



Department of
**Finance and
Personnel**

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Building Regulations (Northern Ireland) 2000

Amendment
of

PART L

COMBUSTION APPLIANCES AND FUEL STORAGE SYSTEMS

Formerly known as –

“HEAT PRODUCING APPLIANCES AND
LIQUEFIED PETROLEUM GAS INSTALLATIONS”

FINAL REGULATORY IMPACT ASSESSMENT

August 2006

SCOPE

1. This Regulatory Impact Assessment (RIA) relates to the amendment to Part L; “*Heat producing appliances and liquefied petroleum gas installations*”, which has been retitled “Combustion appliances and fuel storage systems”, of the Building Regulations (Northern Ireland) 2000. A completely new Technical Booklet L is also provided in support of the amended regulations. This new title better reflects the scope of the revised Part L and is in line with the equivalent part; Part J in the England and Wales Building Regulations.

OBJECTIVE

2. The objective of the amendment is to improve the safety of people in and around buildings containing combustion appliances and to safeguard the environment without imposing disproportionate bureaucracy and costs on building owners, developers or the district councils who’s role it is to enforce the building regulations. The intention is also to simplify and clarify some of the existing provisions.
3. This RIA only focuses on those changes that are deemed significant as many of the proposed amendments provide clarification of existing provisions and therefore tend to be cost neutral. Furthermore, where the existing provisions have included references to standards that have been updated, any associated changes in costs are considered very minor and are not included in this RIA.

BACKGROUND

4. The Building Regulations (Northern Ireland) 2000, as amended, apply to most building work and are intended principally to ensure the health, safety, welfare and convenience of people in and around buildings. The provisions contained in Technical Booklet L are deemed-to-satisfy the requirements of the regulations in Part L, Combustion appliances and fuel storage systems.
5. The phrase “combustion appliances” has been introduced into the title of this Part to better reflect the fact that the regulations only apply to those appliances that generate heat by burning solid fuel, gas or oil. The Building Regulations do not address electrical heating systems.
6. There are two new requirements in the Building Regulations in relation to the fuel storage systems for central heating oil and liquefied petroleum gas (LPG). The first is for the protection of a liquid fuel storage system from a fire in a nearby building on the same site or a fire from across the boundary. The second is for the protection of the environment against pollution caused by a leakage from a domestic central heating oil storage system. As a consequence of this the more inclusive phrase ‘fuel storage systems’ has been used in the title of the Part.
7. The existing requirements for the air supply to the combustion appliance are being extended to cover a wider range of appliances. An adequate supply of air is essential to ensure the safe and efficient operation of the appliance and the efficient working of the flue. A further requirement will be the fixing of a notice providing information on the performance capabilities of the relevant fireplace, flue etc.

8. The current Technical Booklet L came into operation as part of the April 1991 amendment to the Building Regulations. Since then there has only been a minor revision in 1998, which came into operation as part of the April 1999 amendment to the Building Regulations.
9. The existing provisions in the current Technical Booklet L are now somewhat out of touch with the development of combustion appliances. For this reason Technical Booklet L has been completely rewritten to reflect both the new and extended requirements of Part L. The provisions in the new Technical Booklet have been updated to incorporate the latest British and European Standards and other references as well as changes to current good working practice.

RISK ASSESSMENT

10. The installation, operation and maintenance of a combustion appliance and fuel storage system in accordance with the current standards is essential to ensure the health, safety and welfare of people in or about the building. There are many risks associated with the use of a combustion appliance and its fuel storage system. The major ones are set out below -
 - The risk of death and serious injury from carbon monoxide poisoning, (in NI in 2004 there were 11 deaths in the home from accidental poisoning by, and exposure to, noxious substances).
 - The ill health effects of nitrogen oxide accumulation.
 - The fire hazards presented by storing liquid fuel in external above ground tanks close to buildings.
 - The potential of domestic oil storage tanks causing pollution to the environment as a result of accidental spillage or failure of the tank.
 - The danger of installing a combustion appliance on a hearth and/or connecting it to a flue that was not designed to withstand the temperature of the appliance or the products of combustion, (in NI in 2004 there were 9 deaths in the home from smoke, fire and flames).
11. The Government has been persuaded that the public is becoming more exposed to the risks mentioned above in terms of the frequency with which they are encountered in everyday life and the consequences of the threat. This situation is arising through a combination of fuel competition, product innovation which has increased the varieties of products and their efficiencies in ways that make them more dependent on flue performance, raised expectations of comfort, the popularity of "living flame" appliances, and an increasing volume in the replacement and retrofit market.

