ASTNDEA6
Undertake energy assessments of existing Level 4 non-dwellings using the Simplified Building Energy Model (SBEM)

Overview

This standard covers the competences required to inspect existing non-dwellings categorised as Level 4 in order to determine the energy performance of the property, make recommendations for cost-effective improvements and issue Energy Performance Certificates in compliance with regulatory requirements.

This standard relates to existing Level 4 non-dwellings that can be assessed using the Simplified Building Energy Model (SBEM). Level 4 buildings contain, for example, more complex heating and mechanical ventilation systems, but they do not include the level of complexity that requires the use of a Dynamic Simulation Model (DSM). In England and Wales, a Level 4 building means a building identified as Level 4 according to the Assessment Level Decision Flow Chart as defined in Conventions published by the Department of Communities and Local Government's Commercial EPC Conventions Group. Existing non-dwellings that require the use of a Dynamic Simulation Model (DSM) are classed as Level 5 buildings.

Note that the term 'assessment' is used throughout the standards when referring to the overall process of determining the Asset Rating of a property, or its Operational Rating, whereas 'inspection' is used only when referring to on-site inspection of the property and its features

The references to clients throughout the standard refer both to internal clients, such as line managers, as well as external clients; for example individuals who have contracted your services or representatives of external client organisations.

This standard covers inspecting existing Level 4 non-dwellings to determine energy performance including the collation of information from the on-site inspection and other sources to assess the energy performance of the property. It also covers the preparation and issue of an Energy Performance Certificate which includes energy efficiency measures for the property and meets relevant regulations and covers keeping adequate records of energy inspections carried out.

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Performance criteria

You must be able to:

Inspect existing non-dwellings to determine energy performance

P1 ensure that you have the relevant equipment and resources needed for the inspection of **Level 4** non-dwellings

P2 identify yourself to those present at the property before commencing the inspection

P3 use surveying equipment correctly and record and interpret data accurately

P4 identify and record the method of construction of the property and the main materials used, the installed building services and the activities which take place in the building

P5 draw a suitable sketch plan and elevations where none exist

P6 confirm by on-site inspection that the building fabric and installed building services are consistent with the drawings and specifications, where provided

P7 identify **circumstances** when at the property that prevent you continuing with the inspection and explain the reasons to the client(s)

P8 undertake a methodical visual inspection of all relevant aspects of the property in accordance with the requirements of the approved software and current Conventions

Collate information from the on-site inspection and other sources to assess the energy performance of the property

You must be able to:

P9 make accurate observations and measurements which are necessary to provide data for the calculation of an energy performance rating and production of **energy efficiency measures** for the property

P10 obtain all additional information that is needed about the property and ensure that defaults are not used except where justified

P11 make further investigations where observations are inconsistent with existing evidence and expected findings

P12 identify **critical property features and activities** where incorrect choice of values will be significantly detrimental to accuracy and take appropriate steps to correctly represent these features to arrive at an accurate assessment of the property

P13 follow the correct procedures for collecting information to enable the energy efficiency of the property to be determined

P14 assemble and collate information from your on-site inspection and from other relevant and reliable sources

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Prepare and issue an Energy Performance Certificate which includes recommendations for cost-effective improvements and meets relevant regulations

You must be able to:

- P15 describe the prescribed format and content of an Energy Performance Certificate
- P16 use approved software correctly to determine energy performance ratings and to generate **energy efficiency measures** for the property
- P17 check that data has been inputted correctly prior to lodgement and review data if calculations do not work or if the result appears incorrect
- P18 recognise a result that is unlikely to be correct for the property in question
- P19 check the **energy efficiency measures** generated prior to lodgement and make any necessary amendments
- P20 take the necessary corrective action where any of your checks indicate a possible misattribution of data or error in the resulting rating or **energy efficiency measures**
- P21 prepare and issue an Energy Performance Certificate that meets relevant **regulations**
- P22 lodge Energy Performance Certificates on the prescribed national databank on completion
- P23 produce and maintain accurate and legible records of your findings, which are clear, complete and conform to accepted professional and statutory requirements. These will include investigations carried out, values recorded and options considered, to the level of detail required to:
  - P23.1 produce a complete and comprehensive Energy Performance Certificate
  - P23.2 justify your decisions on values recorded and energy efficiency measures selected
- P24 collate **relevant information** as evidence to support the specific decisions made on values chosen and energy efficiency measures considered

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Knowledge and understanding

You need to know and understand:

