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WP 2 RESEARCH

Project partner: PETROC

WP 2 has the following aims:

1. Carrying out research concerning existing competence profiles, materials, methodologies and competence profiles for workers in the sectors installation, electro and maintenance, regarding energy performance of buildings Installations for comfort of people >12 Kw.
2. Providing advice on adaptation, upgrading and transfer of materials to make them fully fit the EU directive EPBD, 2002/91/EG.

In WP 2 the following activities will be executed:

1. Research on and comparison of available competence profiles, training & lesson materials, approaches and methods within the partnership's organizations concerning the topics mentioned above;
2. Report and advice on: transfer of competence profiles, methods, materials and approaches (use, adaptation and upgrading) to make them fully fit the EU Directive EPBD, 2002/91/EG.

Introduction of the EPBD in UK

The EU Energy Performance of Buildings Directive – EPBD was introduced in the UK from January 2006 with a three year implementation period ending January 2009. Its objective is to improve energy efficiency and reduce carbon emissions as part of the government's strategy to achieve a sustainable environment and meet climate change targets agreed under the Kyoto Protocol. The EPBD introduced higher standards of energy conservation for new and refurbished buildings from April 2006 and will require energy performance certification for all buildings when sold or leased. In addition it will introduce regular inspections for larger air conditioning systems and advice on more efficient boiler operation for commercial property.

Inspection of air-conditioning systems

Since 1 April 2007, air conditioners with a rated output of more than 12 kW have to be regularly inspected by a qualified expert. From 10 April 2011, the inspection frequency is as follows:

Air conditioning Inspections

The Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations, states;

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 a maximum of five years apart. One or more air-conditioning units within a building controlled by a single person are considered to comprise a single air-conditioning system for the purposes of the regulations. This includes all systems providing cooling such as; Chillers, condensers, air handling units, control systems, terminal units and packaged split systems.

The regulations require the first inspection of the affected air-conditioning systems to be carried out as follows:

- For all systems first put into service on or after 1 January 2008, the first inspection must have taken place within five years of the date when it was first put into service.
- For other air-conditioning systems, where the effective rated output is more than 250kW the first inspection must happen by 4 January 2009
- For other air-conditioning systems, where the effective rated output is more than 12kW the first inspection must happen by 4 January 2011.

Reports on the inspection of heating or airconditioning systems

Part 4 of the EPB Regulations 2007 imposes an obligation on those who have control of air-conditioning systems (with a maximum calorific output of more than 12kW) to ensure that the system is inspected at least every five years by an energy assessor.

The energy assessor must provide a written report of the inspection as soon as practicable after the inspection. From 6 April 2012, the energy assessor must also lodge the report on the central EPC register.

The report must include:

- An assessment of the air-conditioning efficiency of the system.
- An assessment of the size of the system compared to the cooling requirements of the building.
- Appropriate advice on possible improvements to the system (including replacement of the system and alternative solutions).

The requirement to have an air-conditioning system inspected is being introduced in stages from 1 January 2008:

- If the system was put into service after 1 January 2008, the first inspection must take place within five years of the system being put into service.
- If the system was in service before 1 January 2008, the date of the first inspection depends on the output of the system:
 - systems with an output of more than 250 kW must have been inspected by 4 January 2009;
 - systems with an output of more than 12 kW must have been inspected before 4 January 2011.

An air conditioning report (ACR) is produced as a result of the inspection and is intended to detail recommendations on how the systems could be run more efficiently. The systems must be inspected by competent and accredited persons who belong to an approved scheme. One such scheme is operated by CIBSE Certification, which accredits air conditioning inspectors for both complex and simple systems throughout the UK.

As off 6 April 2012 all Air Conditioning Inspectors must lodge their air conditioning inspection reports on the Government database operated by Landmark through CIBSE's lodgement site CASA.

Independent experts

Current situation

Governments must ensure that certification of buildings, the drafting of the accompanying recommendations and the inspection of boilers and air conditioning systems are carried out in an INDEPENDENT manner. This must be by qualified and/or accredited experts. These can operate as sole traders or be employed by public or private bodies.

The A/C engineers/contractors who complete the installation/maintenance should not be THE VERY SAME engineers doing the A/C Inspections, however there is no evidence that this particular EPBD regulation is being enforced.

Training

Level 3 Accreditation

Level 3 Accreditation covers air conditioning energy assessments on unitary, simple and multi split packaged and simple VRF/VRV air conditioning plant, equipment and systems.

Level 4 Accreditation

At level 4 Accreditation covers air conditioning energy assessments of large centralised air conditioning plant, equipment and systems. Level 4 assessors are also accredited to inspect and report on packaged air conditioning systems.

APEL Route to Qualification

APEL candidates should have at least two years' full time experience of designing, installing, maintaining or inspecting air conditioning systems within the last five years. We also look for membership of a professional body and evidence of CPD as part of the review process, however, if you don't have this we require applicants to complete a NOS unit 1 self-assessment which be reviewed in the application process.

Examination

To achieve the full Level 3 Certificate in Air-conditioning Energy Assessment, a learner must successfully complete all 5 units and a short exam.

The five units are listed below. The qualification has a total learning time of 360 hours.

| | |
|---|---|
| 1 | Conduct energy assessments in a safe, effective and professional manner |
| 2 | Prepare for energy assessments of air conditioning systems |
| 3 | Demonstrate understanding of simple/package air conditioning system inspections |
| 4 | Inspect simple/package air conditioning systems |
| 5 | Provide a report on the energy performance of simple/package air conditioning systems |

To achieve the full Level 4 Diploma in Air-conditioning Energy Assessment, a learner must successfully complete all 5 units and a short exam.

The 5 units are listed below. The qualification has a total learning time of 720 hours.

| | |
|---|---|
| 1 | Conduct energy assessments in a safe, effective and professional manner |
| 2 | Prepare for energy assessments of air conditioning systems |
| 3 | Demonstrate understanding of simple/package and complex/centralised air conditioning system inspections |
| 4 | Inspect simple/package and complex/centralised air conditioning systems |
| 5 | Provide a report on the energy performance of simple/package and complex/centralised air conditioning systems |

Competence profiles

All CIBSE accredited assessors are accredited on the basis of their experience, prior knowledge and competence, as measured against the relevant National Occupational Specification.

National Occupational Standards are standards for Energy Assessors that are approved by the United Kingdom Coordinating Group of National Occupational Standards Boards, as amended from time to time.

http://www.quidos.co.uk/documents/air_conditioning_final.pdf

Annexes:

<http://www.abbega.co.uk/images/awards/79/ABBE%20L3%20CertACEA%20Qualification%20Handbook%20Release%20issue%20March%202011.pdf>

<http://www.abbega.co.uk/images/awards/80/ABBE%20L4%20DipACEA%20Qualification%20Handbook%20Release%20issue%20March%202011.pdf>

http://www.quidos.co.uk/documents/air_conditioning_final.pdf