OPTIONS

12. The Department considered three options.
 - **OPTION 1** - Do nothing
 - **OPTION 2** - Negotiate with industry and others to foster launching and/or improving voluntary schemes of self-regulation. This could include a parallel initiative on self-certification by competent persons. The self-certification initiative would be intended to encourage improvement of competency and would therefore be beneficial. The main product manufacturing trade associations produce guidance material for their members, which is usually very good. However, combustion appliance installation work is undertaken by a large number of firms of all sizes, including self-employed individuals who, in the main, do not subscribe to these trade organisations, so the market is very fragmented. Attempts to reach and positively affect this spectrum would be fraught with difficulty.
 - **OPTION 3** – Comprehensive amendment of Part L of the Building Regulations (Northern Ireland) 2000 and its supporting deemed-to-satisfy Technical Booklet.

BENEFITS

OPTION 1 – Do nothing

13. If no action is taken there are no benefits.

OPTION 2 - Voluntary self-regulation

14. The National House Building Council (NHBC) and Zurich Municipal Warranty Schemes provide assurance to the purchasers of new homes that the builder has achieved compliance with all statutory requirements as well as other extra features provided to increase consumer's confidence. For work on existing buildings and extensions some builders may offer guarantees regarding quality and durability of work that may, or may not, be underwritten by insurance companies. One of the main stimuli for this revision is the changed nature of the market, where about half the work is refurbishment or refitting of existing buildings.
15. All of these schemes depend upon the existence of the Building Regulations as well as other regulations along with the notification, inspection and enforcement procedures associated with them. Whilst warranty and guarantee schemes might be extended to encompass national health and safety criteria, the scheme operators and builders continue to prefer statutory regulation as the best method for determining what is an adequate provision.

OPTION 3 - The amendment of the Building Regulations Part L.

16. Analysis of a sample of coroner's reports describing the causes of domestic carbon monoxide (CO) poisonings indicate some of the amendment measures (specifically, improvements in relation to water heaters, ventilation, flue siting and testing/sweeping of new and existing flues) will act to reduce the number of fatalities. It is estimated that

about a 33% of the deaths from these causes could eventually be avoided. It is also thought that there will be a similar reduction in the number of non-fatal CO poisonings.

17. It is not possible to estimate the benefits of reducing the incidences of ill health due to exposure to lower levels of CO and nitrogen oxides (NO₂) because of the lack of data. However, it is thought that improving the Building Regulations to make them more readily applicable to fireplace installation and refit work in existing buildings would have a significantly beneficial impact on the problem.
18. Examination of fire incidents suggests that the revised regulations have the potential to reduce those attributed to defective appliances by up to 50% and chimney fires by up to 25%. The Government is also persuaded that the measures covering the location of fuel storage systems would be a prudent intervention in an area where many heating contractors lack expertise in recognising potentially dangerous locations.
19. Table 1 below summarises the range of reductions in risk, which could be expected, once the new and amended provisions have been operating for a time. Damage to assets is not strictly a matter for the Building Regulations but it is an important ancillary consideration.

| Table 1: Possible reductions per annum | |
|-----------------------------------------------|-------------------------|
| Incidents | Likely reduction |
| Fatal casualties | 3 |
| Non – fatal casualties | 16 |
| Property damage | 22 |

