Report

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Table 1.1 summarises the main products and components of the heating system affected by the regulations for gas fired wet central heating systems in new dwellings. The minimum requirements as required by Approved Document L1A are also given in the table.

Table 1.1 Minimum requirements for new gas fired wet central heating systems as required by approved document LIA (new dwellings)

Product/components	Minimum Requirements
Gas fired domestic boilers	For boilers installed after the 1 April 2005, the boiler efficiency should not be less than 86% as expressed by its SEDBUK values. All boilers have to be of the condensing type. There are however exceptional circumstances where the installation of a non-condensing boiler is allowed to be installed in an existing dwelling. This is covered in detailed in section X of this report for existing dwellings
Hot water circulation pumps	Systems for space heating and domestic hot water primary circuits should have fully pump circulation
By-pass valve	An automatic by-pass valve should be provided with any other requirement if specified by the manufacturer.
Hot water storage cylinder	Vented copper hot water storage vessels should comply with the heat loss and heat exchanger requirements of BS1566:2002 Unvented hot water storage systems products should comply with BS7206 or be certified by any of the following: The British Board of Agreement, the Water Research Council, or by an accredited body as complying with the building regulations Primary storage systems should meet the insulation requirements of section 4.3.1or 4.3.2 of the Water Heater Manufacturers Association performance specification for thermal stores All hot water storage vessels should carry a label with the information: ▪ Type of vessel ▪ Nominal capacity in litres ▪ Standing losses in kWh/day ▪ Etc.
Controls	Boiler Interlock Boiler based system should have boiler control interlock in which the controls are wired so that when there is no demand for either spacing heating or hot water, the boiler and pump are switched off Time Control of space and water heating Time control of space and water heating should be provided by: ▪ A full programmer with separate timing to each circuit ▪ Two or more separate timers providing timing control to each circuit. ▪ Etc Etc

Source: BSRIA

2 THE IMPACT OF THE EPBD ON OIL FIRED WET CENTRAL HEATING SYSTEMS

Table 2.1 summarises the main products and components of the heating system affected by the regulations for oil fired wet central heating systems in new dwellings. The minimum requirements as required by Approved Document L1A are also given in the table.

Table 2.1 Minimum requirements for new oil fired wet central heating systems as required by approved document LIA (new dwellings)

Product/components	Minimum Requirements
Oil fired domestic boilers	For boilers installed after the 1 April 2007, the boiler efficiency should not be less than 86% as expressed by its SEDBUK values. All boilers have to be of the condensing type. As with gas fired boilers, there are also exceptional circumstances where the installation of a non-condensing oil fired boiler is allowed to be installed in an existing dwelling. This is covered in detailed in section X of this report for existing dwellings
Oil fired Combination domestic boilers	The boiler efficiency should not be less than 82% (SEDBUK value)
Hot water circulation pumps	Systems for space heating and domestic hot water primary circuits should have fully pump circulation
By-pass valve	An automatic by-pass valve should be provided with any other requirement if specified by the manufacturer.
Hot water storage cylinder	Vented copper hot water storage vessels should comply with the heat loss and heat exchanger requirements of BS1566:2002 Unvented hot water storage systems products should comply with BS7206 or be certified by any of the following: The British Board of Agreement, the Water Research Council, or by an accredited body as complying with the building regulations Primary storage systems should meet the insulation requirements of section 4.3.1or 4.3.2 of the Water Heater Manufacturers Association performance specification for thermal stores All hot water storage vessels should carry a label with the information: ▪ Type of vessel ▪ Nominal capacity in litres ▪ Standing losses in kWh/day ▪ Etc.
Controls	**Boiler Interlock** Boiler based system should have boiler control interlock in which the controls are wired so that when there is no demand for either spacing heating or hot water, the boiler and pump are switched off **Time Control of space and water heating** Time control of space and water heating should be provided by: ▪ A full programmer with separate timing to each circuit ▪ Two or more separate timers providing timing control to each circuit. ▪ Etc Etc

Source: BSRIA

3 THE IMPACT OF EPBD ON INDIVIDUAL PRODUCTS

The impact of the EPBD on individual products is given in the table below. This looks at the direct impact it has on the manufacturer in the following areas:

- Design
- Marketing Strategy
- Development/Capital Costs Investments

Table 3.1 Impact of the EPBD on individual products

Product/ components	Design	Marketing Strategy	Development/Capital Investment Costs
Gas fired domestic boilers	Condensing gas fired boiler technology was well established well before the EPBD was drawn up and were available as early as the late 1980's. The impact of the EPBD on this technology has been minimal as most manufacturers were already manufacturing gas fired condensing boilers.	No significant change in marketing required for manufacturers whose main stream products are gas fired condensing boilers	The impending EUP directive (soon to replace the Boiler efficiency Directive BED) may however specify more stringent efficiency requirements than those in the current BED and this may incur further design, development and certification costs for the manufacturer
Oil fired domestic boilers and combination oil fired boilers	Condensing oil fired boiler technology is relatively new in the UK. Manufacturers have to dramatically redesign boilers to achieve compliance with the minimum efficiency requirements. In some cases, this is achieved by the inclusion of a condenser heat exchanger to recover the latent heat within the flue gases. Because condensate is mildly acidic, the material of the condenser heat exchanger must be made in high grade stainless steel e.g. 316. Boilers must also be redesigned to include the provision of a condensate drain and trap for removal of the condensate. Additional design considerations must also be given to the material used in the manufacture of the flue for the boilers due to the flue gases being mildly acidic. 316 stainless is commonly used to avoid corrosion.	Manufacturers may have to change their marketing strategy. Condensing boiler can be up to 50% more expensive than non-condensing boilers.	Development costs can be significant in the region of 100 K- 200K. Additional costs will involve certification costs to prove compliance with existing efficiency requirements of the Boiler efficiency Directive (Soon to be replace with the EUP). Capital investment costs will also be required for e.g. tooling i.e. laser cutting machine for cutting stainless steel sheet metal. This can be in the region of 1M£
Oil fired Combination domestic boilers			
Hot water circulation pumps			
By-pass valve			

Product/ components	Design	Marketing Strategy	Development/Capital Investment Costs
Hot water storage cylinder			
Controls			

Source: BSRIA

4 SUMMARY OF MAIN FINDINGS

5 CONCLUSIONS

APPENDICES

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