Unit of Competency Template

UNIT CODE	**CPCPRE2001**
UNIT TITLE	**Brace and prop prefabricated concrete elements**
APPLICATION	This unit of competency specifies the skills and knowledge required to brace and prop prefabricated concrete elements. It requires using appropriate tools, equipment and material and working in a team environment on prefabricated concrete activities. It applies to those who work under the direction of a licensed rigger or who hold a rigging licence. Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work,* is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement. 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	CPCCWHS2001 Apply WHS requirements policies and procedures in the construction industry
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.**

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1. Access requirements to brace and prop prefabricated concrete elements.	1.1 Review and clarify prefabricated concrete installation task. 1.2 Review erection design documentation including task specifications, and check to make sure they are in accordance with regulations and codes of practice. 1.3 Review work health and safety (WHS) requirements for the task in accordance with safety plans and policies. 1.4 Identify safety signage and barricade requirements. 1.5 Review environmental requirements for the task in accordance with environmental plans and legislative requirements. 1.6 Access plant, tools, equipment, braces props, the required material and their respective safety specifications to carry out task. 1.7 Access set-out drawings and the erection design documentation to verify the location of prefabricated concrete installations.
2. Prepare to brace and prop prefabricated concrete elements.	2.1 Erect identified safety signage and barricade requirements, and fit personal protective equipment (PPE). 2.2 Obtain plant, tools, equipment, check for serviceability and rectify or report any faults. 2.3 Check braces and props for serviceability and rectify or report any faults. 2.4 Check braces and/or props are correctly labelled with working load limit (WLL) in accordance with AS 3850 Prefabricated concrete elements. 2.5 Review erection plan and access information on job sequencing, team roles and coordinated activities. 2.6 Verify that the concrete strength of the elements to be braced and the concrete supporting elements for the braces and props have attained the specified minimum strength in accordance with the erection design documentation.

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3. Conduct bracing and propping of prefabricated concrete elements.	3.1 Position braces and/or props in accordance with the erection design documentation and AS 3850 1,2 & 3 Prefabricated concrete elements. 3.2 Position levelling shims/packers to the nominated reduced level (RL) in accordance with the erection design documentation. 3.3 Prepare and install temporary and/or permanent braces and props, incorporating modifications, correct bolt and installation procedures in accordance with the erection design documentation and standards. 3.4 Clear all personnel from the drop zone during all lifting, handling and rotation operations. 3.5 Check that all support fixings are all correctly installed, checked and secured in accordance with the erection design documentation, with the correct tightening torque. 3.6 Confirm that the element is either adequately braced or fixed to and incorporated into the supporting structure prior to releasing the lifting equipment. 3.7 Check that the installed element is in the specified position and in accordance with the set-out drawings and erection design documentation. 3.8 Safely access lifting points and release lifting device in accordance with the instructions provided by the lifting clutch manufacturer.
4. Clean up.	4.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements. 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.
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.**

TITLE	**CPCPRE2001 Brace and prop prefabricated concrete elements**

PERFORMANCE EVIDENCE	To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by:
	• bracing two prefabricated concrete elements of a height not less than 7 metres and width 3 metres:
	  ○ one of which must be a prefabricated concrete wall panel braced with two braces
	  ○ one of which must include both primary and secondary bracing elements (knee, end and lateral-bracing or double knee-braces)
	• propping two prefabricated concrete elements, one of which must end propping only, and the other to be continuously shored.

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KNOWLEDGE EVIDENCE	To be competent in this unit, a candidate must demonstrate knowledge of:
	• compliance requirements of legislation, regulations, codes and Australian Standards relevant to brace and prop of prefabricated concrete elements:
	  ○ AS 3850.1, 2 & 3 Prefabricated concrete elements
	  ○ environmental protection and waste disposal
	  ○ work health and safety (WHS) regulations, including:
	  ▪ Safe Work Australia 'Guide to managing risk in construction: prefabricated concrete' 2019
	  ▪ use of personal protective equipment (PPE)
	  ▪ fall protection
	  ▪ drop zones
	  ▪ hazardous substances
	  ▪ safe manual handling techniques
	  ▪ safe manual lifting procedures
	• risk assessment process for lifting and securing prefabricated elements erection design documentation:
	  ○ set-out details
	  ○ element mass
	  ○ rigging diagrams
	  ○ component geometry
	• the strength of concrete at the time of lifting and handling from the manufacturers' "birth certificate" contained in the erection documentation
	• faulty manufacturing and concrete defects which could compromise the strength of the prefabricated elements and pose a potential safety issue for lifting and handling
	• types of drawings and specifications used to interpret concrete installation requirements
	• erection documentation
	• prefabricated concrete brace and prop specifications, including:
	  ○ erection sequence
	  ○ orientation of prefabricated concrete elements
	  ○ bracing details, including type and angle
	  ○ requirement for erection brace and prop footings
	  ○ levelling shims
	  ○ drawings
	• types of bracing, including:
	  ○ single storey (drop-in) panel propping
	  ○ double storey (spin-up) panel propping
	  ○ panel to panel propping
	  ○ beam propping
	  ○ spandrels propping
	  ○ column bracing
	  ○ lateral bracing
	  ○ end bracing
	  ○ main bracing

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	○ knee bracing ○ deadman bracing • types of propping, including: ○ single props (Acrow) ○ single frame ○ continuous frame • types of concrete prefabricated elements, including: ○ dowell bar ○ panels ○ columns ○ beams ○ planks ○ stairs ○ barriers • workplace requirements when working with prefabricated concrete elements: ○ cleaning up the work area ○ maintaining and storing plant, labelling, tools and equipment ○ adhering to manufacturer specifications ○ reporting problems ○ quality • types of prefabricated concrete elements • types of support fixings, including: ○ brace footing ○ ferrule bolts ○ brace pins • fire rating requirements relevant to concrete prefabricated element rectification • workplace procedures related to communication protocols • principles of sustainability relevant to material reuse • logical task sequencing • types, characteristics and limitations of tools, equipment and materials required for propping and bracing prefabricated concrete elements, including: ○ hammers ○ jacks ○ podgers ○ spanners ○ spirit levels and automatic levels ○ tape measures ○ trolleys ○ wedges ○ wrenches ○ hammer lock ○ theodolite ○ post-installed anchors ○ bolting procedures ○ cast-in-threaded inserts for Class 4.6 bolts • concrete supporting elements, including: ○ floor slabs

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	○ piers ○ footings.
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 erection design documentation, materials, manufacturer specifications, plant, tools and equipment required to achieve the performance evidence.
LINKS Mandatory field	https://vetnet.gov.au/pages/trainingdocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad

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