20. The actual benefits would be somewhat higher because these figures do not take account of the reductions in non-fatal CO poisonings and adverse health effects of NO₂ as well as the reduced incidence of unsound workmanship.
21. In respect of the existing Regulations much of the reduction in hazards and the risks of exposure to them will occur as a direct result of improved, extended and updated deemed-to-satisfy provisions and the new requirement to supply information notice plates. Equally important however is the benefit achieved through the publication of clearer and more relevant provisions for builders and specialists in the new build and refurbishment industries and the raised awareness achieved by the recommendations for testing.
22. The new regulation and associated deemed-to-satisfy provisions will lead to a reduction in oil pollution incidents and a reduction in the costs of cleaning up. A study of leaks from domestic oil storage tanks has been developed based upon -
 - the total existing stock of domestic oil storage tanks (In Northern Ireland there are approximately 670,000 homes and it is estimated that up to 75% of these have oil - fired heating systems with no statistically significant level of bunding);
 - the number of tanks sold annually to the domestic market, (assume 75% of the 10,450 new dwellings, other than flats or maisonettes, per annum will have oil fired heating);

- the current rate of pollution incidents and their environmental impact; and
- the fact that a non-bunded tank installation is five times more likely to leak than a bunded installation.

Based on this it is estimated that in Northern Ireland the new regulation L7 will prevent approximately 4 oil pollution incidents per annum, which will have a significant environmental impact.

BENEFITIAL COSTS

23. The beneficial costs given below are based on standard values for the costs of death and serious injuries, figures derived from insurance claims and estimates of clean-up costs for different categories of oil pollution incidents
24. **Option 1** - There would be no discernible monetary benefit.
25. **Option 2** - It is considered that some benefits will accrue gradually in response to concerted efforts to improve voluntary self-regulation but the amounts and rates of increase are difficult to forecast. It is likely that these benefits would only amount to a small proportion of those forecast for Option 3, as set out below. It is suggested that the amount would not rise beyond about £500,000 per year for the UK as a whole.
26. **Option 3** - The forecast monetary benefits of the incidents avoided from Table 1, plus the environmental benefits for the prevention of oil pollution incidents, are given in Table 2. The valuation of some of these benefits has been determined using the NI costs for deaths & Injuries as supplied by the Department for Regional Development -
- Fatal Injuries - £1,249,890;
 - Serious Injuries - £140,450; and
 - Slight Injuries - £10,830.

The benefit calculation for oil pollution incidents is based solely on the clean-up costs avoided. The impact on commerce and the environment, in particular, is difficult to quantify in monetary terms but could be significant depending on the circumstances.

| Table 2: Estimated annual monetary benefits of adopting Option 3 | |
|-------------------------------------------------------------------------|--------------------------------------------|
| Type of incidents (avoided) | Annual financial benefit (£million) |
| Fatal casualties (3) | 3.75 |
| Non-fatal casualties (16) | 2.24 |
| Property damage (22) | 0.04 |
| Total health and safety benefit (£ million) | 6.03 |
| Oil pollution (4) | 0.06 |
| TOTAL BENEFIT (£ million) | 6.09 |

BUSINESS SECTORS AFFECTED

General impact

27. The amendments will affect any business associated with the design and installation and inspection of combustion appliances and fuel storage systems. Such as -
- Designers;
 - Builders;
 - Gas, oil and solid fuel heating engineers;
 - Fireplace installers, chimney lining engineers;
 - Manufacturers of fireplaces, flue lining and chimney components; and
 - District Councils who enforce the Building Regulations.
28. They will be affected in the course of constructing both new buildings and refurbishment work. However, it should be noted that, as most of the suppliers and competent installation companies operating in NI will already be following “best practice” methods for design and construction the additional cost for compliance with the revised Part L will be significantly less than the costs incurred whenever similar provisions were first introduced in England and Wales in 2002. Indeed any associated changes can be considered cost neutral for the purposes of this RIA.
29. The proposed amendments would also affect district councils, who will see an increased frequency of submissions including details of proposed combustion appliance installations. However, the revised Technical Booklet L will give the enforcers better information which will make their assessment of each application easier. The new requirement to have a notice plate declaring the performance capabilities of the hearth and flue for each appliance will facilitate site checks.
30. It is estimated by the district council staff responsible for this work that the revised requirements will initially add only an average of 30 minutes to the normal time required to assess submissions for new building works. This additional time should reduce in time as staff become more familiar with the changes and may well be offset by a marginal increase in fees associated with an acceptable increase in construction costs.

