



Department for Communities and Local Government

Improving the energy efficiency of our buildings

A guide to air conditioning inspections for buildings

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Department for Communities and Local Government

Chapter 1

Air conditioning inspection requirements

Why air conditioning inspections are required

Having an air conditioning system inspected by an accredited air conditioning energy assessor¹ is designed to improve efficiency, reduce energy consumption, operating costs and the carbon emissions of the system. The energy assessor will highlight improvements to the operation of existing systems or opportunities to replace older, less energy efficient systems or oversized systems with new energy efficient systems.

The person who controls the operation of the system, such as the building owner or manager, has statutory obligations and duties of care in the operation and maintenance of air conditioning systems. The inspections referred to in this guide are in addition to the normal activities associated with the ownership and operation of air conditioning systems.

Inspection, maintenance and cleaning programmes maintain the ability of the system to provide healthy and comfortable environments for building occupants, limiting the escape of refrigerant gases and ensuring the safety of equipment. The practices and procedures needed to achieve these aims should be applied more frequently than the assessment for energy efficiency described here. It is outside the scope of this document to describe such procedures in detail.

When air conditioning inspections are required

All air conditioning systems with an effective rated output of more than

12kw must be regularly inspected by an energy assessor. The inspections must be no more than five years apart.

Systems requiring an air conditioning inspection

Only air conditioning systems with an effective rated output of more than

12kW are affected by these regulations. This will include systems consisting of individual units which are less than 12kW but whose combined effective rated output is more than 12kW.

An air conditioning system is defined as 'a combination of all components required to provide a form of air treatment in which the temperature is controlled, or can be lowered, and includes systems which combine such air treatment with the control of ventilation, humidity and air cleanliness'. This includes both fixed self contained systems, such as split systems and centralized systems. Mechanical ventilation systems that provide no 6

mechanical cooling themselves, but serve spaces that are cooled by other means are included. Any components contained in air conditioning systems that are only intended to provide heating are excluded. Air conditioning systems that provide refrigeration for process applications, such as server rooms, would also require an inspection if that part of the system allows an inspection to be carried out.

Fluorinated greenhouse gas inspections

Fluorinated greenhouse gases are among the Kyoto Protocol groups of gases for which the EU has committed itself to reduce emissions. European Community Regulation 842/2006 on certain fluorinated greenhouse gases (the F-Gas Regulation) is the legal instrument by which emissions reductions are to be delivered. The framework set out by the regulation and its supplementary European Community Regulations is underpinned in Great Britain by the Fluorinated Greenhouse Gases Regulations 2009 (SI 2009/261). Northern Ireland has similar regulations.

The aim of the fluorinated greenhouse gases regulatory framework is to minimise emissions mainly through leak prevention and repair. Specific provisions include leak checking obligations and the requirement that personnel and companies must be appropriately certificated if they undertake work on equipment, such as air conditioning. Full details of all of the obligations can be found in the information sheets provided by the Department for Environment, Food and Rural Affairs (Defra) business support unit. F-Gas support, a government sponsored unit, provides guidance to organisations and individuals affected by the framework. The information sheets and other F-Gas guidance can be found on the Defra website at: www.defra.gov.uk/environment/quality/air/fgas

What are air conditioning inspections?

What does an air conditioning inspection cover?

The inspection will examine the refrigeration and air moving equipment that are part of air conditioning systems and their controls. It will also examine any documentation that helps to understand the system, or indicates the extent to which the system has been maintained. The energy assessor is also required to estimate whether the system is suitably sized for the cooling loads in the treated spaces and to provide advice on ways in which the performance of the system might be improved.

Air conditioning inspections carried out for the purposes of the Energy Performance of Buildings Regulations are not specifically designed to assess the risks to public health, although the energy assessor is required to inform the building owner or manager, of a potential issue. The aim of the air conditioning inspection is to address energy performance, but the energy assessor is also required to confirm that the relevant person has undertaken the necessary checks to ensure there is no Legionella risk as required by the Health (Legionella) Regulations 2001.

What can I expect in the report?

The purpose of the inspection report is to ensure that the building owner or manager is provided with information regarding the efficiency of the air conditioning systems that they control, together with advice on how to improve the energy efficiency of the system, to identify opportunities to save energy and to reduce operating costs.

