

**Recommendations texts (9.82) to be used on the EPC in Northern Ireland
28 September 2008**

Note. The recommendations are picked up by software using the recommendation number. Where the text needs to be adjusted slightly for different circumstances it is repeated with a different recommendation number.

Rec. Number	Recommendation (page 5)	Recommendation Text (page 6)
1	Insulate hot water cylinder with 160 mm jacket	<p>Hot water cylinder insulation Installing a 160 mm thick cylinder jacket around the hot water cylinder will help to maintain the water at the required temperature; this will reduce the amount of energy used and lower fuel bills. A cylinder jacket is a layer of insulation that is fitted around the hot water cylinder. A jacket 160 mm thick (or two 80 mm jackets) would be best, dependent upon space limitations, but an 80 mm jacket would be a significant improvement if there are space limitations. The jacket should be fitted over any thermostat clamped to the cylinder. Hot water pipes from the hot water cylinder should also be insulated, using pre-formed pipe insulation of up to 50 mm thickness (or to suit the space available) for as far as they can be accessed to reduce losses in summer. All these materials can be purchased from DIY stores and installed by a competent DIY enthusiast.</p>
2	Increase hot water cylinder insulation to 160 mm	<p>Hot water cylinder insulation Increasing the thickness of existing insulation up to 160 mm around the hot water cylinder will help to maintain the water at the required temperature; this will reduce the amount of energy used and lower fuel bills. A cylinder jacket is a layer of insulation that is fitted around the hot water cylinder. The jacket should be fitted over the top of the existing insulation and over any thermostat clamped to the cylinder. Hot water pipes from the hot water cylinder should also be insulated, using pre-formed pipe insulation of up to 50 mm thickness (or to suit the space available) for as far as they can be accessed to reduce losses in summer. All these materials can be purchased from DIY stores and installed by a competent DIY enthusiast.</p>
3	Add additional 80 mm jacket to hot water cylinder	<p>Hot water cylinder insulation Increasing the thickness of existing insulation by adding an 80 mm cylinder jacket around the hot water cylinder will help maintain the water at the required temperature; this will reduce the amount of energy used and lower fuel bills. The jacket should be fitted over the top of the existing foam insulation and over any thermostat clamped to the cylinder. Hot water pipes from the hot water cylinder should also be insulated, using pre-formed pipe insulation of up to 50 mm thickness (or to suit the space available) for as far as they can be accessed to reduce losses in summer. All these materials can be purchased from DIY stores and installed by a competent DIY enthusiast.</p>

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4	Hot water cylinder thermostat	<p>Cylinder thermostat</p> <p>A hot water cylinder thermostat enables the boiler to switch off when the water in the cylinder reaches the required temperature; this minimises the amount of energy that is used and lowers fuel bills. The thermostat is a temperature sensor that sends a signal to the boiler when the required temperature is reached. To be fully effective it needs to be sited in the correct position and hard wired in place, so it should be installed by a competent plumber or heating engineer.</p>
5	Increase loft insulation to 270 mm	<p>Loft insulation</p> <p>Loft insulation laid in the loft space or between roof rafters to a depth of at least 270 mm will significantly reduce heat loss through the roof; this will improve levels of comfort, reduce energy use and lower fuel bills. Insulation should not be placed below any cold water storage tank; any such tank should also be insulated on its sides and top, and there should be boarding on battens over the insulation to provide safe access between the loft hatch and the cold water tank. The insulation can be installed by professional contractors but also by a capable DIY enthusiast. Loose granules may be used instead of insulation quilt; this form of loft insulation can be blown into place and can be useful where access is difficult. The loft space must have adequate ventilation to prevent dampness; seek advice about this if unsure (particularly if installing insulation between rafters because a vapour control layer and ventilation above the insulation are required). Further information about loft insulation and details of local contractors can be obtained from the National Insulation Association (www.nationalinsulationassociation.org.uk).</p>
6	Cavity wall insulation	<p>Cavity wall insulation</p> <p>Cavity wall insulation, to fill the gap between the inner and outer layers of external walls with an insulating material, reduces heat loss; this will improve levels of comfort, reduce energy use and lower fuel bills. The insulation material is pumped into the gap through small holes that are drilled into the outer walls, and the holes are made good afterwards. As specialist machinery is used to fill the cavity, a professional installation company should carry out this work, and they should carry out a thorough survey before commencing work to ensure that this type of insulation is suitable for this home. They should also provide a guarantee for the work and handle any building control issues. Further information about cavity wall insulation and details of local installers can be obtained from the National Insulation Association (www.nationalinsulationassociation.org.uk).</p>