Limited impact on businesses involved with larger installations

31. Part L applies to all building work associated with the installation of combustion appliances. However the amendment is expected to have little impact on businesses engaged in the construction of industrial process plants including incinerators and larger space heating installations. Larger installations are those installations having combustion ratings in excess of 50 kW output if fired with oil or solid fuel, and 70 kW (net) input if fired with gas. These are covered by regulations made under the Health and Safety at Work Order (Northern Ireland) 1999 which also apply during service. These larger installations are more thoroughly commissioned as more experienced designers and contractors are normally used to closely supervise the installation, commissioning and testing of the works.

COMPLIANCE COSTS

32. **For Option 1** - involving no change, there would clearly be no cost and no benefits.
33. **For Option 2** - there would be no cost beyond that associated with campaigns to encourage more responsible attitudes. However, given the land border between NI and the Republic of Ireland and the relatively small geographic size of NI, there is significant cross border activity in terms of contractors and workers throughout NI. The difficulties associated with ensuring that standards are maintained and policed should not be understated.
34. **For Option 3** - estimates of the total costs of complying with the amended requirements are very difficult to determine due to the fact that all reputable companies involved in this sector of the construction industry should be following current best practice in line with the British and European standards relating to combustion appliances and the associated fuel storage systems. From that point of view the majority of the amendments can be considered cost neutral except for an initial cost of training staff in the use of the revised Technical Booklet.
35. The exception to this would be the new requirement to address the risk of polluting the environment by oil spillage from small, above ground, storage tanks. The deemed-to-satisfy provision for this new regulation is to use an integrally bundled oil tank in those areas where the risk of pollution is considered greatest. The additional cost of one of these integrally bundled tanks is approximately £350 but the cost of installation and connection to the combustion appliance is no different to a single skinned tank.

For the purposes of this RIA it is assumed that 60% of all new domestic oil tanks will have to be integrally bundled, so the estimated cost of compliance with the new Regulation L7 is as follows –

No. of integrally bundled tanks = $0.60 \times 0.75 \times 10450 = 4700$ per annum
(see paragraph 22)

Estimated cost increase = $4700 \times 350 = \text{£}1.645$ million per annum.

EQUITY AND FAIRNESS

36. Every year there are high profile tragedies in the UK where people are killed by carbon monoxide poisoning from defective combustion installations. In most instances these fatalities are caused by failures to maintain appliances or to keep flues swept and their linings in good repair. The Health and Safety Executive in NI, through the Gas Safety (Installation and Use) Regulations (Northern Ireland) 2004, has sought to reduce the numbers of incidents. The Building Regulations can help to reinforce this.
37. The risks associated with combustion installations affect more than the initial purchaser of the building or appliance installation. For instance, fireplaces can give every appearance of being suitable for traditional use but may be safe only for some types of gas appliances designed to mimic real open fires. This problem is exacerbated as a result of the innovation of gas appliances.

- 38 Any minor costs to business associated with the implementation of the amendments will, no doubt, be passed on to the public as increased construction and combustion appliance installation costs. However, the public will be the main beneficiary through increased assurance that the combustion appliance and fuel storage systems have been safely installed. Information about the performance limits of fireplaces and flues will be readily available to sweeps and repair and refit installers. The potential for oil leakage getting into watercourses etc. is better controlled.
- 39 Consumer interest groups, such as RoSPA, the Gas Consumers' Association, CO-Gas Safety and the Consumers' Association, the fuel supply industry and the various trade associations representing manufacturers and installers of hearths, fireplaces and flue systems were well aware of the review of England & Wales, Part J, which came into operation in 2002. These interests positively contributed to the development of the technical proposals, which are now reflected in this amendment to the Northern Ireland Building Regulations.

