UNIT CODE	CPCCBL3010
UNIT TITLE	Construct masonry arches
APPLICATION	This unit specifies the skills and knowledge required to construct various types of masonry arches within walls and above columns or attached piers. This unit applies to bricklayers and blocklayers who construct masonry arches in new or existing structures. It is suitable for people operating with some autonomy. A person working at this level would be expected to take responsibility for organising and completing tasks assigned to them without needing close supervision. Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 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.
PREREQUISITE UNIT	CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry
ELEMENTS	PERFORMANCE CRITERIA
Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1. Prepare for work.	1.1 Select, fit correctly and use personal protective equipment (PPE) appropriate for job. 1.2 Read, interpret and apply masonry arch construction requirements from current plans, specifications and codes. 1.3 Follow requirements in workplace safety and environmental documentation and workplace procedures. 1.4 Calculate material quantities required for the task. 1.5 Determine job priorities and sequence job tasks in consultation with others on site. 1.6 Identify potential hazards and determine and implement control measures.

	1.7 Select and check condition of plant, equipment and tools and report damage or faults to relevant person. 1.8 Check conformity of materials against the specifications and place materials in preparation for the work.
2. Construct wall to springing line of arch.	2.1 Set out location of first course and determine span of arch. 2.2 Lay abutting walls maintaining plumb, gauge and level up to springing line to comply with Australian standards tolerances.
3. Set up arch template.	3.1 Set out arch centre and curve and where appropriate produce a full-size drawing of arch. 3.2 Transfer shape to template materials and cut to shape. 3.3 Locate arch template to height of springing line and crown. 3.4 Adjust toms and wedges or adjustable metal props to ensure arch centre and springing line is level.
4. Cut and lay voussoirs.	4.1 Use full size drawing to determine voussoir shape and size. 4.2 Mark, cut and test voussoirs for parallel joints. 4.3 Lay voussoirs around arch centre. 4.4 Cut and lay spandrels maintaining even collar joints.
5. Clean up.	5.1 Clear the work area, and dispose of, reuse or recycle materials following workplace and environmental requirements. 5.2 Clean tools and equipment, check for serviceability and report damage or faults. 5.3 Store and secure tools and equipment following workplace procedures.

FOUNDATION SKILLS

Candidates require:

- numeracy skills to:
  - use measurements and formulas to calculate material quantities
  - apply geometry to arch set out
- technology skills to:
  - use digital tools and devices to source job information and communicate effectively with others.

UNIT MAPPING	Supersedes and is equivalent to CPCCBL3010A Construct masonry

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

TITLE	Assessment requirements for CPCCBL3010 Construct masonry arches

PERFORMANCE EVIDENCE

To demonstrate competency in this unit, a candidate must meet the performance criteria of this unit by:

- constructing an ungauged segmental arch using brick or block
- constructing three other brick or block arches from the following:
    - ungauged semicircular arch
    - multicentre arch
    - gothic arch
    - ungauged bull's eye arch.

In doing this, the candidate must:

- calculate and develop a full-scale template for a gothic arch
- carry out calculations to determine voussoir size and shape for a bull's eye arch
- build abutments to the specified height maintaining gauge and bond
- fit the arch centre allowing for ease of stripping on completion
- comply to the brickwork tolerances stated in the current Australian Standards and codes.

KNOWLEDGE EVIDENCE

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

- characteristics, applications and limitations of materials used for masonry arch construction
- processes and techniques for:
    - setting out and constructing various types of arches
    - preparing voussoirs for an arch
    - setting out, cutting, assembling and fitting arch templates
- categories and terminologies relating to arches
- structural and load bearing forces applied to arches
- features of working drawings and specifications
- mortar ingredients and consistency
- functional and operational features of plant, equipment, hand and power tools
    - battery operated tools
- workplace safety:
    - job safety and environmental analysis (JSEA)
    - working safely at heights
    - erecting and dismantling work platforms
    - exposure to silica
    - exposure to loud noise

• key requirements of the National Construction Code (NCC) relevant to masonry arch construction • environmental requirements for workplace processes and waste disposal.	
ASSESSMENT CONDITIONS	
Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations. This unit must be assessed in the workplace or a close simulation reflecting workplace conditions and standards, materials, equipment, activities, responsibilities, procedures, safety requirements and environmental considerations.	
LINKS	Companion volumes to this training package are available at the VETNet website: https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad