



Australian Government

Assessment Requirements for AURBTJ003 Design and build bicycle wheels

Release: 1

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Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standard defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- design and build three different bicycle wheels to specification, with each wheel including:
 - lacing a 32 hole three-cross spoke pattern
 - disc and non-disc brake specific patterns.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to designing and building bicycle wheels, including procedures for:
 - manually handling bicycle wheels
 - identifying workplace hazards
 - using tools and equipment, including personal protective equipment (PPE)
- environmental requirements, including procedures for disposing of waste materials
- key bicycle terminology relating to wheel build for different bicycle types
- key features to be considered in wheel design:
 - hubs, spoke and rim selection
 - 32 hole three-cross spoke pattern
 - disc and non-disc brake specific patterns
 - symmetrical and asymmetrical patterns
 - wheel dynamics and loading
- wheel and hub mechanical principles

- bicycle wheel components specified in the range of conditions and their specifications
- types and use of tools and equipment used to design and build bicycle wheels
- techniques for designing and building bicycle wheels, including:
 - material used in bicycle wheels
 - lacing and spoke pattern
 - calculating spoke lengths
 - assembly, truing and tensioning of wheels
 - symmetrical and asymmetrical patterns of wheels
 - wheel dynamics and loading
 - torque measurement and adjustment of wheels
 - wheel and hub testing procedures.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the bicycle wheels they have designed and built, e.g. build orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- bicycle workplace or simulated workplace
- workplace instructions detailing job requirements
- manufacturer and technical bicycle wheel specifications
- PPE required to design and build bicycle wheels
- wheel components specified in the range of conditions
- three different bicycle wheels as specified in the performance evidence requiring a complete build
- tools and equipment appropriate for designing and building bicycle wheels.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

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