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7	50 mm internal or external wall insulation	<p>Internal or external wall insulation</p> <p>Solid wall insulation involves adding a layer of insulation to either the inside or the outside surface of the external walls, which reduces heat loss and lowers fuel bills. As it is more expensive than cavity wall insulation it is only recommended for walls without a cavity, or where for technical reasons a cavity cannot be filled. Internal insulation, known as dry-lining, is where a layer of insulation is fixed to the inside surface of external walls; this type of insulation is best applied when rooms require redecorating and can be installed by a competent DIY enthusiast. External solid wall insulation is the application of an insulant and a weather-protective finish to the outside of the wall. This may improve the look of the home, particularly where existing brickwork or rendering is poor, and will provide long-lasting weather protection. Further information can be obtained from the National Insulation Association (www.nationalinsulationassociation.org.uk).</p>
8	Replace single glazed windows with low-E double glazing	<p>Double glazing</p> <p>Double glazing is the term given to a system where two panes of glass are made up into a sealed unit. Replacing existing single-glazed windows with double glazing will improve comfort in the home by reducing draughts and cold spots near windows. Double-glazed windows may also reduce noise, improve security and combat problems with condensation.</p>
9	Secondary glazing to single glazed windows	<p>Secondary glazing</p> <p>Secondary glazing is the addition of a second pane of glass inside the existing window. Adding secondary glazing will improve comfort in the home by reducing draughts and cold spots near windows. It may also reduce noise and combat problems with condensation. Installation can be carried out by a competent DIY enthusiast.</p>
10	Draughtproof single-glazed windows	<p>Draughtproofing</p> <p>Fitting draughtproofing, strips of insulation around windows and doors, will improve the comfort in the home. A contractor can be employed but draughtproofing can be installed by a competent DIY enthusiast.</p>

Rec. Number	Recommendation (page 5)	Recommendation Text (page 6)
11	Upgrade heating controls	<p>Heating controls (programmer, room thermostat and thermostatic radiator valves)</p> <p>The heating system would benefit from a programmer and room thermostat to enable the boiler to switch off when no heat is required; this will reduce the amount of energy used and lower fuel bills. Thermostatic radiator valves should also be installed, to allow the temperature of each room to be controlled to suit individual needs, adding to comfort and reducing heating bills. For example, they can be set to be warmer in the living room and bathroom than in the bedrooms. Ask a competent heating engineer to install thermostatic radiator valves and a fully pumped system with the pump and the boiler turned off by the room thermostat. Thermostatic radiator valves should be fitted to every radiator except one – the radiator in the same room as the room thermostat. Remember the room thermostat is needed as well as the thermostatic radiator valves, to enable the boiler to switch off when no heat is required. It is best to obtain advice from a qualified heating engineer.</p>
12	Upgrade heating controls	<p>Heating controls (room thermostat and thermostatic radiator valves)</p> <p>A room thermostat will increase the efficiency of the heating system by enabling the boiler to switch off when no heat is required; this will reduce the amount of energy used and lower fuel bills. Thermostatic radiator valves should also be installed, to allow the temperature of each room to be controlled to suit individual needs, adding to comfort and reducing heating bills provided internal doors are kept closed. For example, they can be set to be warmer in the living room and bathroom than in the bedrooms. Ask a competent heating engineer to install thermostatic radiator valves and a fully pumped system with the pump and the boiler turned off by the room thermostat. Thermostatic radiator valves should be fitted to every radiator except for the radiator in the same room as the room thermostat. Remember the room thermostat is needed as well as the thermostatic radiator valves, to enable the boiler to switch off when no heat is required. It is best to obtain advice from a qualified heating engineer.</p>
13	Upgrade heating controls	<p>Heating controls (thermostatic radiator valves)</p> <p>Thermostatic radiator valves allow the temperature of each room to be controlled to suit individual needs, adding to comfort and reducing heating bills provided internal doors are kept closed. For example, they can be set to be warmer in the living room and bathroom than in the bedrooms. Ask a competent heating engineer to install thermostatic radiator valves. Thermostatic radiator valves should be fitted to every radiator except the radiator in the same room as the room thermostat. Remember the room thermostat is needed as well as the thermostatic radiator valves, to enable the boiler to switch off when no heat is required. It is best to obtain advice from a qualified heating engineer.</p>

