

## Unit of Competency Template

<b>UNIT CODE</b>	<b>CPCPRE3001</b>
<b>UNIT TITLE</b>	<b>Patch prefabricated components of concrete elements</b>
<b>APPLICATION</b>	<p>This unit of competency specifies the skills and knowledge required to patch prefabricated components of concrete elements. It requires using appropriate tools, equipment, materials and working at heights and in a team environment. A person who has achieved this unit of competency would be expected to follow safety regulations and relevant specifications.</p> <p>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.</p>
<b>PREREQUISITE UNIT</b>	Nil
<b>COMPETENCY FIELD</b>	
<b>UNIT SECTOR</b>	<b>Prefabricated concrete</b>
<b>ELEMENTS</b>  Elements describe the essential outcomes.	<b>PERFORMANCE CRITERIA</b>  Performance criteria describe the performance needed to demonstrate achievement of the element.

<b>1. Determine requirements to patch prefabricated components of concrete elements.</b>	<p>1.1 Review and clarify prefabricated concrete element patch task according to the approved repair procedure, project specifications and material data safety sheets.</p> <p>1.2 Determine location of the components of prefabricated concrete elements from drawings and/or patching schedule.</p> <p>1.3 Determine the materials and patching procedures and check to ensure they comply with the approved repair procedure and are in accordance with relevant legislation, regulations, standards and codes of practice.</p> <p>1.4 Review work health and safety (WHS) requirements for the task in accordance with safety plans and policies.</p> <p>1.5 Identify safety signage and barricade requirements.</p> <p>1.6 Review environmental requirements for the task in accordance with environmental plans and legislative requirements.</p> <p>1.7 Determine plant, tools, equipment, and materials required to carry out task.</p>
<b>2. Prepare to patch prefabricated components of concrete elements.</b>	<p>2.1 Erect identified safety signage and barricade requirements, and fit personal protective equipment (PPE).</p> <p>2.2 Obtain plant, tools, equipment, check for serviceability and rectify or report any faults.</p> <p>2.3 Check tools for serviceability and rectify or report any faults.</p> <p>2.4 Check panels for damage or cracks and report to appropriate person.</p>
<b>3. Mix prefabricated concrete patch agents.</b>	<p>3.1 Access patching substance for prefabricated concrete components in accordance with safety requirements and hazardous substances code of practice.</p> <p>3.2 Measure liquid and powdered substance ratios according to manufacturer specifications and pour into mixing container without spillage.</p> <p>3.3 Check mix is lump free, impose curing times with cognisance to environmental variables and attain the required consistency in accordance with manufacturer specifications.</p>
<b>4. Undertake the patching of prefabricated components of concrete elements.</b>	<p>4.1 Determine the position of the prefabricated components of concrete elements that require patching.</p> <p>4.2 Provide suitable access to work-zone in accordance with the specifications and safety standards.</p> <p>4.3 Review the approved patching procedure and specifications and determine job sequencing and team roles.</p> <p>4.4 Access correct/approved patching materials and tools, including adequate quantity.</p> <p>4.5 Complete patching in accordance with the approved repair procedures including curing as specified.</p> <p>4.6 Once complete, undertake sign off procedures in accordance with approved repair procedure.</p>

<b>5. Clean up.</b>	<p>4.1 Clear work area and dispose of, re-use or recycle materials in accordance with regulatory and workplace requirements.</p> <p>4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturer and workplace requirements.</p>
<b>FOUNDATION SKILLS</b>  <b>Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.</b>	
<b>UNIT MAPPING INFORMATION</b>	No equivalent unit.
<b>LINKS</b>	Link to Companion Volume Implementation Guide.

