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Evidence Guide: UEERA0094 - Verify functionality and compliance of refrigeration and air conditioning installations

Student: _____

Signature: _____

Tips for gathering evidence to demonstrate your skills

The important thing to remember when gathering evidence is that the more evidence the better - that is, the more evidence you gather to demonstrate your skills, the more confident an assessor can be that you have learned the skills not just at one point in time, but are continuing to apply and develop those skills (as opposed to just learning for the test!). Furthermore, one piece of evidence that you collect will not usually demonstrate all the required criteria for a unit of competency, whereas multiple overlapping pieces of evidence will usually do the trick!

From the Wiki University

UEERA0094 - Verify functionality and compliance of refrigeration and air conditioning installations

What evidence can you provide to prove your understanding of each of the following criteria?

Prepare to verify refrigeration and air conditioning installation

1. WHS/OHS hazards, risk control methods, relevant standards, codes and legislation are obtained and applied

WHS/OHS hazards, risk control methods, relevant standards, codes and legislation are obtained and applied

Completed ☐

Date:

Teacher:

Evidence:

Safety hazards which have not previously been identified are noted on job safety assessment and established risk control measures implemented

1.

Completed ☐

Date:

Teacher:

Evidence:

Appropriate person/s is consulted to ensure the verification work is coordinated effectively with others involved on the worksite

1.

Completed ☐

Date:

Teacher:

Evidence:

Location of refrigeration and air conditioning system components are determined from specifications and diagrams

1.

Completed ☐

Date:

Teacher:

Evidence:

Refrigeration and air conditioning inspection and tests are appropriately sequenced in accordance with job schedule

1.

Completed ☐

Date:

Teacher:

Evidence:

Materials needed for the tests and verification are obtained in accordance with workplace procedures and checked against job requirements

1.

Completed ☐

Date:

Teacher:

Evidence:

Tools, equipment and testing devices needed to verify compliance are obtained in accordance with workplace procedures and checked for correct operation and safety

1.

Completed ☐

Date:

Teacher:

Evidence:

Visually inspect the refrigeration and air conditioning installation

- 1. Circuits/machines/plant are checked and isolated in accordance with WHS/OHS requirements and workplace procedures

Circuits/machines/plant are checked and isolated in accordance with WHS/OHS requirements and workplace procedures

Completed ☐

Date:

Teacher:

Evidence:

Pipe work is checked for appropriate type and size

1.

Completed ☐

Date:

Teacher:

Evidence:

Pipe work accessories and components are validated as being suitably located, securely fixed and suitably protected from damage or corrosion

1.

Completed ☐

Date:

Teacher:

Evidence:

Refrigeration and air conditioning system components and accessories are validated as being appropriately rated in accordance with manufacturer and design specifications

1.

Completed ☐

Date:

Teacher:

Evidence:

Evidence that equipment complies with safety and functional requirements is cited in accordance with workplace procedures

1.

Completed ☐

Date:

Teacher:

Evidence:

Unexpected situations are responded to in a manner that minimises risk to personnel and equipment, discussed with appropriate person/s and documented in accordance with workplace procedures

1.

Completed ☐

Date:

Teacher:

Evidence:

Visual inspection is carried out efficiently without waste of materials, damage to or contamination of apparatus and the surrounding environment or services using sustainable energy practices

1.

Completed ☐

Date:

Teacher:

Evidence:

Conduct refrigeration and air conditioning compliance tests

1. Testing or measuring on live electrical work and operating system is conducted in accordance with WHS/OHS requirements and workplace safety procedures

Testing or measuring on live electrical work and operating system is conducted in accordance with WHS/OHS requirements and workplace safety procedures

Completed ☐

Date:

Teacher:

Evidence:

Circuits/machines/plant are checked and isolated in accordance with WHS/OHS requirements and workplace procedures

1.

Completed ☐

Date:

Teacher:

Evidence:

Electrical tests are conducted to verify that the electrical circuit within the refrigeration and air conditioning installation is safe and functions as intended

1.

Completed ☐

Date:

Teacher:

Evidence:

Refrigeration and air conditioning tests are conducted to verify that the refrigeration equipment and pipe work within the refrigeration installation is safe and functions as intended

1.

