

C232 Provide foundations, substructures and edge details for sport/play surfaces and equipment

Introduction

Summary

This unit is about excavating and providing foundations for a variety of structures and surfaces. Excavations for structures include strip trenches, footings and post holes. Excavations for surfaces include bulk and trench. Foundations include concrete and other forms of backfill. Fill materials must be suitably compacted and the candidate should also provide for future fixings, such as sockets and anchorages. Surface foundations include unbound and bound mineral bases, contained by a variety of types of edge details.

The unit is divided into three parts. The first part gives some examples and explanations of some words we use in the unit. The second part describes the two things you have to do. These are:

C232.1 Provide foundations for structures

C232.2 Provide substructures and edge details

The third part describes the knowledge and understanding you must have.

Target Group

This unit is for operatives working in the sports surfaces installation and maintenance industry.

Linked Units

This unit links closely to units A513, C224 and C241.

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What We Mean By Some of the Words Used in this unit

Anchorage	<i>for example, cable fixing points, foundation bolts, bolted wall fixings</i>
Bonding agent	<i>a chemical coating to assist bonding one layer of concrete to another</i>
Bound materials	<i>for example, bituminous macadam, asphalt</i>
Cast in situ	<i>concrete which is place on site when wet; for example, mass concrete in brickwork foundations, backing concrete to kerbs</i>
Consolidate	<i>for example, using a roller or 'whacker' plate</i>
Edge details	<i>for example, pre-cast concrete kerbs, timber edgings, drainage blocks, block paviers</i>
Footings	<i>excavations for mass foundations</i>
Post holes	<i>excavations to take individual vertical posts</i>
Pre-cast concrete	<i>for example, kerbs, slabs etc.</i>
Rammed backfill	<i>in-filling which is consolidated manually</i>
Sockets	<i>apertures for fixings</i>
Strip trenches	<i>linear foundation excavations for walls</i>
Synthetic membrane	<i>man-made geo-textile sheet to separate sub-soil and base stone, for example Terram</i>
Tamped concrete	<i>concrete that is consolidated manually</i>
Timber elements	<i>for example, edging boards, wooden posts and rails</i>
Unbound materials	<i>for example, type 1 dry stone sub-base, graded gravel, slag</i>
Vibrated concrete	<i>concrete which is consolidated using a mechanical agitating device</i>

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C232.1

Provide foundations for structures

The National Standard

What you must do

To meet the national standard, you must:

- 1 **excavate** to the required shape and size and to specified alignment and spacing
- 2 provide foundations of specified **materials** of the right size, profile and finish
- 3 use suitable **materials** for backfilling and consolidate these to the required density
- 4 provide for **future fixings** in specified places using agreed methods
- 5 protect yourself, others and the environment from hazards
- 6 dispose of waste correctly

What you must cover

This element covers the following types of:

a excavations

- 1 footings
- 2 strip trenches

b materials

- 1 concrete
- 2 dug backfill
- 3 granular backfill

c compaction

- 1 tamped concrete
- 2 vibrated concrete
- 3 rammed backfill

d future fixings

- 1 anchorage
- 2 sockets

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C232.2

Provide substructures and edge details

The National Standard

What you must do

To meet the national standard, you must:

- 1 make **excavations** to the required shape and size and to specified alignment and spacing
- 2 provide **edge details** that are made of specified materials and have the right size, profile and finish
- 3 provide foundations for surfaces that are of the specified materials
- 4 form and compact **surface foundations** to the required levels and finish
- 5 where required, **prepare** the ground surface to receive **surface foundations** to specification
- 6 protect yourself, others and the environment from hazards
- 7 dispose of waste correctly

What you must cover

This element covers the following types of:

- a excavations**
 - 1 bulk
 - 2 trench
- b edge details**
 - 1 pre-cast concrete
 - 2 concrete cast in situ
 - 3 timber elements
- c surface foundations**
 - 1 unbound mineral base
 - 2 bound mineral base
- d ground preparation methods**
 - 1 spraying
 - 2 synthetic membrane
 - 3 bonding agent

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What you must know and understand

To be competent in this unit, you must know and understand the following

- K1 types and ratios of materials used in concrete
- K2 methods of mixing, placing, compacting and curing concrete
- K3 types of backfill and methods of consolidation
- K4 relevant statutory requirements
- K5 handling and lifting techniques and regulations
- K6 methods of disposing of waste
- K7 the types of equipment used for excavating footings and strip trenches
- K8 methods of excavating post holes and strip trenches
- K9 methods of forming pockets in concrete for future fixing
- K10 techniques for casting in fixing items
- K11 the types of equipment used for excavating bulk excavations and trenches
- K12 methods of excavating bulk excavations and trenches
- K13 types and uses of edge details
- K14 methods of installing edge details
- K15 methods of preparing surfaces to receive surface foundations
- K16 types of foundations for surfaces
- K17 methods of installing foundations for surfaces