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14	Upgrade heating controls	<p>Heating controls (room thermostat)</p> <p>The heating system should have a room thermostat to enable the boiler to switch off when no heat is required. A competent heating engineer should be asked to do this work. Insist that the thermostat switches off the boiler as well as the pump and that the thermostatic radiator valve is removed from any radiator in the same room as the thermostat. It is best to obtain advice from a qualified heating engineer.</p>
15	Upgrade heating controls	<p>Heating controls (programmer and thermostatic radiator valves)</p> <p>The heating system would benefit from a programmer to provide better comfort through automatic control of the system. A modern programmer can provide different time programmes for heating and hot water, allowing different time periods to be set for each; seven-day programmers also allow different heating and/or hot water patterns to be set for weekdays and weekends and holidays. Thermostatic radiator valves should also be installed, to allow the temperature of each room to be controlled to suit individual needs, adding to comfort and reducing heating bills provided internal doors are kept closed. For example, they can be set to be warmer in the living room and bathroom than in the bedrooms. Ask a competent heating engineer to install thermostatic radiator valves and a fully pumped system with the pump and the boiler turned off by the room thermostat. Thermostatic radiator valves should be fitted to every radiator except for the radiator in the same room as the room thermostat. Remember the room thermostat is needed as well as the thermostatic radiator valves, to enable the boiler to switch off when no heat is required. It is best to obtain advice from a qualified heating engineer.</p>
16	Time and temperature zone control	<p>Heating controls (time and temperature zone control)</p> <p>The heating system controls should be improved so that both the temperature and time of heating can be set differently in separate areas of your house; this will reduce the amount of energy used and lower fuel bills. For example, it is possible to have cooler temperatures in the bedrooms than in the living room provided internal doors are kept closed, and to have a longer heating period for the living room. It is best to obtain advice from a qualified heating engineer.</p>
17	Upgrade heating controls	<p>Heating controls (programmer and room thermostat)</p> <p>The warm air heating system would benefit from the addition of a programmer and room thermostat so that it switches off when no heat is required; this will reduce the amount of energy used and lower fuel bills. Insist that the thermostat switches off the warm air burner as well as the blower. A modern programmer can provide different time programmes for heating and hot water, allowing different time periods to be set for each; seven-day programmers also allow different heating patterns to be set for weekdays and weekends and holidays. It is best to obtain advice from a qualified heating engineer.</p>

