DCSCON632: Use Construction in Engineering

UNIT CODE		**DCSCON632**	
UNIT TITLE		**Use construction in engineering**	
APPLICATION		This unit covers the competency to identify and select plant and construction techniques for use on civil engineering projects. The unit of competency is applied by drafting personnel in a civil and structural engineering environment for basic construction specifications. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.	
ELEMENTS		**PERFORMANCE CRITERIA**	
Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	Select suitable equipment and construction techniques to undertake earthworks.	1.1	Assess the nature and extent of the earthwork operation.
		1.2	Select the most appropriate plant to perform the earthworks.
		1.3	Estimate time and cost of performing the earthworks.
2	Select suitable techniques for laying pipes.	2.1	Assess the nature and extent of the pipe laying operation.
		2.2	Distinguish the features of a variety of pipes and systems commonly used in civil engineering practice.
		2.3	Select the most appropriate pipe laying technique.
3	Demonstrate knowledge of general civil engineering terms and features.	3.1	The distinguishing features of common civil engineering terms and features can be described.
		3.2	The distinguishing features and applications of a variety of civil structures can be described.
4	Demonstrate knowledge and understanding of structural steel construction.	4.1	Describe the processes involved and the roles of people involved in the structural steel construction industry.
		4.2	Develop a plan for the construction of a small steel structure.
		4.3	Schedule events, labour and plant for the construction of a small steel structure.
5	Demonstrate knowledge and understanding of road construction.	5.1	Road pavement types can be sketched, labelled and described.
		5.2	Materials used in building roads can be described.
		5.3	Plant and labour used in building roads can be described.
6	Demonstrate knowledge and understanding of concrete construction.	6.1	List the essential constituents of concrete.
		6.2	Describe the manufacture, transport, placing and finishing techniques used in a variety of construction applications.

DCSCON632: Use Construction in Engineering

FOUNDATION SKILLS Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.	
UNIT MAPPING INFORMATION No equivalent units.	
TITLE	**Assessment requirements for DCSCON632 Use construction in engineering**
PERFORMANCE EVIDENCE	To achieve competency in this unit, a person must satisfy the requirements of the elements and performance criteria, foundation skills and range of conditions included in the unit. The person must also: • perform all work in accordance with general civil engineering practices and procedures generally adopted by competent practitioners. • use an example to create one construction summary that includes the construction stages, types of building materials and structural components of a low-rise construction using appropriate terminology. • prepare relevant documentation Note: If a specific volume or frequency is not stated, then evidence must be provided at least once for each criterion.
KNOWLEDGE EVIDENCE	To achieve competency in this unit, a person must demonstrate knowledge of: • Earthworks – bulk v's detail, rock v's OTR, wet v's dry, suitability/mode of operation of equipment, production rates, costs, safety, quarry plant and tasks. • Pipework- uses (sewerage, stormwater, domestic water, conduits), bedding, jointing techniques, testing procedures, pits and ancillary structures, set-out and alignment, maintenance. • General civil aspects – types and uses of culverts and bridges, methods of tunnelling and tunnel alignment • Steel – people involved, design, shop detailing, ordering raw steel, fabrication, treatment, delivery and erection, bolting v's welding. • Roads – flexible pavements, rigid pavements, cross section, drainage, road furniture, plan construction stages, plan stockpiles, compaction. • Concrete – materials and ready-mix suppliers, roller compacted concrete, transporting, placing, finishing, curing, uses in bridges, buildings, roads and dams.

DCSCON632: Use Construction in Engineering

ASSESSMENT CONDITIONS	**Assessment Conditions:** All assessment must be completed in accordance with work health and safety standards. When assessments are conducted remotely, invigilation software must be used to ensure authenticity of work completed. Model answers or marking guides must be provided for all assessments to ensure reliability of assessment judgements when marking is undertaken by different assessors. Assessors must gather a range of evidence that is valid, sufficient, authentic, and current. Questioning techniques must not require language, literacy and numeracy skills beyond those required in this module. The candidate must have access to all tools, equipment, materials and documentation required. **Assessor Requirements:** Assessment must be conducted only by persons who: • hold vocational competencies at least to the level being delivered and assessed • maintain current industry skills directly relevant to the training and assessment being provided • hold a tertiary qualification in engineering or a related field • meet the assessor requirements specified in the current Standards for Registered Training Organisations (RTOs) • undertake ongoing professional development in vocational training, learning, and assessment, including competency-based training and assessment, as required by their RTO. The RTO must also ensure that trainers and assessors keep their industry knowledge up to date through ongoing professional development. The RTO must take appropriate steps, as an ongoing procedure, to verify information about trainer and assessor's qualifications.