
Is it appropriate under the guidance given in 3.39 to 3.42, to require:
i. The existing boiler controls are upgraded to current standards?
ii. Commissioning, which may include servicing of the existing boiler?
iii. Notice of commissioning ii above?
iv. New pipework to be insulated?
A Technical Booklet F1 does not require work listed in points i, ii, or iii but new pipework should be insulated to the new standard.
(TRV's should be requested on each new radiator on the extended system.)

30. ***How do you determine the efficiency of a boiler?***
A Boilers can be checked using the Government's SEDBUK on-line database [http://www.boilers.org.uk/], which gives the seasonal energy efficiency values for all boilers currently on the market. (It is hoped to get a link to from the BCNI Website to the SEDBUK database.)

31. ***When commissioning heating and hot water systems (par 2.55) what must be commissioned, and how and who can provide the Certificate?***
A See the Domestic Heating Compliance Guide for details appropriate to the fuel used. For dwellings the heating engineer would normally do this and provide the Compliance Certificate.

32. ***The availability of low energy lighting as required by the regulations is concerning and may cause a difficult in domestic situations where they are not readily available.***
A The following website address shows example of low energy light fittings, which are readily available, the website is as follows http://www.lightingassociation.com/eeproducts.php

Additional information from the Standards & Performance Panel will follow.

Building Notice

33. ***Is a Building notice validly submitted if it is not accompanied by a TER, DER, SAP and supporting documents?***

A No. See schedule 2 Part B (4) of the Regulations which states – "Where a building notice relates to the erection of a dwelling, or the creation of a dwelling by a material change of use, an applicant shall provide calculations for the Target carbon dioxide Emissions rate (TER) and the Dwelling carbon dioxide Emissions Rate (DER) used for design purposes for each dwelling."

Change of Use

34. Only part F2(a)i applies to change of use in table A9 as amended. Thus F3 does not, and consequently a DER/TER is not required, is this the correct interpretation?

A Yes; but SAP programme (or SBEM) is used if the Equivalent Carbon Target Approach (see F1 paragraph 3.36 or F2 paragraph 3.71) is adopted.

Exempt Conservatories

35. ***To be classified as exempt, a conservatory does not need to be thermally separated or to have on/off controls to the heating system, please confirm*.**

A In the Regulations Schedule 1 Class 7(a) which lists a conservatory not exceeding 30 sq m as being exempt where it is an **addition** to an existing building. Schedule 1 has not been amended.
The building must be thermally separated from the conservatory. If the conservatory is exempt then the heating is also exempt and consequently does not have to have any controls.

Additional information provided by DFP

- Condensing boilers with a minimum efficiency of 86% will be the norm in both new builds and a replacement - there is some allowance for not using a condensing boiler, but only where it is not technically feasible.

- Cost of condensing boilers, the DFP feel that suppliers are aware of the changes and are stocking condensing boilers, the

approx cost difference between a traditional boiler and condensing is £230

- Misprint in technical booklet F1, paragraph 3.37(a) “efficiency not less than two percentage points lower” should now read “efficiency not more than two percentage points lower”

- Para 3.38 – at present this doesn’t allow a change from gas to oil because of the carbon difference, but an amendment will shortly be provided which will allow an oil boiler to have a 4% variance in lieu of 2%.

Technical Booklet F2

1. ***Is the list of consequential improvements (Par.3.74 & Table 3.7) intended to be prioritised in the numerical order as set out in this Table, or does it matter which items the designer adopt?***
   A The list is in indicative priority order; the designer should assess which are the most cost effective measures for the particular building.

2. ***For non domestic applications to which consequential improvements apply - if these consequential improvements change the Energy status of a the original building, will SBEM calculations then be required for the improved original extension***
   A Consequential improvements do not change the energy status of the building.

3. ***Technical Booklet F2 sets out special provisions for modular/portable building where the intended life on a specific site is to be less than two years. However, it is not clear if a TER/BER is required for a mobile classroom, when first erected and also when such a building is relocated? (classed as the erection of a building under the Regulations). Temporary classrooms, in particular, are frequently moved and guidance is sought on the requirements in respect of TER/BER ratings in such circumstances.***

   A <u>New classroom built since Nov 2006 as follows:</u>
   Mobile classrooms require a TER & BER when first erected
   When they are re-erected on the same site – they do not require a TER & BER
   When relocated to another site then require a TER & BER, consider orientation

Classrooms constructed prior to Nov 2006 as follows:
Take a pragmatic approach, as they are unlikely to comply, consider reasonable upgrades if possible
NB Any extension to modular building, the Regulations do apply.

Fit out of shell buildings - Where existing building, erected under the previous Part F or even earlier, are now to be fitted out for occupation, with heating/air conditioning, etc installed, is it correct that only Section 3 of TB F2 applies? Where existing walls, roofs, etc have poor U-values, the provisions of Section 3 do not require the upgrading of thermal elements in such circumstances – is this correct? Obviously, this sort of work will decline and disappear as time goes on but it is a fact that there are many shell buildings, shops, etc which are vacant at present awaiting fit-out works.

A Shell application submitted prior to Nov 2006
Only applies to anything new being provided, if not affecting the thermal element, then no requirement to upgrade thermal elements
If providing a new heating system, then Part F2 will apply

Shell application received after Nov 2006
The most onerous requirements apply

Part H – Spiral & Helical Stairs

1. ***There is now no deemed to satisfy standard listed in the Schedule to Part H non-domestic stairs. The consensus view was, provided suitable alternative means of achieving vertical access is provided (i.e. a lift and a suitable straight flight) adjacent to a spiral or helical stair would be acceptable, subject to complying with the relevant standards in BS 5395, as it could be viewed as a suitable alternative method of achieving compliance.***

2. ***The amended schedule has removed the deemed to satisfy BS5395 for stairs in public buildings. Is it the Departments intention/desire to prohibit these, and if so, is this because they are considered to be unsafe?***

3. ***If a proposal complied with the vertical access provisions (a lift and***
a suitable stair), would it be reasonable to permit an 'additional' feature spiral/helical stair, provided the traditional stair is in close proximity?
A The District Council will require a convincing argument that a spiral or helical stair will, in the circumstances of the application, provide a safe and suitable means of vertical access for all persons who would reasonable expect to use that stair.

Part L

1. ***There does not appear to be the power within Schedule 2 to permit a Council to require a builder to provide Certification of flues or heating appliances.***
   A Regulation A10 (Giving of notices and deposit of plans) relates to any person who intends to carry out building work. The use of Schedule 2 depends on which one of the two Parts is relevant. Under Schedule 2: Part A, Rule D 2(a) particulars regarding services or fittings should be given.

   If the question is intended to relate to the Provision of Information (in respect of a hearth, fireplace, flue or chimney) as required by Regulation L5, the Notice is to be affixed to a suitable place in the building but not necessarily submitted to Building Control.

2. ***It remains unclear who is responsible for certification of flues, the builder who builds it, or the developer. Who is responsible for testing its operation if the appliance is not installed at completion stage?***
   A If following the deemed-to-satisfy provisions in the Technical Booklet L - see the references to the Gas Appliances (Safety) Regulations 1995 and certification by a Notified Body.
   See also References to the 'independent certification' of certain chimneys, flues & fluepipes and Technical Booklet L paragraph 1.45 regarding testing.

3. ***If a homeowner replaces an oil tank, is a Building Regulation application required?***
   A Yes. Giving notice of the replacement of an oil storage tank is required under Regulation A10 [as amended by the Building (Amendment) Regulations (NI) 2006 and the Building (Amendment No 2) Regulations (NI) 2006].

4. ***Part L requires permanent ventilation to be installed where an open fire is installed. This is presumably to provide sufficient air supply for the fire when it is lit but the provision of an opening which cannot be closed introduces the certainty of excessive heat loss at all times. This must surely contradict the provisions of Part F, which seek to limit heat loss through the building fabric whilst allowing for controllable ventilation to rooms and workplaces, etc. The probability is that house occupiers will block these sizeable openings up***

completely. Is it possible that some version of adjustable ventilation would be acceptable?

