CUSTOMER INFORMATION SHEET
AIR SOURCE HEAT PUMPS

NICEIC Package Includes:

Training Materials, Powerpoint, Assessment Materials

Code	Core Assessments	Practical provisions page(s)
ASHP01	Air source heat pumps. Note: not including ground source systems or any systems using brine collector circuits.	See Appendix 1

Introduction

All NICEIC paperwork is designed to offer maximum flexibility, maintain ease and fluidity of the assessment process and to minimise the amounts of paperwork required.

Each centre is unique in the way it presents its practical provision; as a result the paperwork may not be ideally formatted with regard to running order or task content. It is acceptable for the running orders to be altered slightly to 'better suite' the provision and layout at an individual centre; such changes must be minimal and alterations made only with the **written permission of NICEIC Certification** (this excludes any appliance identification numbers and so on which may be added to the paperwork without permission being sought).

Certificate of Competence

A certificate of Competence will be issued if a candidate can meet the requirements laid down within this document. Certificates of Competence will be valid for the time period specified on it.

Air Source Heat Pump (non-refrigerant circuits)

Appliances limited to 45kW output connected to systems of up to the power identified as the scope of the MCS (at the time of writing 70kW load) see the MCS 70kWth Guidance Document. This includes the majority of Air Source Heat Pump systems currently installed within the British Isles. It will also cover the fundamental principles of heat pump system design, installation, commissioning, servicing and fault finding. It is not intended to cover every aspect of every possible scenario. N.B. Large commercial systems. It does not include Ground source systems.

Candidate Pre-requisites

The candidate is required to hold:

- N/SVQ Level 2/3 in Plumbing or equivalent earlier certification that provides evidence of competence; or
- N/SVQ Level 2/3 in Heating and Ventilating (Domestic Installation) or equivalent earlier certification that provides evidence of competence; or
- N/SVQ Level 2/3 in Heating and Ventilating (Industrial and Commercial Installation) or equivalent earlier certification that provides evidence of competence; or
- N/SVQ Level 2/3 in Oil-Fired Technical Services or equivalent earlier certification that provides evidence of competence; or
- N/SVQ Level 2/3 in Gas Installation and Maintenance or equivalent earlier certification that provides evidence of competence.

In addition, (if the competence is not included in the above qualifications) current certification in the following:

- Water Regulations/Water Byelaws (WRAS or equivalent)
- Energy Efficiency for Domestic Heating (NICEIC Certification or equivalent)

Appendix 1; ASHP Practical Provision

The assessment area must simulate a real working environment, i.e. an environment in which real work activities take place under real working conditions in keeping with real commercial situations. The assessment task must be undertaken using fit-for-purpose tools and equipment, full-size components. The physical resources and practical assessment facilities must be maintained in a fit for purpose condition and updated as directed by NICEIC certification.

	Initial
Task instructions and tools are available to each candidate.	✓
Appropriate scenarios applicable to the equipment used for assessment.	✓
Appropriate sets of manufacturers' instructions and normative reference documents.	✓
ASHP working installed system connected to an emitter circuit radiators or UFH.	✓
As a minimum the facility for the candidate to make a connection, of the type used for connecting the heat pump unit to the hydraulic emitter circuit.	✓
3 test sampling bottles to test glycol.	✓
1 refractrometer.	✓
1 hydraulic pump.	✓
The required number of faults that are listed in the maintenance assessment paper.	✓
PPE to include goggles and gloves and any other items identified as required by the manager of the assessment centre.	✓
Appropriate handover documentation that must align with the requirements of the Microgeneration Certification Scheme (MCS) Microgeneration Installation Standard: MIS 3005.	✓

The following is the recommended route through the assessment

Task A

The controls are identified. Confirm the purpose and operational characteristics of the components. This is a theory task where the candidate will identify the purpose and operating characteristics of controls from a list of descriptors. Centre to identify the controls with a number.

Task B

The activity requires the learner to undertake the required pre-installation checks. Where design cross-checks are required, these should require the learner to carryout basic type calculations only or to use tables or charts. For example, to verify that the heat pump rating is suitable for the emitter circuit load, the learner would be required to check the heat pump against a system specification.

The learner is required to undertake connecting a heat pump to an emitter circuit.

Task C

Prepare the air source heat pump system for testing and commissioning.

Commission the installation in accordance with manufacturer's guidance, design requirements, client's requirements and statutory requirements and/or industry recognised procedures.

Handover an air or ground source heat pump installation.

Assessment centres may use simulated collector circuit arrangements providing the arrangement enables the candidate to record details of the system, fill and purge and flush the collector circuit using a filling pump. The fill and purge aspect of the assessment need not be subject to normal on-site fill and purge durations; however, the assessment task and simulated collector circuit arrangement must enable a realistic fill and purge assessment to be completed. The assessment area must simulate a real working environment, i.e. an environment in which real work activities take place under real working conditions in keeping with real commercial situations. The assessment task must be undertaken using fit-for-purpose tools and equipment, full-size components and include realistic deadlines and other commercial requirements.

Role play with the assessor undertaking the role of the end user. Assessment based upon the learner collating all required handover documentation and explaining and demonstrating the operation and use of the system to the end user.

- To make the assessment relevant to current industry practice, the handover documentation provided must align with the requirements of the Microgeneration Certification Scheme (MCS) Microgeneration Installation Standard: MIS 3005 The latest version of MIS 3005 can be downloaded from www.microgenerationcertification.org

Task D

Practical task with direct observation by the assessor. The assessment may be undertaken using either installed fixed system or a portable assessment rig. Regardless of whether an installed fixed system or a portable assessment rig is used, the assessment facility/equipment must simulate a realistic and working ground source heat pump system installation.

- Assessment based upon the candidate undertaking a routine service and maintenance inspection.

Task E

Assessment based upon the candidate undertaking fault diagnostic work on an air source heat pump system installation. Assessment based upon the candidate undertaking fault rectification work on an air source heat pump system installation.

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