Inspect existing Level 4 non-dwellings to determine energy performance

K1 the principles of building structure elements, fabric, services and overall design philosophy as relevant to energy assessment
K2 what equipment and resources are needed to undertake the inspection
K3 the detailed inspection requirements that apply to the property as described in the relevant guidance documents and Conventions
K4 the definitions and conventions embodied within the approved software used to calculate energy performance ratings
K5 the building characteristics which affect the energy performance of a Level 4 building and make it distinct from a Level 3 or Level 5
K6 how to recognise different types of building construction, materials and services from drawings as well as building structures
K7 how to identify and classify variations in building use and activities, as defined in the Simplified Building Energy Model (SBEM) and its conventions
K8 how to conduct the inspection in a thorough, methodical and consistent manner
K9 the problems that can affect the energy performance of the building fabric and services
K10 the implications of hazardous building fabric for the energy assessment and reporting

You need to know and understand:

Collate information from the on-site inspection and other sources to assess the energy performance of the property

K11 how to make accurate observations and take accurate measurements
K12 how to make further investigations where observations are inconsistent with existing evidence and expected findings and how to identify the causes of these inconsistencies
K13 factors which are relevant to determining the energy performance of a property
K14 the assumptions that are made in determining energy performance
K15 the factors that are deemed not to affect the energy performance of the property
K16 the relative sensitivity of the different factors that affect the energy performance of the property and **critical property features and activities** where incorrect choice of values will be significantly detrimental to accuracy
K17 how to allocate building categories and activities to spaces including the use of planning classifications
K18 how to collate information required to assess the energy performance of property

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Prepare and issue an Energy Performance Certificate which includes recommendations for cost-effective improvements and meets relevant regulations

You need to know and understand:

K19 the prescribed format and content of an Energy Performance Certificate; the differences in the EPC format used in England/Wales and in the Devolved Administrations

K20 the range of measures to improve the energy performance of property that may be included within an Energy Performance Certificate

K21 the approved software used for the production and lodgement of completed Energy Performance Certificates and how to use it correctly

K22 the principles underpinning the approved software used to calculate energy ratings

K23 how to input data using the approved software in order to determine energy performance ratings

K24 how to use approved software to generate energy efficiency measures for the property

K25 the importance of checking that data has been inputted correctly prior to lodgement and how to review data if the calculation will not process or appears incorrect

K26 the importance of checking the energy efficiency measures generated prior to lodgement, deleting any that are inappropriate and providing your reasons

K27 the way in which energy efficiency measures are generated and circumstances when it is appropriate to delete them

K28 the importance of checking the Energy Performance Certificate and energy efficiency measures to ensure they comply with relevant requirements

K29 how to use the information technology underpinning the national register for lodgement and retrieval of Energy Performance Certificates and how to provide necessary audit evidence via electronic transfer

K30 the level of detail within your records required to produce a complete and comprehensive Energy Performance Certificate and justify your decisions on the values recorded and energy efficiency measures included

K31 the importance of making and maintaining records that are complete, accurate and legible

K32 the reasons why it is necessary and important to record where and why accurate inspection has not been possible

K33 the circumstances in which records can include the fact that information is ‘unknown’ and the evidence required to support the use of defaults in these circumstances

K34 the importance of storing records securely allowing for future access and the purposes for which your records may be used

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Additional Information

Scope/range

1. **Level 4**
   - 1.1 a building identified as Level 4 according to the Assessment Level Decision Flow Chart as defined in Conventions published by the Department of Communities and Local Government's Commercial EPC Conventions Group

2. **circumstances**
   - 2.1 the discovery of unexpected or hazardous conditions or materials
   - 2.2 other potential threats to health and safety
   - 2.3 properties beyond your current level of competence

3. **critical property features and activities**
   - 3.1 allocation of the most appropriate activity to zones
   - 3.2 lighting
   - 3.3 choice of default HVAC in zones where none exists
   - 3.4 selection of HVAC efficiency and its allocation to the appropriate zone
   - 3.5 availability of daylight
   - 3.6 presence of Low and Zero Carbon Technologies

4. **relevant information**
   - 4.1 legible site notes
   - 4.2 clear site sketches (plan, elevation) to give an adequate record of the inspection for audit purposes
   - 4.3 clear photographs containing mandated data (e.g. time and date) appropriately staged and annotated where necessary
   - 4.4 legibly completed survey forms
   - 4.5 records of web searches or other research
   - 4.6 any other information you consider necessary to support your decisions
   - 4.7 any other information required by Scheme Operating Requirements

Note: This standard relates to existing Level 4 non-dwellings that can be assessed using SBEM

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