

U16902 Install and maintain drainage systems

Unit Descriptor:

This unit is about installing and maintaining drainage systems. It is for members of staff who can carry out work described under limited supervision only.

You will be required to select and handle work tools, powered equipment and materials correctly, competently and safely and to decide the appropriate timing of operations, the work methods to be used and to check the results and correct any faults.

The typical activities you would carry out to complete this unit include:

- Ensuring reference marks and setting out is accurate according to specification.
- Locating and protecting underground and over ground services.
- Using concrete, bricks, pipe materials, masonry and rubble.
- Cleaning up and disposing of debris.
- Inspecting drainage systems.
- Identifying blockages and leaks.
- Dealing with blockages and leaks.

Use of equipment and all actions must meet the requirements of the law and codes of practice.

ELEMENT

PERFORMANCE CRITERIA

To be competent you must achieve the following:

- | | |
|-----------------------------|---|
| 1. Install drainage systems | 1.1 Select and use tools and equipment and materials appropriately, safely and effectively. |
| | 1.2 Position reference marks according to specification. |
| | 1.3 Install drainage systems according to specification. |

- 1.4 Use working methods that are safe and efficient.
 - 1.5 Minimise unwanted damage to services and surroundings.
 - 1.6 Keep working areas clean according to client requirements.
 - 1.7 Complete work to an agreed schedule.
2. Maintain drainage systems
- 2.1 Inspect **drainage systems** according to agreed schedules.
 - 2.2 Correctly identify **problems** with drainage systems.
 - 2.3 Select **tools, equipment** and working methods to deal with the **problems**.
 - 2.4 Take safe and effective action to deal with these **problems**.
 - 2.5 Make sure surrounding areas are clean and tidy to completion of work.
 - 2.6 Minimise unwanted damage to services and surroundings.
 - 2.7 Complete work to an agreed schedule.

RANGE STATEMENT

You must cover the items below:

Element 1: Install drainage systems**A. Use both of the following tools and equipment:**

- (i) hand tools
- (ii) mechanical

B. Use two of the following types of materials:

- (i) concrete
- (ii) clay
- (iii) plastic
- (iv) masonry
- (v) aggregate

Element 2: Maintain drainage systems**A. Maintain three of the following types of drainage systems:**

- (i) pipe
- (ii) tile
- (iii) mole
- (iv) open
- (v) single
- (vi) multiple

B. Deal with both of the following types of problems:

- (i) blockages
- (ii) leaks

C. Use both of the following types of tools and equipment:

- (i) hand tools
- (ii) powered equipment

UNDERPINNING KNOWLEDGE AND SKILLS

1. How to select and use tools and equipment safely and efficiently.
2. Why it is important to position reference marks correctly according to specification and how to do so.
3. How to ensure that the installation of foundations, sub-bases and drainage is correct according to specification.
4. How to do work efficiently and minimise wastage of materials and time.
5. Why it is important to clean debris effectively, safely and tidily.
6. The types of damage which is likely to occur to services and surroundings and how to keep this to a minimum.
7. Why it is important to keep working areas clean according to clients' requirements.
8. Why it is important to complete work to agreed schedule.
9. The relevant legislation and codes of practice covering this area of work.
10. The importance of drainage systems working efficiently and effectively.
11. How to carry out inspections of drainage systems.
12. The importance of inspecting drainage systems according to schedule.
13. The types of problems that are likely to occur with drainage systems and how to deal correctly with these.
14. The types of damages which are likely to occur to services and surroundings and how to keep this to a minimum.

EVIDENCE GUIDE

For assessment purposes:

(1) Critical Aspects of Evidence

Assessment should involve observation of how you select and use hand tools, powered equipment and materials, and to decide the appropriate timing of operations and the work methods to be used and how you check the results and correct any faults.

Performance evidence must be provided for all of the performance criteria in this unit. However, supplementary evidence would be accepted with respect to how you inspect **drainage systems** according to agreed schedules.

In installing and maintaining drainage systems you must be able to use **two** of the following types of **tools and equipment**:

- a. Hand tools
- b. Mechanical

You must be able to use **two** of the following types of material:

- c. Concrete
- d. Clay
- e. Plastic
- f. Masonry
- g. Aggregate

You should show how to maintain **three** of the following types of **drainage systems**:

- h. Pipe
- i. Tile
- j. Mole
- k. Open
- l. Single
- m. Multiple

You should also demonstrate how to deal with **both** of the following types of **problems**:

- n. Blockages
- o. Leaks

Use of equipment, chemical and all other activities must meet the requirements of the law and relevant codes of practice.

(2) Methods of Assessment

Observation by your assessor of you:

- Locating and protecting underground and over ground services
- Using concrete, bricks, pipe materials, masonry and rubble
- Clearing up and disposing of debris
- Inspecting drainage systems
- Identifying and dealing with blockages and leaks

Answers to written or oral questions from your assessor.

(3) Context of Assessment

Evidence from simulations is **not** acceptable for this unit.