SMALL FIRMS IMPACT TEST

- 40 The Department for Communities and Local Government, DCLG, (formally known as the Office of the Deputy Prime Minister,) when amending the equivalent England & Wales Part J of their Building Regulations, interviewed a number of firms. The aim was to gauge their reaction to the proposed changes. Overall, none of them had any strong objections to the proposals and the amendment was brought into operation on 1st April 2002.
- 41 Since the bulk of this proposed amendment to the Northern Ireland Building Regulations is in line with those changes introduced in England and Wales in 2002 and reflects today's good practice, it is thought reasonable to assume that the majority of small firms in Northern Ireland will be equally supportive of these proposals. Indeed those who responded to the consultation exercise were very keen to have the same standards in Northern Ireland as those currently in operation in the rest of the UK.

ENFORCEMENT AND SANCTIONS

- 42 Failure to comply with the requirements of the Building Regulations is a criminal offence. The district council in whose area the work is to be carried out enforces the Building Regulations. Therefore proposals to carry out "building work" as defined in the Building Regulations (Northern Ireland) 2000, as amended, must be notified to the district council. Designs and subsequent work are subjected to inspection and testing by district council and it can require the removal or alteration of work that does not comply with the requirements.
- 43 No new sanctions would be imposed by the implementation of the Part L amendment.

CONSULTATIONS

- 44 The consultation package seeking comment on this amendment was made up of a number of documents, one of which was a draft of this RIA. The consultation documentation was available in various formats on request and was placed on the Department's website.

The consultation involved distributing hard copies of the consultation documents to over 200 bodies and individuals who have a particular interest in the subject matter. In addition a press release was sent to all of the daily publications and trade/professional journals. The Department also consulted with the Northern Ireland Building Regulations Advisory Committee (NIBRAC) in relation to the proposals.

All responses to the consultation were recorded and discussed with the NIBRAC working party prior to the drafting of the final Technical Booklet.

MONITORING AND REVIEW

- 45 The Department's officials will be advising industry on the details and implications of the changes in seminars and workshops being organised by the construction professions. The Department's officials are also open to formal and informal approaches from those seeking clarifications.

Whenever amendments to the Building Regulations are made, it is the Department's practice to investigate their application after a reasonable time to monitor how the regulations are working in practice.

SUMMARY AND RECOMMENDATION

- 46 On the basis of the assessments presented in this paper the recommendation is to proceed with amending Part L of the Building Regulations (Northern Ireland) 2000 and the corresponding Technical Booklet.
- 47 The most significant cost of compliance with the new regulations is in relation to the control of pollution from domestic, above ground, oil storage tanks, which is estimated to be approximately **£1.6 million per annum**. It is fully accepted that, on the face of it, this cost outweighs the estimated **£0.06 million per annum** benefit but there are important environmental benefits to which it is difficult to assign a monetary value and which have a considerable bearing on the overall national environment.
- 48 It is estimated that the total benefit to people in and around buildings that have a combustion appliance fitted will be approximately **£6.0 million per annum**. These benefits will more than compensate for any small increase in cost to general construction works associated with the revised regulations in relation to the installation and operation of combustion appliances.
- 49 The adoption of this amendment to Part L will bring the Building Regulations (Northern Ireland) 2000 into step with the rest of the United Kingdom as well as improving the alignment with other relative legislation.

MINISTERIAL DECLARATION

"I have read the Regulatory Impact Assessment and I am satisfied that the benefits justify the costs".

Signed by the responsible Minister

David Hanson MP

Date: August 2006.

CONTACT POINT

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