A Permanent ventilation is permanent and should be enforced as such, can be underfloor, through an external wall directly into the room with the appliance, but can also be through an external wall in a another room, which is linked to the room with the appliance

5. ***Regulation L1 (3) - 'Regulation L6 shall only apply to a liquid fuel storage tank and connecting pipe work outside the building which serves a fixed combustion appliance within the building'***

   A For this regulation the term building is to include shed, garage, prefabricated housing, therefore L6 shall apply.

6. ***Technical Booklet L Table 5.1 (Note 2) - 'Fire walls shall be imperforate non combustible walls or screens'. Can the metal screening, which NIHE has been fixing alongside oil tanks, be considered as a fire wall?***

   A The firewall must meet the requirement of 30 minutes insulation, integrity and stability. A sheet of metal on its own would not comply, but would be required to be treated with a FR product (Any proposed fire wall construction - fire performance should be substantiated 'by test'?)

7. ***It is traditional in NI for provision to be made for the installation of open fires in new dwellings. In speculative developments, builders usually leave the choice of fireplace, appliance etc. to the purchaser of the house. In carrying out TER/DER calculations, is it acceptable to assume that any open fire that is capable of burning smokeless fuel can also burn wood and thus be classed as a "dual fuel" appliance?***

   A Yes, however it is important to remember that you cannot burn wood in a smokeless zone, therefore where this is used in the SAP calculation, then it is only acceptable in those areas which are not smokeless zones. (See SAP 2005 Table 12 footnote (b) and www.uksmokecontrolareas.co.uk)

   It may also be useful to speak to your Environmental Health Department.

Additional information provided

- Regarding the positioning of the fire valve, the advice of the DFP is to follow the British Standard, therefore it would be required to be fitted 1m away from the appliance, which would be external in the housing used by the NIHE. In this case it could be placed below ground or use some other means of protection to avoid vandalism

- Integrally bunded tanks are the norm, however if someone wishes to build a bund, they would need to provide a maintenance agreement for the bund.

Part R

Clarification of requirements for Toilet Accommodation:

- In a building other than a dwelling, at each location where sanitary accommodation is provided at least one unisex wheelchair accessible unit (as Diagram 6.1 - Technical Booklet R) should also be provided. In a building other than a dwelling where space is severely restricted and if only one unit of sanitary accommodation is to be provided for all users then it should be suitable for all people (as Diagram 6.2 – Technical Booklet R)

- In addition to the above, where traditional separate sex accommodation is being provided, a compartment complying with Dig. 6.3(a) Technical Booklet R should be incorporated.

- Where there are more than 4 cubicles provided for each sex, then an extended cubicle (as Diagram 6.3b Technical Booklet R) should be provided together with an ambulant cubicle (as Diagram 6.3a Technical Booklet R). This does not exclude an applicant putting forward a convincing argument that, in their circumstances, an extended cubicle would not be appropriate.

- All other cubicles in non-domestic buildings should comply with Dig. 6.3(c) Technical Booklet R.

1. ***The requirement for lifts in two storey buildings is welcomed by Building Control, however, there is some concern that in existing two storey buildings or very small buildings that this can be onerous. The allowance for lifting platforms instead of a full passenger lift is an area where we would appreciate some guidance, when considering the regulations it would appear that it would be in exceptional circumstances that a lifting platform would be acceptable.***

   A Each case must be viewed individually and there is no further guidance available at this stage. In time, due to appeals made, there will be some guidance.

   It is important to note that the facilities provided are required under Part R of Building Regulations for everyone, not just persons with disabilities.

   Cost is not to be a consideration.

   Vertical circulation is required to all levels, regardless of size or usage.

   Plant rooms do not require a lift, if that is all that is on that level.

2. ***What was the intention when LRV became part of the Building Regulations? Is it the expectation that Building Control will not complete a building until fully decorated?***

   A At approval stage the requirements for LRV are to be acknowledged on the drawing and if possible, a finishes schedule obtained. The advice was to ensure that building was decorated, prior to completing the building.

'This guidance has been produced as an interpretation of a specific requirement of the Building Regulation for use by Building Control Personnel. There is no legal obligation for Building Control to adopt this guidance.'