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18	Upgrade heating controls	<p>Heating controls (room thermostat) The warm air heating system in this home would benefit from the addition of a room thermostat so that it switches off when no heat is required; this will reduce the amount of energy used and lower fuel bills. Insist that the thermostat switches off the warm air burner as well as the blower. It is best to obtain advice from a qualified heating engineer.</p>
19	Solar water heating	<p>Solar water heating A solar water heating panel, usually fixed to the roof, uses the sun to pre-heat the hot water supply. This will significantly reduce the demand on the heating system to provide hot water and hence save fuel and money. The Solar Trade Association has up-to-date information on local installers and any grant that may be available or contact the Energy Saving Trust.</p>
20	Replace boiler with Band A condensing boiler	<p>Band A condensing boiler A condensing boiler is capable of much higher efficiencies than other types of boiler, meaning it will burn less fuel to heat this property. This improvement is most appropriate when the existing central heating boiler needs repair or replacement, but there may be exceptional circumstances making this impractical. Condensing boilers need a drain for the condensate which limits their location; remember this when considering remodelling the room containing the existing boiler even if the latter is to be retained for the time being (for example a kitchen makeover). It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options.</p>
21	Replace boiler with Band A condensing boiler	<p>Band A condensing boiler A condensing boiler is capable of much higher efficiencies than other types of boiler, meaning it will burn less fuel to heat this property. This improvement is most appropriate when the existing central heating boiler needs repair or replacement, but there may be exceptional circumstances making this impractical. Condensing boilers need a drain for the condensate which limits their location; remember this when considering remodelling the room containing the existing boiler even if the latter is to be retained for the time being (for example a kitchen makeover). It is best to obtain advice from a qualified heating engineer.</p>
22	Replace boiler with biomass boiler	<p>Biomass boiler Modern boilers are cleaner burning and more efficient than the boiler in this home and cost less to run. A biomass boiler burns renewable fuel such as wood pellets and therefore is less damaging to the environment. This improvement is most appropriate when the existing heating system needs repair or replacement. Provisions under the Clean Air Act apply to this work. It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options. Contact the Energy Saving Trust for information about any grants that may be available.</p>

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23	Wood pellet stove with boiler and radiators	<p>Biomass stove with boiler</p> <p>A closed-in solid fuel stove (also called a room heater) is about twice as efficient as an open fire. Modern heaters with glass doors are clean, easy to use and provide an attractive source of heating. A biomass boiler burns renewable fuel such as wood pellets and therefore is much less damaging to the environment. This improvement is most appropriate when the existing heating system needs repair or replacement. Provisions under the Clean Air Act apply to this work. It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options. Contact the Energy Saving Trust for information about any grants that may be available.</p>
24	Fan assisted storage heaters and dual immersion cylinder	<p>Fan assisted storage heaters</p> <p>Modern storage heaters are smaller and easier to control than the older type in the property. Ask for a quotation for new, fan-assisted heaters with automatic charge control. A dual-immersion cylinder, which can be installed at the same time, will provide cheaper hot water than the system currently installed. As installations should be in accordance with the current regulations covering electrical wiring, only a qualified electrician should carry out the installation. It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options, which might also include switching to other forms of electric heating.</p>
25	Fan-assisted storage heaters	<p>Fan assisted storage heaters</p> <p>Modern storage heaters are smaller and easier to control than the older type in the property. Ask for a quotation for new, fan-assisted heaters with automatic charge control. As installations should be in accordance with the current regulations covering electrical wiring, only a qualified electrician should carry out the installation. It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options which might also include switching to other forms of electric heating.</p>
26	Replacement warm air unit	<p>Replacement warm air unit</p> <p>A modern warm air unit is capable of higher efficiency than older types, meaning it will burn less fuel for heating and (if fitted) the hot water system in your property. This improvement is most appropriate when the existing central heating warm air unit or hot water service needs repair or replacement. It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options.</p>
27	NOT USED	NOT USED

