

EM147 Maintain air conditioning and ventilation systems used in food and drink operations

SQA Unit Code

HD65 04

Level 3

SCQF Level 6

Credit value 53

Unit Summary

This standard identifies the competences you need to carry out corrective maintenance activities on air conditioning and ventilation systems used in food and drink operations, in accordance with approved procedures. You will be required to maintain a range of air conditioning equipment and ventilation systems, which will include air generation, distribution and control systems. This will involve dismantling, removing and replacing faulty or damaged components, including motors, fans, pumps, valves, couplings, ducting and trunking, heaters, filters, and control devices including thermostats and switches. You will be expected to apply a range of dismantling and assembly methods and techniques, including proof marking/labelling of components to aid the reassembly, dismantling components requiring pressure techniques, torque loading, and setting, aligning and adjusting components. Food and drink operations is a term used in this standard to cover the following sub sectors of Meat, Drinks, Confectionery, Fresh Produce, Bakery, Seafood and Dairy.

You will be expected to work with minimal supervision, taking personal responsibility for your own actions, and for the quality and accuracy of the work that you carry out.

In order to be assessed as competent you must demonstrate to your assessor that you can consistently perform to the requirements set out below. Your performance evidence must include at least one observation by your assessor.

You must be able to:	You need to show:
<p>1. Maintain air conditioning and ventilation systems used in food and drink operations</p> <p>This means you:</p> <p>Work safely at all times, complying with health and safety and other relevant food and drink regulations, directives and guidelines</p> <p>Follow the relevant maintenance schedules to carry out the required work</p> <p>Carry out the maintenance activities within the</p>	<p>Evidence must be work-based, simulation alone is only allowed where shown in <i>bold italics</i></p> <p>Evidence of maintaining air conditioning and ventilation systems used in food and drink operations as part of your role in accordance with workplace procedures and within the limits of your own responsibilities.</p>

<p>limits of your personal authority</p> <p>Carry out the maintenance activities in the specified sequence and in an agreed timescale</p> <p>Report any instances where the maintenance activities cannot be fully met or where there are identified defects outside the planned schedule</p> <p>Complete relevant maintenance records accurately and pass them on to the appropriate person</p> <p>Dispose of waste materials in accordance with safe working practices and approved procedures</p>	
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You need to know and understand:

Evidence of knowledge and understanding should be collected during observation of performance in the workplace. Where it cannot be collected by observing performance, other assessment methods should be used.

1. the health and safety requirements of the area in which the maintenance activity is to take place, and the responsibility these requirements place on you not to compromise food safety
2. the isolation and lock-off procedure or permit-to-work procedure that applies to the system, including the critical control points
3. the specific health and safety food and drink precautions to be applied during the maintenance activity, and their effects on others (including The Prevention and Control of Legionellosis, and Safe Working in Confined Spaces 1997)
4. the requirements of the British Retail Consortium (BRC) guidelines and standards in relationship to the maintenance activities
5. the specific requirements of your customer/client specifications in relationship to the maintenance activities
6. your responsibilities in relationship to Hazard Analysis and Critical Control Points (HACCP, TACCP, VACCP) during the maintenance activities
7. the importance of wearing protective clothing and other appropriate safety equipment (PPE) during the maintenance process
8. hazards associated with carrying out maintenance activities on air conditioning equipment (including handling oils, greases, stored pressure/force/temperature, misuse of tools, using damaged or badly maintained tools and equipment, not following laid-down maintenance procedures), and how to minimise them to reduce any risks
9. how to obtain and interpret drawings, specifications, manufacturers' manuals and other documents needed in the maintenance process
10. the basic principles of how the equipment functions, its operation sequence, the working purpose of individual units/components and how they interact
11. the principles of the equipment's design features for safe operation in a food or

- drink environment including minimising the chance of contaminants or foreign bodies in the final product
12. the procedure for obtaining replacement parts, materials and other consumables necessary for the maintenance, including their safe/hygienic storage before use
 13. company policy on the repair/replacement of components during the maintenance process
 14. the sequence to be adopted for the dismantling/reassembly of various types of assemblies
 15. the methods and techniques used to dismantle/assemble air conditioning equipment (including release of pressures/force, proofmarking, extraction, pressing, alignment)
 16. methods of checking components are fit for purpose, how to identify defects and wear characteristics, and the need to replace 'lived' or consumable items (including filters, seals and gaskets)
 17. how to make adjustments to components/assemblies to ensure that they function correctly
 18. the correct operating ranges, including temperature and pressure of secondary heating sources (air and water)
 19. basic applications of different local heating systems (including radiators, in line duct heaters, skirting heating, fan coil, convectors, storage pipe heaters and air handling units)
 20. the typical building design temperatures, including for offices, factories (light and heavy work) warehouses and canteens
 21. the uses of measuring equipment, including micrometers, Verniers and other measuring devices
 22. how to make adjustments to components to ensure they function correctly
 23. how to check that tools and equipment are free from damage or defects, are in a safe and usable condition, and are configured correctly for their intended purpose
 24. the processes in place to segregate the tools and equipment used into high or low risk areas
 25. the checks required to ensure that all tools, materials and components are all accountable before operating the equipment
 26. the cleaning requirements/policies in place before returning the equipment into full operational production
 27. the generation of maintenance documentation and/or reports following the maintenance activity
 28. the equipment operating and control procedures to be applied during the maintenance activity
 29. how to use lifting and handling equipment correctly and safely in the maintenance activity
 30. the problems associated with the maintenance activity, and how they can be overcome
 31. the organisational procedure to be adopted for the safe disposal of waste of all types of materials including any spoilt food or drink products
 32. the extent of your own authority and to whom you should report if you have problems that you cannot resolve

Evidence of performance may employ examples of the following assessment:

- observation
- written and oral questioning;

- evidence from company systems (e.g. Food Safety Management System)
- reviewing the outcomes of work
- checking any records of documents completed
- checking accounts of work that the candidate or others have written