

EM145 Maintain heating and ventilation systems used in food and drink operations

SQA Unit Code

HD64 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 heating and ventilation systems used in food and drink operations, in accordance with approved procedures. You will be required to maintain heating and ventilation systems, which will include one of the following primary heating sources: gaseous, liquid, solid fuel, electricity and renewable energy. 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: |
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| <p>1. Maintain heating 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 heating 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> |

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| <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
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 heating and ventilation equipment (including stored pressure/force, hot surfaces, 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 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 heating and ventilation equipment (including release of pressures/force, proofmarking, extraction, pressing, alignment)
16. methods of checking that 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 they function correctly
18. the correct operating ranges, including temperature and pressure of secondary heating sources (air, water, steam)
19. the advantages and disadvantages of the application of different local heating systems (including radiators, under floor heating, 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. how to make adjustments to components to ensure they function correctly
22. 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
23. the processes in place to segregate the tools and equipment used into high or low risk areas
24. the checks required to ensure that all tools, materials and components are all accountable before operating the equipment
25. the cleaning requirements/policies in place before returning the equipment into full operational production
26. the generation of maintenance documentation and/or reports following the maintenance activity
27. the equipment operating and control procedures to be applied during the maintenance activity
28. how to use lifting and handling equipment correctly and safely in the maintenance activity
29. the problems associated with the maintenance activity, and how they can be overcome
30. the organisational procedure to be adopted for the safe disposal of waste of all types of materials including any spoiled food or drink products
31. 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

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