

AC/01 - Guidance on the Inspection of Air Conditioning Systems in Existing Buildings



1. Purpose

The purpose of this leaflet is to provide information on the Inspection of Air Conditioning Systems.

Air-conditioning inspections cover the assessment of the efficiency and the sizing of the system compared to the cooling requirements of the building and promotes the improvement of the energy performance of buildings.

2. Why have they been introduced?

The earth's natural resources such as oil products, natural gas and solid fuels are limited and steps must be taken to conserve these

commodities. Scientific studies have indicated that these resources also generate emissions such as CO₂, which are considered to have a direct contribution to global warming. Making a building more energy efficient through improvements in heating systems, insulation and air conditioning units will lead to a reduction in energy consumption and in CO₂ emissions.

Scotland, as part of the United Kingdom along with all other EU member states has an obligation under the Energy Performance of Buildings Directive (EPBD) to promote improvement in the energy performance of new and existing buildings.

3. What is an air conditioning system?

An air-conditioning system is a system where refrigeration is used to provide cooling for the comfort of the occupants.

4. What does the air-conditioning inspection cover?

The purpose of the inspection and the resulting report is to give basic information to the building owner on the likely efficiency of the air-conditioning systems for which they have responsibility together with advice on how the energy efficiency might be improved. The inspection does not cover safety matters.

5. Does this inspection cover other air conditioning system legislative requirements?

These inspections relate purely to Article 9 of the EPBD. There are other separate legislative requirements for the inspection of air conditioning systems such as the F-gas Regulation but where appropriate the inspection programme could be integrated with

other statutory inspections and maintenance programmes.

6. Do I have to get an inspection carried out for all air-conditioning systems?

No, only those which are more than 12 kW in size (see 11 for guidance on estimating whether your system is more than 12kW in size).

7. What information will be shown?

The report of the inspection of the air-conditioning system will comprise:

- the equipment inspected
- the inspection of documents and records
- inspection of the system documentation
- inspection of the outdoor and indoor units
- inspection of the system controls
- summary of advice
- general observations and advice for load reduction or alternatives

8. When do inspections of air-conditioning systems require to be carried out?

Commencement of inspections of existing systems is as follows:

- a. For all systems with an effective rated output of more than 250 kW, from 4 January 2009 with first inspections completed by 4 January 2011;
- b. For all other systems with an effective rated output of more than 12 kW from 4 January 2011 with first inspections completed by 4 January 2013;

If you have a system of more than 250 kW capacity you should make arrangements for inspection now.

9. Who is responsible for obtaining an inspection?

The owner of the building is responsible for obtaining an inspection

10. Who can carry out an Inspection of Air Conditioning Systems for us?

The Scottish Government has entered into protocols with a number of organisations and professional bodies. Details of qualified and accredited members will be made available by the approved organisation. Details are available at:

http://www.sbsa.gov.uk/european_issues/aircond_systems.htm

11. How do I know if my system is more than 12 kW?

The following give guidelines on likely areas requiring 12 kW of cooling. However if it is unclear whether your system exceeds the 12 kW threshold you should seek specialist advice.

- 200m² floor area of air conditioned general office
- 100m² floor area of air conditioned office with high levels of IT/ electrical equipment
- 250m² floor area of retail spaces with average display lighting levels
- 150m² floor area of retail spaces with high levels of display lighting and illuminated cabinets

12. If I have several systems each less than 12 kW do I require an inspection?

An inspection would be needed if a number of individual systems each 12 kW or less, but taken together total more than 12 kW, within

one building or fire-separated part of a building and are linked by way of a central control.

13. The report provides advice. What does this mean?

The report will provide advice on possible improvements or replacement of the system and on alternative solutions to cooling the building.

Implementation of recommendations is not mandatory but will lead to improvements in the effectiveness and may reduce operating costs.

14. When do I have to obtain a further inspection of my system?

The date of the next inspection will be stated on the report. The frequency of inspections will range from three years for poorly maintained and inefficient systems up to five years for those systems that are well maintained.

15. What should I do with the report?

It is recommended that the report is kept in a safe place along with the services log book and made available to future owners and tenants and to the person carrying out future inspections.

16. Information and contacts

Further advice and information is available from our website:

- http://www.sbsa.gov.uk/european_issues/euroguidance.htm

Approved organisations:

- http://www.sbsa.gov.uk/european_issues/aircond_systems.htm

The Technical Handbooks:

- http://www.sbsa.gov.uk/tech_handbooks/tbooks2008.htm

Contact:

Energy Team
Building Standards Division
Directorate of the Built Environment
Denholm House
Almondvale Business Park
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EH54 6GA

Telephone: 01506 600400

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Website: www.sbsa.gov.uk

Advice on how to improve the energy efficiency of your building can also be obtained from the Carbon Trust at

www.carbontrust.co.uk

Directorate for
The Built Environment
Building Standards Division

