

U17102

Construct and maintain water features

Unit Descriptor:

This unit is about constructing and maintaining water features, for example: ponds, streams fountains and waterfalls. The typical materials and equipment you would use include: rocks and concrete, plastic ridged or flexible liners, electrically powered pumps and filters.

Because of the use of 110 mains supply, there are considerable health and safety implications in this unit.

ELEMENT**PEFORMANCE CRITERIA**

To be competent you must achieve the following:

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| 1. Construct and maintain water features | 1.1 Identify and prepare the necessary tools, equipment and materials for the work. |
| | 1.2 Select and direct the use of heavy duty equipment. |
| | 1.3 Prepare the site. |
| | 1.4 Construct the water feature according to the specification. |
| | 1.5 Use tools safely and correctly in a way which achieves their purpose. |
| | 1.6 Install equipment according to manufacturers' instruction and legal requirements. |
| | 1.7 Make sure that the work causes minimal disturbance to the site's environment. |
| | 1.8 Take the appropriate action if problems arise during the work. |
| | 1.9 Maintain health and safety during the work following relevant legislation and codes of practice. |
| | 1.10 Check the water feature on completion of work to make sure it is safe and fit for purpose. |

2. Maintain water features
- 1.11 Dispose of waste during and after construction safely and correctly.
 - 2.1 Inspect **water features** as required.
 - 2.2 Correctly identify **problems** with **water features**.
 - 2.3 Select tools, equipment and working methods to deal with the **problem**.
 - 2.4 Take safe and effective action to deal with these problems.
 - 2.5 Make sure surrounding areas are clean and tidy on completion.
 - 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: Construct water features

A. Select and use or direct the use of the following **tools**:

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

B. Select and install the following **equipment and materials**:

- (i) pumps
- (ii) filters
- (iii) plants and fish

C. Select and use **three** of the following materials:

- (i) rigid liners
- (ii) flexible liners
- (iii) concrete
- (iv) rocks
- (v) timber

D. Construct **one** of the following types of **water features**:

- (i) streams
- (ii) fountains
- (iii) water falls
- (iv) ponds

Element 2: Maintain water features

A. Maintain **one** of the following types of **water features**:

- (i) streams
- (ii) fountains
- (iii) waterfalls
- (iv) ponds

B. Identify and deal with three of the following problems:

- (i) leaks
- (ii) filters and pumps in need of cleaning
- (iii) malfunctioning filters and pumps
- (iv) filters and pumps in need of replacement
- (v) unhealthy plants and fish
- (vi) dirt and unwanted vegetation

UNDERPINNING KNOWLEDGE AND SKILLS

1. How to interpret specifications and the importance of following the specification.
2. The requirements of the specification and how to finish the water feature so that it meets the specification.
3. How to select the correct tools, equipment and materials for a water feature.
4. How to use the required tools and equipment safely and correctly.
5. How to use materials correctly.
6. The problems which may arise, including those caused by: accidental damage, pollution and difficulties with specification.
7. How to minimise problems and the appropriate action to take if problems occur.
8. Health and safety risks in this construction of water features, including the use of 240v mains supply.
9. Working methods that promote the health and safety of self and others.

10. Potential causes of damage to the environment and ways to preventing or minimizing them.
11. Your organisation's health and safety policy.
12. Your specific responsibilities under relevant legislation.
13. The potential conflicts between this work and conserving the natural environment.
14. How to dispose of inorganic and organic waste safely and correctly.
15. Methods of constructing the structure and/or surface and the relationship of this to its planned use.
16. How to carry out inspections of water features.
17. The importance of inspecting water features according to schedule.
18. The types of problems that are likely to occur with water features and how to deal correctly with these.
19. The type of damage which is likely to occur to services and surroundings and how to keep this to a minimum.
20. Why it is important to keep working areas clean and tidy according to clients' requirements.
21. Why it is important to complete work to agreed schedule.
22. The relevant legislation codes of practice covering this area to work.

EVIDENCE GUIDE

For assessment purposes:

(1) Critical Aspects of Evidence

Assessment should involve observation of how you construct and maintain water features, for example: ponds, streams, fountains and waterfalls. The typical materials and equipment you would use include: rocks and concrete, plastic ridged or flexible liners, electrically powered pumps and filters.

In demonstrating competence in constructing and maintaining water features you are required to:

- A. Select and use the following **tools**:
 - (i) Hand-held non-powered tools
 - (ii) Hand-held powered tools
- B. Install the following **equipment and materials**:
 - (i) Pumps
 - (ii) Filters
 - (iii) Plants and fish

C. Select and use water. Select and use **three** of the following **materials**:

- (i) Rigid liners
- (ii) Flexible liners
- (iii) Concrete
- (iv) Rocks
- (v) Timber

D. Construct **one** of the following types of **water features**:

- (i) Streams
- (ii) Fountains
- (iii) Waterfalls
- (iv) Ponds

Maintain **one** of the following types of **water features**:

- (i) Streams
- (ii) Fountains
- (iii) Waterfalls
- (iv) Ponds

F. Identify and deal with **three** of the following **problems**:

- (i) Leaks
- (ii) Filters and pumps in need of cleaning
- (iii) Reporting malfunctioning filters and pumps in need of replacement
- (iv) Dirt and unwanted vegetation
- (v) Unhealthy plants and fish

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:

- Constructing water features
- Maintaining water features
- Products of your work e.g. Water features which you constructed

Answers to written or oral questions from your assessor.

Witness testimony will be accepted from supervisors and colleagues on how you construct and maintain water features.

(3) Context of Assessment

Evidence from simulations **is** acceptable for this unit.