

SUBSTRUCTURE WORKS

UNIT CODE: CON/CU/BUT/CR/02/4

RELATIONSHIP TO OCCUPATIONAL STANDARDS

This unit addresses the unit of competency: perform substructure works

DURATION OF UNIT: 140 hours

UNIT DESCRIPTION

This unit describes the competences required to perform substructure work. It involves setting out the building, excavating foundation, laying building foundation, erecting foundation walls, and constructing solid ground floor.

SUMMARY OF LEARNING OUTCOMES

1. Set out the building
2. Excavate building foundation
3. Lay building foundation
4. Erect foundation walls
5. Construct solid ground floor

Learning Outcomes, Content and Suggested Assessment Methods

Learning outcome	Content	Suggested assessment methods
1. Set out the building	<ul style="list-style-type: none">• Site investigation/surveying• Building drawings and interpretation• Construction dimensions• Setting out tools and equipment• Setting out procedure• Profile boards• Building codes	<ul style="list-style-type: none">• Written assignments• Written Tests• Practical projects• Practical Tests• Oral questioning• Observation of work procedures
2. Excavate building foundation	<ul style="list-style-type: none">• Excavation methods• Soil analysis• Timbering• Dewatering methods	<ul style="list-style-type: none">• Written assignments• Written Tests• Practical projects• Oral questioning• Observation of work procedures

3. Lay building foundation	<ul style="list-style-type: none"> • Types of foundations • Working drawings • Setting foundation levels • Foundation blinding • Assembly of foundation formwork • Foundation reinforcement • Architectural layout • Concrete placement 	<ul style="list-style-type: none"> • Written assignments • Written Tests • Practical projects • Practical Tests • Oral questioning • Observation of work procedures
4. Erect foundation walls	<ul style="list-style-type: none"> • Building codes • Working drawing • Foundation walling • Levelling • Mortar/ concrete technology • Damp proof membrane 	<ul style="list-style-type: none"> • Written assignments • Written Tests • Practical projects • Practical Tests • Oral questioning • Observation of work procedures
5. Construct solid ground floor	<ul style="list-style-type: none"> • Levelling of floor base • Construction materials • Termite control • Damp proof membrane • Formwork • Concrete technology • Floor reinforcement 	<ul style="list-style-type: none"> • Written assignments • Written Tests • Practical projects • Practical Tests • Oral questioning • Observation of work procedures

Suggested Methods of Instruction:

- Demonstration by trainer
- Practical work by trainee
- Demonstration videos
- Project
- Group discussions

Recommended Resources

Tools and equipment

- Measuring and drawing tools
- Computers/internet
- Masonry/building tools and equipment

Materials and supplies

- Building Codes
- Sand
- Ballast
- Cement
- Damp proofing materials
- Anti-termites
- Reinforcement/reinforcing bar
- Dewatering equipment
- Blinding material

Personal protective equipment (PPEs)

- Dust coat
- First aid kits
- Overalls
- Gum boots
- Safety goggles
- Helmets
- Gloves

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