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28	Condensing oil boiler with radiators	<p>Band A condensing oil boiler Condensing boilers have a much higher efficiency than other types of heating appliance, meaning they will burn less fuel to heat the property. This option is best taken up when the present warm air unit requires repair or replacement. Building Regulations require replacement oil boilers to be of the condensing type unless there are exceptional circumstances. It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options.</p>
29	Change heating to Band A gas condensing boiler	<p>Band A condensing gas boiler Changing the heating to use a mains gas boiler that provides both space and water heating will save money, as mains gas is currently cheaper than the fuel being used at present. A condensing boiler is capable of much higher efficiencies than other types of boiler, meaning it will burn less fuel to heat the property, but there may be exceptional circumstances making this impractical. Condensing boilers need a drain for the condensate which limits their location; remember this when considering remodelling the room containing the existing boiler even if the latter is to be retained for the time being (for example a kitchen makeover). This improvement is most appropriate when the existing heating system needs repair or replacement. It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options.</p>
30	Fan assisted storage heaters and dual immersion cylinder	<p>Fan assisted storage heaters Modern storage heaters are much less expensive to run than the direct acting, on-peak heating system in the property. A dual-rate electricity supply is required to provide the off-peak electricity that these heaters use; this is easily obtained by contacting the energy supplier. Ask for a quotation for fan-assisted heaters with automatic charge control. A dual-immersion cylinder, which can be installed at the same time, will provide cheaper hot water than the system currently installed. As installations should be in accordance with the national wiring standards, only a qualified electrician should carry out the installation. Ask a qualified electrical heating engineer to explain the options, which might also include switching to other forms of electric heating.</p>
31	Fan-assisted storage heaters	<p>Fan assisted storage heaters Modern storage heaters are much less expensive to run than the direct acting, on-peak heating system in the property. A dual-rate electricity supply is required to provide the off-peak electricity that these heaters use; this is easily obtained by contacting the energy supplier. Ask for a quotation for fan-assisted heaters with automatic charge control. As installations should be in accordance with the national wiring standards, only a qualified electrician should carry out the installation. It is best to obtain advice from a qualified electrical heating engineer. Ask a qualified electrical heating engineer to explain the options, which might also include switching to other forms of electric heating.</p>

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32	Change heating to Band A gas condensing boiler	<p>Band A condensing gas boiler</p> <p>Changing the heating to use a mains gas boiler that provides both space and water heating will save money, as mains gas is currently cheaper than the fuel being used at present. A condensing boiler is capable of much higher efficiencies than other types of boiler, meaning it will burn less fuel to heat the property but there may be exceptional circumstances making this impractical. Condensing boilers need a drain for the condensate which limits their location. Remember this when considering remodelling the room containing the existing boiler even if the latter is to be retained for the time being (for example a kitchen makeover). This improvement is most appropriate when the existing heating system needs repair or replacement. It is best to obtain advice from a qualified heating engineer. Ask the qualified heating engineer to explain the options.</p>
33	NOT USED	NOT USED
34	Solar photovoltaic panels, 2.5 kWp	<p>Solar photovoltaic (PV) panels</p> <p>A solar PV system is one which converts light directly into electricity via panels placed on the roof with no waste and no emissions. This electricity is used throughout the home in the same way as the electricity purchased from an energy supplier. The British Photovoltaic Association has up-to-date information on local installers who are qualified electricians and on any grant that may be available. It is best to obtain advice from a qualified electrician. Ask the electrician to explain the options.</p>
35	Low energy lighting for all fixed outlets	<p>Low energy lighting</p> <p>Replacement of traditional light bulbs with energy saving recommended ones will reduce lighting costs over the lifetime of the bulb, and they last up to 12 times longer than ordinary light bulbs. Also consider selecting low energy light fittings when redecorating; contact the Lighting Association for your nearest stockist of Domestic Energy Efficient Lighting Scheme fittings.</p>
36	Replace heating unit with Band A condensing unit	<p>Install Band A condensing heating unit</p> <p>A condensing unit is capable of much higher efficiencies than other types, meaning it will burn less fuel to heat this property but there may be exceptional circumstances making this impractical. Condensing boilers need a drain for the condensate which limits their location. Remember this when considering remodelling the room containing the existing boiler even if the latter is to be retained for the time being (for example a kitchen makeover). This improvement is most appropriate when the existing central heating unit needs repair or replacement. It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options.</p>

