



Australian Government

Assessment Requirements for CPCPRE3001 Patch prefabricated components of concrete elements

Release: 1

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Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 9.0.

Newly created unit.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by patching components within a precast element, including:

a Stitch Plate recess (200mm x 200mm x 35mm deep min.) and any two of the following:

- a lifting insert void former (5 tonne lifting insert recess min.)
- a cast-in-insert recess (M20 ferrule nailing plate recess)
- a grouting duct (50mm diameter grout duct recess).

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 concrete patching, in particular for the repair of prefabricated concrete elements:
 - environmental protection and waste disposal
 - work health and safety (WHS) regulations, including:
 - use of personal protective equipment (PPE)
 - fall protection
 - risk when working at heights/on ladders
 - drop zones
 - hazardous substances
 - safe manual handling techniques
 - safety when working at heights
 - respirable crystalline silica
 - SA HB 84-2018 Guide to Concrete Repair and Protection
- detrimental effect of water addition to concrete properties
- precautions that should be taken to minimise any potential adverse effects to the use of varying patching materials

- types of procedures, drawings and specifications used to interpret prefabricated concrete element patching requirements
- approved repair procedure
- material data sheets
- manufacturer specifications for patching agents
- types of prefabricated concrete element patching, including:
 - treatment of cracks
 - surface preparation for volume replacements
 - cosmetic volume replacements
 - structural volume replacements
 - priming and surface preparation
 - installation of supplementary reinforcement
 - repair layering and build-up
 - fairing coats, colour and texture matching
 - concrete sealing and methods of injection
- prefabricated component of concrete element patching considerations, including:
 - physical/permeability compatibility
 - chemical compatibility
 - electrochemical compatibility
 - dimensional stability – coefficient of thermal expansion, modulus of elasticity and drying shrinkage
- prefabricated component of concrete element patching evaluation methods, including:
 - visual inspection and recording
 - hammer sounding/rebound hammer test
 - phenolphthalein test for carbonation
 - half-cell potential measurement
 - core-cutting
 - chemical analysis of prefabricated concrete element at different depths
- workplace requirements when working with prefabricated concrete components and elements:
 - cleaning up the work area
 - maintaining and storing plant, labelling, tools and equipment
 - reporting problems
 - quality
- fire rating requirements relevant to concrete prefabricated concrete elements rectification
- workplace procedures related to communication protocols
- repair procedure approval
- principals of sustainability relevant to material reuse
- work planning and logical task sequencing
- types, characteristics and limitations of tools, equipment and materials required for the repair of prefabricated concrete elements, including:

- stitch plate
- ferrules
- grout tubes
- lifting points
- hammers
- jacks
- podgers
- spanners
- tape measures
- turn buckles
- wedges
- wrenches
- jackhammer
- scabbler
- bush hammer
- needle scaler
- primers
- low viscosity epoxy adhesives
- curing compounds.

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 documentation, approved repair procedure, manufacturer specifications, material data safety sheets, materials, plant, tools and equipment required to achieve the performance evidence.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>