<b>TITLE</b>	<b>CPCPRE3001 Patch prefabricated components of concrete elements</b>
<b>PERFORMANCE EVIDENCE</b>	<p>To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by</p> <ul style="list-style-type: none"> <li>• patching two prefabricated components of concrete elements.</li> </ul>

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<p><b>KNOWLEDGE EVIDENCE</b></p>	<p>To be competent in this unit, a candidate must demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>• compliance requirements of legislation, regulations, codes and Australian Standards relevant to concrete patching, in particular for the repair of prefabricated concrete elements: <ul style="list-style-type: none"> <li>○ environmental protection and waste disposal</li> <li>○ OHS/WHS regulations</li> <li>○ ASHB84 2018 related to prefabricated concrete elements</li> </ul> </li> <li>• detrimental effect of water addition to concrete properties</li> <li>• precautions that should be taken to minimise any potential adverse effects to the use of varying patching materials</li> <li>• types of procedures, drawings and specifications used to interpret prefabricated concrete element patching requirements</li> <li>• approved repair procedure</li> <li>• material data sheets</li> <li>• manufacturer specifications</li> <li>• types of prefabricated concrete element patching, including: <ul style="list-style-type: none"> <li>○ treatment of cracks</li> <li>○ surface preparation for volume replacements</li> <li>○ cosmetic volume replacements</li> <li>○ structural volume replacements</li> <li>○ priming and surface preparation</li> <li>○ installation of supplementary reinforcement</li> <li>○ repair layering and build-up</li> <li>○ fairing coats, colour and texture matching</li> <li>○ concrete sealing and methods of injection</li> </ul> </li> <li>• prefabricated component of concrete element patching considerations, including: <ul style="list-style-type: none"> <li>○ physical/permeability compatibility</li> <li>○ chemical compatibility</li> <li>○ electro chemical compatibility</li> <li>○ dimensional stability – coefficient of thermal expansion, modulus of elasticity, drying shrinkage</li> </ul> </li> <li>• prefabricated component of concrete element patching evaluation methods, including: <ul style="list-style-type: none"> <li>○ visual inspection and recording</li> <li>○ hammer sounding/rebound hammer test</li> <li>○ phenolphthalein test for carbonation</li> <li>○ half-cell potential measurement</li> <li>○ core-cutting</li> <li>○ chemical analysis of prefabricated concrete element at different depths</li> </ul> </li> <li>• workplace requirements when working with prefabricated concrete components and elements: <ul style="list-style-type: none"> <li>○ cleaning up the work area</li> <li>○ maintaining and storing plant, labelling, tools and</li> </ul> </li> </ul>
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	<ul style="list-style-type: none"> <li>equipment <ul style="list-style-type: none"> <li>○ reporting problems</li> <li>○ quality</li> </ul> </li> <li>• fire rating requirements relevant to concrete prefabricated concrete elements rectification</li> <li>• workplace procedures related to communication protocols</li> <li>• relevant OHS/WHs regulations, policies and codes of practice, including: <ul style="list-style-type: none"> <li>○ use of personal protective equipment (PPE)</li> <li>○ fall protection</li> <li>○ drop zones</li> <li>○ hazardous substances</li> <li>○ safe manual handling techniques</li> <li>○ safety when working at heights</li> </ul> </li> <li>• approved repair procedure</li> <li>• principles of sustainability relevant to material reuse</li> <li>• work planning and logical task sequencing</li> <li>• types, characteristics and limitations of tools, equipment and materials required for the repair of prefabricated concrete elements, including: <ul style="list-style-type: none"> <li>○ stitch plates</li> <li>○ ferrules</li> <li>○ grout tubes</li> <li>○ lifting points</li> <li>○ hammers</li> <li>○ jacks</li> <li>○ podgers</li> <li>○ spanners</li> <li>○ tape measures</li> <li>○ turn buckles</li> <li>○ wedges</li> <li>○ wrenches</li> <li>○ jack-hammer</li> <li>○ scabbler</li> <li>○ bush hammer</li> <li>○ needle scaler</li> <li>○ primers</li> <li>○ low viscosity epoxy adhesives</li> <li>○ curing compounds.</li> </ul> </li> </ul>
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<b>ASSESSMENT CONDITIONS</b>	<p>Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.</p> <p>Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.</p> <p>Candidates must have access to documentation, approved repair procedure, manufacturer specifications, material data safety sheets, materials, plant, tools and equipment required to achieve the performance evidence.</p>
<b>LINKS</b>	<p><a href="#">Link to Companion Volume Implementation Guide.</a></p>