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37	Install Band A condensing boiler	<p>Install Band A condensing boiler (separate from the range cooker)</p> <p>A condensing boiler is capable of much higher efficiencies than other types of boiler, meaning it will burn less fuel to heat the property. It is recommended to install a separate condensing boiler, independent of the range cooker, but there may be exceptional circumstances making this impractical. Condensing boilers need a drain for the condensate which limits their location. It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options.</p>
38	Install Band A condensing boiler	<p>Install Band A condensing boiler (separate from the range cooker)</p> <p>A condensing boiler is capable of much higher efficiencies than other types of boiler, meaning it will burn less fuel to heat the property. It is recommended to install a separate condensing boiler, independent of the range cooker, but there may be exceptional circumstances making this impractical. Condensing boilers need a drain for the condensate which limits their location. It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options.</p>
39	Wood pellet stove with boiler and radiators	<p>Biomass stove with boiler</p> <p>A biomass stove (also called a room heater) burns renewable fuel such as wood pellets and therefore is less damaging to the environment than the solid fuel room heater in this home. This improvement is most appropriate when the existing heating system needs repair or replacement. Provisions under the Clean Air Act apply to this work. It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options. Contact the Energy Saving Trust for information about any grants that may be available.</p>
40	Change room heaters to Band A condensing boiler	<p>Band A condensing boiler</p> <p>A full central heating system using a condensing boiler will provide space and water heating at greater efficiency than gas room heaters, meaning it will burn less fuel to heat this property, but there may be exceptional circumstances making this impractical. Condensing boilers need a drain for the condensate which limits their location. Remember this when considering remodelling the room containing the existing boiler even if the latter is to be retained for the time being (for example a kitchen makeover). It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options.</p>

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41	Change room heaters to Band A condensing boiler	<p>Band A condensing boiler</p> <p>A full central heating system using a condensing boiler will provide space and water heating at greater efficiency than gas room heaters, meaning it will burn less fuel to heat this property, but there may be exceptional circumstances making this impractical. Condensing boilers need a drain for the condensate which limits their location. Remember this when considering remodelling the room containing the existing boiler even if the latter is to be retained for the time being (for example a kitchen makeover). It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options.</p>
42	Replace heating unit with Band A mains gas condensing unit	<p>Band A condensing heating unit</p> <p>Changing the heating to use a mains gas heating unit will save money, as mains gas is currently cheaper than the fuel being used at present. A condensing unit is capable of much higher efficiencies than other types, meaning it will burn less fuel to heat this property, but there may be exceptional circumstances making this impractical. Condensing units need a drain for the condensate which limits their location. Remember this when considering remodelling the room containing the existing boiler even if the latter is to be retained for the time being (for example a kitchen makeover). This improvement is most appropriate when the existing central heating unit needs repair or replacement. It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options.</p>
43	Condensing oil boiler with radiators	<p>Band A condensing oil boiler</p> <p>Condensing boilers have a much higher efficiency than other types of heating appliance, meaning they will burn less fuel to heat the property, but there may be exceptional circumstances making this impractical. Condensing boilers need a drain for the condensate which limits their location. Remember this when considering remodelling the room containing the existing boiler even if the latter is to be retained for the time being (for example a kitchen makeover). This option is best taken up when the present warm air unit requires repair or replacement. It is best to obtain advice from a qualified heating engineer. Ask the engineer to explain the options.</p>
44	Wind turbine	<p>Wind turbine</p> <p>A wind turbine provides electricity from wind energy. This electricity is used throughout the home in the same way as the electricity purchased from an energy supplier. The British Wind Energy Association has up-to-date information on suppliers of small-scale wind systems and any grant that may be available. Wind turbines are not suitable for all properties. The system's effectiveness depends on local wind speeds and the presence of nearby obstructions, and a site survey should be undertaken by an accredited installer.</p>