



Australian Government

CPCCSF3003 Carry out multistrand post-tensioning

Release: 2

CPCCSF3003 Carry out multistrand post-tensioning

Modification History

- Release 2 Updated reference to general construction induction training program.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCCSF3003A Carry out multistrand post-tensioning. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to carry out multistrand post-tensioning in accordance with specifications. It includes planning and preparing for the work, laying and fixing anchorages and cables, defining the work area, stressing tendons, finishing tensioning and cleaning up.

It applies to workers carrying out multistrand post-tensioning for a construction project, and who would be expected to take responsibility for organising and completing these tasks with a high degree of self direction.

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.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Steelfixing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Plan and prepare to | 1.1 Interpret work order and associated documentation and |
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| carry out multistrand post-tensioning. | | clarify requirements with relevant persons. |
| | 1.2 | Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements. |
| | 1.3 | Select tools and equipment required for work tasks, check for serviceability and rectify or report identified faults. |
| | 1.4 | Calculate materials quantities and curing requirements. |
| | 1.5 | Obtain, prepare and safely handle materials for the task, and situate them ready for use. |
| | 1.6 | Erect required safety signage and barricades and fit personal protective equipment (PPE). |
| 2 Lay and fix anchorages and cables. | 2.1 | Fix tendons and recess formers in location in accordance with job drawings. |
| | 2.2 | Lay ducting profile, push through specified number of strands and verify in accordance with job drawings. |
| | 2.3 | Position profile anchorages in accordance with specifications. |
| | 2.4 | Position form head and anchorages in accordance with specifications. |
| | 2.5 | Inspect installed cables in accordance with specifications and relevant standards. |
| | 2.6 | Fix grout tubes in accordance with manufacturer requirements and engineering specifications. |
| | 2.7 | Monitor grout tubes during concrete pour. |
| 3 Define work area for multistrand post-tensioning. | 3.1 | After suitable curing time, define safe working area in accordance with WHS and regulatory requirements. |
| | 3.2 | Erect barricades and signage as required to isolate safe work areas. |

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| 4 Stress tendons. | 4.1 Remove recess formers. |
| | 4.2 Set up anchor blocks and wedges in accordance with manufacturer design. |
| | 4.3 Carry out stressing operations to nominated loads in accordance with engineering standards using authorised calibrated stressing equipment. |
| | 4.4 Measure extensions and record on standard forms for approval by engineer. |
| 5 Finish tensioning. | |
| | 5.1 Cut and seal protruding strands in accordance with manufacturer requirements. |
| | 5.2 Mix cement grout and pump in accordance with specifications and relevant standards. |
| 6 Clean up. | |
| | 6.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements. |
| | 6.2 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

Supersedes and is equivalent to CPCCSF3003A Carry out multistrand post-tensioning.

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>

Assessment Requirements for CPCCSF3003 Carry out multistrand post-tensioning

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Performance Evidence

To demonstrate competency in this unit, a candidate must meet the elements and performance criteria by carrying out a full multistrand post-tensioning cycle to specification that includes using:

- a multistrand cable of at least 15 strands
- a minimum of 30 m in length
- standard tensioning.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace and regulatory requirements for carrying out multistrand post-tensioning under applicable Commonwealth, state or territory work health and safety (WHS) legislation and codes of practice:
 - job safety and environmental analyses (JSEAs)
 - safe work method statements (SWMSs)
 - safety data sheets (SDSs)
 - safety manuals and instructions for tools and equipment
 - signage and barricades
 - personal protective equipment (PPE)
 - working at heights requirements
 - environmental and worksite safety plans
 - reporting problems
- use of multistrand post-tensioning to replace standard reinforcement materials with cables and, through tensioning, provide required strength in a reduced thickness of concrete
- interpretation of post-tensioning plans, including position of cables, height of chairs, cable specifications, number of strands per cable and stressing loads

- types, characteristics and limitations of tools and equipment used to carry out multistrand post-tensioning:
 - angle grinders
 - grouting equipment
 - hacksaws
 - hammers
 - hydraulic power packs
 - measuring tapes and rules
 - multistrand jacks
 - nips
 - spanners
 - staple guns
 - steelfixing reels
 - specialist material-handling gloves
- requirements for using multistrand post-tensioning tools and equipment:
 - safe operating procedures
 - operational, maintenance and intermediate diagnostic procedures
 - workplace and equipment safety requirements
- requirements for cleaning up work area, maintaining and storing tools, equipment and materials, and for environmentally friendly waste management.

Assessment Conditions

Assessors must meet the requirements for assessors outlined 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:

- industry-standard equipment required to perform the tasks specified in the Performance Evidence
- appropriate workplace information and records, including policies, procedures and legislative requirements.

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