Unit of Competency Template

UNIT CODE	**CPCPRE4001**
UNIT TITLE	**Inspect the erection of prefabricated concrete elements**
APPLICATION	This unit of competency specifies the skills and knowledge required to inspect the erection of prefabricated concrete elements on a construction site. It includes the inspection of safe work practices during the erection and temporary support of prefabricated concrete elements and the inspection of the erected elements. It requires overseeing the use of tools and equipment appropriate for the installation of prefabricated concrete elements and associated structural components, including temporary supports (propping and bracing), temporary and permanent connections, grouting, vertical and horizontal joints. Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.
PREREQUISITE UNIT	
COMPETENCY FIELD	
UNIT SECTOR	**Prefabricated Concrete**
ELEMENTS **Elements describe the essential outcomes.**	**PERFORMANCE CRITERIA** **Performance criteria describe the performance needed to demonstrate achievement of the element.**
1. Prepare to inspect the erection of prefabricated concrete elements.	1.1 Check the prefabricated concrete element records to ascertain progress and prepare for the physical inspection of the prefabricated concrete elements. 1.2 Check prefabricated concrete element records to ensure that safe systems of work and safe work practices have been enforced and followed.

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2. Conduct inspection of the erection of prefabricated concrete elements.	2.1 Check prefabricated concrete element manufacturing and inspection records to confirm design specifications have been followed in accordance with AS3850 during manufacture, storage, lifting and handling through to installation and final fixing. 2.2 Inspect placement and storage arrangements of prefabricated concrete elements onsite and ensure it confirms to the erection documentation as detailed in AS3850. 2.3 Inspect processes to ensure erection areas are cleared, exclusion zones set up, barriers erected, and site personnel advised of restricted access areas prior to erection of prefabricated concrete elements. 2.4 Inspect and confirm that fixings supplied for attachments to the permanent structure and for temporary supports comply with the requirements of the erection documentation approved by relevant personnel, AS3850 and the project specifications. 2.5 Inspect and confirm that temporary supports, dowels and shims are correctly placed, and components positioned in accordance with the erection documentation as detailed in AS3850, and project specifications. 2.6 Inspect safety systems and ensure that workers and contractors are following safety requirements during the erection of the prefabricated concrete elements. 2.7 Identify hazards, assess risks and create safe systems incorporating contingencies.

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3. Inspect prefabricated concrete element stability.	3.1 Inspect and confirm that the erected prefabricated concrete elements comply with the erection documentation approved by relevant personnel as detailed in AS3850 and engineering specifications. 3.2 Inspect and confirm that fixtures between structural steel components and temporarily supported elements comply with the erection documentation approved by relevant personnel and as detailed in AS3850, and engineering specifications. 3.3 Prior to removal of temporary bracing inspect integrity of the erected structure in accordance with the erection documentation. 3.4 Ensure that no temporary supports are removed and/or moved, re-positioned or replaced without the written approval of the project design engineer in accordance with AS3850. 3.5 Oversee the safe removal of temporary bracing, plant and equipment from site. 3.6 Inspect the completion of the erection work and clearing and cleaning of work areas prior to other trades being permitted to enter work zones. 3.7 Check if damage has occurred and if so, consult appropriate person to arrange for repair.
FOUNDATION SKILLS **Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.**	
UNIT MAPPING INFORMATION	**No equivalent unit.**
LINKS	**Link to Companion Volume Implementation Guide.**

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TITLE	**CPPPRE4001 Inspect the erection of prefabricated concrete elements.**
PERFORMANCE EVIDENCE	To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by • Inspecting three prefabricated concrete elements, including a braced prefabricated concrete wall panel with completed connections, grouting and caulking to ensure that the elements are compliant with AS3850.

