

APPLY BUILDING MATERIALS SCIENCE

UNIT CODE: CON/OS/BUT/CC/01/4/A

UNIT DESCRIPTION

This unit describes the competence in applying building materials science. It involves identifying essential construction materials, identifying properties of construction materials, and demonstrating knowledge in use and handling of construction materials.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace function	These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range</i>
1 Identify properties of construction materials	1.1 <i>Physical properties</i> of construction materials are identified based on the type of construction material and codes of practice 1.2 <i>Chemical properties</i> of construction materials are identified based on the type of construction material and codes of practice 1.3 <i>Mechanical properties</i> of construction materials are identified based on the type of construction material and codes of practice
2 Use construction materials appropriately	2.1 Construction materials, tools and equipment are assembled based on construction methods 2.2 Construction materials are used based on construction process
3 Handle construction materials safely	3.1 Construction materials to be handled are identified 3.2 Safety requirements are identified based on the construction materials 3.3 Construction materials are handled safely based on the safety requirements

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	Range
1. Construction materials may include but is not limited to:	<ul style="list-style-type: none"> • stones • bricks • clay and clay products • lime • cement • timber and timber products • metals and alloys • roofing materials
2. physical properties may include but is not limited to:	<ul style="list-style-type: none"> • porosity • surface texture • strength • density • thermal conductivity • wear and tear
3. chemical properties may include but is not limited to:	<ul style="list-style-type: none"> • corrosion resistance • chemical resistance
4. Mechanical properties may include but is not limited to:	<ul style="list-style-type: none"> • Toughness • Hardness • Fatigue • Stress and strain • Creep and stress rapture

REQUIRED KNOWLEDGE

- Construction materials
- Quality assurance
- Materials handling safety procedures

SKILLS

- Analytical
- Quality control analysis
- Critical thinking

- Drawings interpretation

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Identified properties of construction materials 1.2 Appropriately used construction materials 1.3 Handled construction materials safely
2. Resource Implications	The following resources should be provided: 2.1 Samples of construction materials 2.2 Safety equipment
3. Methods of Assessment	Competency may be assessed through: 3.1 Written assignments 3.2 Written Exams 3.3 Practical projects 3.4 Practical exams 3.5 Oral questioning 3.6 Observation of work procedures
4. Context of Assessment	Competency may be assessed 4.1 On the Job, 4.2 Off the Job 4.3 During Industrial Attachment.
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.