Completed ☐

Date:

Teacher:

Evidence:

Unexpected situations are responded in a manner that minimises risk to personnel and equipment, discussed with appropriate person/s and documented in accordance with workplace procedures

1.

Completed ☐

Date:

Teacher:

Evidence:

Refrigeration/air conditioning testing is carried out efficiently without waste of materials or damage to apparatus, the surrounding environment or services using sustainable energy practices

1.

Completed ☐

Date:

Teacher:

Evidence:

Report refrigeration and air conditioning inspection and verification findings

- 1. Worksite and equipment are cleaned and made safe in accordance with established procedures

Worksite and equipment are cleaned and made safe in accordance with established procedures

Completed ☐

Date:

Teacher:

Evidence:

Non-compliance defects are identified and reported in accordance with workplace procedures

1.

Completed ☐

Date:

Teacher:

Evidence:

Recommendations for rectifying defects are made in accordance with workplace procedures

1.

Completed ☐

Date:

Teacher:

Evidence:

Work completion is documented and appropriate person/s notified in accordance with workplace procedures

1.

Completed ☐

Date:

Teacher:

Evidence:

Assessed

Teacher: _____ **Date:** _____

Signature: _____

Comments:

Instructions to Assessors

Required Skills and Knowledge

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures and practices, including:

using risk control measures

using personal protective equipment (PPE)

acting within regulatory limits, implementing legislation, industry standards, codes of practice and regulations

applying sustainable energy principles and practices

completing reporting in accordance with workplace procedures

conducting all refrigeration tests safely and correctly, including:

pressure testing, leak testing, evacuation testing, controls tests, refrigerant charge, operating pressures and system operation

conducting electrical tests safely and correctly, including:

isolation, testing of insulation resistance of equipment, resistance of the internal circuits of equipment, polarity of supply and equipment, continuity of earthing, and correct electrical connections and load current

dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment

identifying non-compliant defects from test results

identifying visual defects

planning refrigeration and air conditioning installation compliance inspections and testing

reading and interpreting drawings and requirements related to the installation

using manufacturer specifications and manuals.

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

refrigeration and air conditioning installation functionality tests and verification methods

refrigeration and air conditioning installation tests and verification methods, including visual inspections, mandatory tests and verification requirements

refrigeration testing requirements and procedures, including:

controls

leak test

operating pressures and temperatures

pressure test

refrigerant charge

vacuum electrical testing requirements and procedures, including:

isolation and tagging off

continuity of earthing: correct electrical connections

isolation testing: insulation resistance of equipment

load current

polarity of supply and equipment

resistance of the internal circuits of equipment

insulation resistance of the equipment

relevant environmental and sustainable principles and practices, including:

environment protection

sustainable energy

sustainable resources

relevant equipment, materials, tools and testing devices, including:

air pressure and flow measurement and testing devices

electrical measuring and testing devices, including multimeters, megohm meters (insulation resistance tester) and ammeters

pressure testing and leak testing equipment and tools, including oxygen-free dry nitrogen cylinder and regulator

refrigeration and electrical hand and power tools
vacuum pump and electronic vacuum measuring device
relevant industry standards, codes of practice and regulations
relevant installation specifications and drawings
relevant job safety assessments or risk mitigation processes, including electrical safe working practices
relevant refrigeration and air conditioning manufacturer specifications and instructions
relevant WHS/OHS legislated requirements
relevant workplace documentation
relevant workplace policies and procedures
verifying compliance and functionality of refrigeration and air conditioning installations.

Range Statement

Range is restricted to essential operating conditions and any other variables essential to the work environment.	
Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.	
Inspecting, testing and verifying the functionality and compliance of refrigeration and air conditioning systems must include at least two of the following systems:	cool rooms/freezer rooms merchandising and display cabinets residential air conditioning package air conditioning
Verification must include conducting the following:	visual inspections of the system, components, pipe work controls and accessories electrical tests, including isolation, testing of insulation resistance of equipment, resistance of the internal circuits of equipment, polarity of supply and equipment, continuity of earthing, and correct electrical connections and load current refrigeration tests, including pressure testing, leak testing, evacuation testing, controls tests, refrigerant charge, and operating pressures and temperatures



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