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KNOWLEDGE EVIDENCE	To be competent in this unit, a candidate must demonstrate knowledge of:
	• compliance requirements of legislation, regulations, codes of practice and Australian Standards relevant to the erection of prefabricated concrete elements, including:
	  o AS3850.1, 2 & 3
	  o environmental protection and waste disposal
	  o OHS/WHS regulations, including Safe Work Australia 'Guide to managing risk in construction' 2019
	  o national standard for construction work and the code of practice for construction work
	• relevant OHS/WHS regulations, policies and codes of practice, including:
	  o use of personal protective equipment (PPE)
	  o fall protection
	  o drop zones
	  o hazardous substances
	  o safe manual handling techniques
	• health risks associated with silica dust exposure
	• erection design documentation
	• inspection site requirements:
	  o administrative
	  o training and risk management
	  o consultation and cooperation
	  o scheduling and contract adherence
	  o safe working method statements
	• drawings and specifications prefabricated concrete installation requirements
	• effects of temperature, wind and low humidity on the properties of prefabricated concrete:
	  o detrimental effect of water addition to concrete properties
	  o precautions that should be taken to minimise any potential adverse effects when finishing concrete
	• prefabricated concrete element records, including:
	  o set-out and marking plans
	  o element manufacturing records
	• temporary prefabricated concrete element supports, including:
	  o braces
	  o props
	• prefabricated concrete brace and prop specifications, including:
	  o placement of props
	  o erection sequence
	  o orientation of prefabricated concrete components
	  o bracing details including type and angle
	  o requirement for erection brace and prop footings
	  o levelling shims

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	○ types of fixings approved for attachment of support elements and their identification ○ types of fixings approved for the attachment of prefabricated concrete elements to other structural elements and the final structure ○ required installation procedures for fixings ○ methods for identification of incorrect fixing installation • project plans, drawings and specifications for tilt-up work • processes, procedures and techniques for: ○ lifting and placing tilt-up panels ○ securing panels to base ○ levelling and plumbing panels ○ temporary bracing panels ○ grouting, bracing, torquing, stabilisation and fixing of panels • competency and licensing requirements to operate plant and equipment and carry out tilt-up panel work • capacity and limitations of plant, lifting gear and equipment used in tilt-up work • capacity and limitations of rigging and equipment • workplace safety: ○ hierarchy of control ○ hazard identification ○ emergency first aid ○ emergency shutdown and stopping ○ working at heights ○ fall arrest equipment ○ scaffolding ○ access equipment ○ electrical hazards ○ overhead hazards ○ confined spaces • workplace requirements when working with prefabricated concrete components: ○ cleaning up the work area ○ maintaining and storing plant, labelling, tools and equipment ○ reporting problems ○ quality • possible defects, including: ○ strength of concrete which could compromise the strength of the prefabricated elements and pose a potential safety issue for lifting and handling ○ faulty manufacturing • types of concrete prefabricated concrete components • fire rating requirements relevant to concrete prefabricated concrete component rectification • workplace procedures related to communication protocols

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	• principles of sustainability relevant to material reuse
	• work planning and logical task sequencing
	• types, characteristics and limitations of tools, equipment and materials required for prefabricated concrete erections, including:
	  ○ chain slings
	  ○ flexible steel wire rope (FSWR) slings
	  ○ air winches
	  ○ chain blocks
	  ○ chain blocks
	  ○ drifts
	  ○ eye bolts
	  ○ hammers
	  ○ jacks
	  ○ podgers
	  ○ pulley blocks
	  ○ shackles
	  ○ spanners
	  ○ spirit levels and automatic levels
	  ○ tape measures
	  ○ trolleys
	  ○ turn buckles
	  ○ wedges
	  ○ wrenches.

ASSESSMENT CONDITIONS	Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations. Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations. Candidates must have access to relevant government building and construction industry codes and standards, erection design documentation, manufacturer specifications, materials, plant, tools and equipment required to achieve the performance evidence.
LINKS Mandatory field	Link to Companion Volume Implementation Guide.

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