There is no legal requirement to act on the recommendations. Acting on the advice and key recommendations in the inspection report and rectifying faults or making appropriate improvements, where this is attractive and cost effective, will contribute to the efficient running of air conditioning system, which will contribute to a reduction in carbon emissions and reduce the operating costs for the building occupants.

What a report must contain

The inspection report must include an assessment of the efficiency of the system and its size compared to the cooling requirements of the building. It must also contain appropriate advice on possible improvements to the system.

Chapter 3

Obtaining an air conditioning inspection

Responsibilities for ensuring inspections are done

The person who controls the operation of an air conditioning system must: ensure an inspection has been done in accordance with the requirements and timetable of the regulations keep the most recent inspection report provided by an energy assessor give any inspection report to any person taking over responsibilities with respect to the control of the air conditioning system.

Control of air conditioning systems

The person who controls the operation of the system is the person who controls the technical functioning of the system, not someone who does no more than adjust the temperature or whose only responsibility is to adjust the controls.

Responsibilities for conducting air conditioning inspections

An energy inspection of an air conditioning system must be carried out by an accredited air conditioning energy assessor who is a current member of an accreditation scheme. The energy assessor must make a copy of the inspection report available to the client, or to the person who controls the operation of the system, as soon as practicable after the inspection date but only after the report is entered on the central register.

Air conditioning energy assessor accreditation

Accreditation schemes are responsible for managing air conditioning energy assessors and for the quality of air conditioning inspections by ensuring their energy assessors are competent and possess the appropriate skills to conduct energy assessments. To become a member of an accreditation scheme, the energy assessor will need to:

Responsibilities with respect to other inspection or certification procedures

The air conditioning inspection report must be kept in a safe place so that it can be used to inform subsequent inspections. It is recommended that the inspection report should be kept in the building log book, together with ongoing maintenance and/or energy records.

Applying the regulations in practice

Determining the size of your air conditioning system

The effective output of an individual air conditioning unit or system may be given on the rating plate attached to the unit. It may also be stated in the operating and maintenance manual or from the manufacturer's website. Alternatively, where the system is covered by a maintenance contract, the capacity should be known by the contractor and should be reported in the maintenance records they supply.

Chapter 5

Assessing the energy performance of an air conditioning system

The inspection process

The air conditioning inspection process will examine the refrigeration equipment and air moving systems that are part of an air conditioning system, including their controls. Any documentation which helps to understand the system, or indicates the extent, to which the system has been maintained, will also be examined. The energy assessor is also required to estimate whether the system is suitably sized for the cooling loads in the treated spaces, and to provide advice on ways in which improvement might be made to the energy efficiency of the system.

Maintenance

Evidence of any existing planned maintenance schedule or of other recent maintenance activities will be sought. Where documentation clearly shows that equipment and systems are already the subject of regular good practice checking and maintenance procedures, a number of aspects of the energy inspection and provision of advice may be reduced in scale or omitted.

More detailed information about the inspection process and good practice inspection and maintenance guidance can be found in the Chartered Institution of Building Service Engineers TM44 guidance: *Inspection of air conditioning systems - a guide to Energy Performance of Buildings Directive compliance*, or similar equivalent guidance.

Chapter 6

Consumer protection and enforcement

Checking the authenticity of an air conditioning inspection report or an energy assessor

An air conditioning report must be produced by an accredited air conditioning energy assessor. The energy assessor must make a copy of the inspection report available to the client, or to the person who controls the operation of the system, as soon as practicable after the inspection date but only after the report has been lodged on the central register. The energy assessor may also make a copy of the report available to the accreditation scheme of which they are a member.

If the building owner or manager suspects that the air conditioning inspection report has been produced fraudulently, then the matter should be referred to the police.

Penalties for not having an air conditioning inspection report

The penalty for failing to having an air conditioning inspection report is fixed at £300. Tenants of a building, where a central air conditioning system is under the control of the building owner or manager would not be liable for a penalty charge for any breach of the duties.

A further penalty can be issued for failure to provide a copy of the air conditioning inspection report when requested to an officer of an enforcement authority within seven days. This is fixed at £200.

If the building owner or manager wants to sell or let a building with an air conditioning system, which should have been inspected, then it is very likely that the legal advisors to the prospective tenant or buyer will require sight of the report during the legal processes prior to exchange of contracts. Failure to have a report, where one is required, may have a negative impact on the transaction process.