

# ASTACEA5

## Report on the energy performance of air conditioning systems



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### Overview

This Unit covers the activities undertaken once the inspection is completed and involves the production and communication of a complete and comprehensive report on the energy performance of air conditioning systems. It covers the collation of all the information you have obtained on the air conditioning system and the generation of recommendations for measures to improve the energy performance of the system. It also covers the issuing of the report, and responding appropriately to any requests for clarification on aspects of the report. It involves adherence to the requirements set out within “CIBSE TM44: Inspection of air conditioning systems” relating to reporting on the energy performance of air conditioning systems.

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### Performance criteria

- You must be able to:*
- P1 assemble and collate information from onsite inspection and from other relevant and reliable sources
  - P2 record details of the location of the property and owner/manager
  - P3 record inspector's name, affiliation and status and date of inspection
  - P4 record details of systems inspected including the physical description of the systems inspected including types of system
  - P5 provide an inventory of equipment inspected including manufacturer and duty
  - P6 record details of the results of the inspection including:
    - P6.1 measurements and calculations reviewed or made for inspection
    - P6.2 comments on likely efficiency of installations and suggestions to improve efficiency
    - P6.3 comments on faults identified and suggested actions
    - P6.4 the adequacy of equipment maintenance and suggestions for improvement
    - P6.5 the adequacy of installed controls and control settings and suggestions for improvement
    - P6.6 the size of the installed system in relation to cooling load and suggestions for improvement
  - P7 where appropriate provide information on alternative solutions for improving the efficiency of the air conditioning system in relation to one or more of the following possible solutions:
    - P7.1 cooling load reduction
    - P7.2 fixed or movable solar shading
    - P7.3 control of illumination levels
    - P7.4 enhanced It management systems
    - P7.5 relocation of equipment
    - P7.6 control of ventilation of spaces including impact of open windows
  - P8 where appropriate provide information on alternative cooling techniques in relation to one or more of the following techniques:
    - P8.1 free cooling systems
    - P8.2 absorption cycle refrigeration systems
    - P8.3 equipment capable of operating in both cooling and heating modes
  - P9 produce a summary of findings and recommendations
  - P10 provide additional advice on sources of good practice publications on the ownership and efficient operation of air conditioning systems serving the building
  - P11 provide additional advice on sources of funding that might support further investigations and improvements in efficiency
  - P12 prepare and issue a report that meets the relevant codes of practice and

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### Knowledge and understanding

*You need to know and understand:*

- standards
- K1 the prescribed format and content of a report on the energy performance of air conditioning systems as defined with the current “CIBSE TM44: Inspection of air conditioning systems” including:
    - K1.1 details of the property inspected and the inspector
    - K1.2 details of the system inspected
    - K1.3 details of the results of the inspection, including recommendations
    - K1.4 the design intent of the system inspected versus its actual operating performance (taking account of any ways in which building usage has changed over time)
    - K1.5 additional advice
  - K2 the range of measures that may improve the energy performance of air conditioning systems including:
    - K2.1 replacement of system or parts of the system
    - K2.2 rectification of faults
    - K2.3 improvements (e.g. to maintenance regime, to system controls) best practice
  - K3 the importance of checking the report to ensure it is clear and complete
  - K4 how to explain the recommendations included within the report and their Implications
  - K5 the limitations on answers to queries about the report which it is appropriate to provide
  - K6 the sources of further information and advice to which you could refer
  - K7 the size of the installed system in relation to cooling load

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**Relevant occupations** Professional Occupations; Engineering Professionals; Engineering; Construction, planning and the built env; Building and construction; Architects, Town Planners and Surveyors

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**Suite** Air Conditioning Energy Assessment

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