



Australian Government

AURMTA003 Determine material suitability for competition vehicle components

Release: 1

AURMTA003 Determine material suitability for competition vehicle components

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to determine material suitability for constructing competition vehicle components. It involves determining component performance specifications, researching component operating environments, establishing material specifications for the components, and testing material suitability. It involves producing new components from a design as well as producing existing components from new material.

It applies to those working in the motor sport industry.

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

Competency Field

Motor Sport

Unit Sector

Technical

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Establish component performance specifications	1.1 Component specifications are determined from <i>performance specifications</i> 1.2 Component operating environment is established

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	1.3 Component operating function is confirmed 1.4 Component performance specifications are prepared
2. Establish material performance specifications	2.1 Material operating function is confirmed 2.2 Criteria to be used in selection of material and in evaluation of outcomes are identified and documented 2.3 Specifications for material are accessed and interpreted 2.4 Legal and safety impacts of material chosen are considered and responded to according to regulatory and team obligations and practices 2.5 Material performance specifications are prepared and documented to industry and team standards
3. Test material suitability against material performance specifications	3.1 Material capable of undertaking the required operating function is identified 3.2 Proposed material is selected following identification, consideration and evaluation of full range of available and relevant options 3.3 Material is selected or constructed to component specifications, according to manufacturer specifications, workplace procedures and safety requirements 3.4 Selected option, including material choices and processes, is developed in detail and progressively validated against established criteria 3.5 Test material is tested against material performance specifications 3.6 Causes of material failure are identified as required 3.7 Testing procedures and results are documented, including recommendations for material use
4. Test component suitability against component performance specifications	4.1 Component test procedures are determined 4.2 Component is tested against component performance specifications according to manufacturer specifications, workplace procedures, and safety and environmental requirements 4.3 Testing procedures and results are documented, including recommendations for component use

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	adapt procedures to different vehicles, components and materials.
Reading skills to:	- interpret team instructions and procedures and controlling body rules, category rules and supplementary regulations - interpret information from material manufacturer specifications.
Writing skills to:	- document material selection criteria and performance specifications - document test results of material and component suitability.
Oral communication skills to:	clarify instructions and material requirements, report findings, and make recommendations regarding material suitability.
Numeracy skills to:	interpret numbers and units of measurement of material specifications and testing equipment.
Planning and organising skills to:	plan own work requirements and prioritise and sequence actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Self-management skills to:	work efficiently with minimal supervision.
Technology skills to:	operate specialised material testing equipment.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Performance specifications</i> must include:	- design, quality, material, equipment and required quantities allowable in: - regulatory body and category rules - event supplementary regulations - component supplier specifications - team instructions.
<i>Safety requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: - following equipment and system isolation requirements

	• selecting and using personal protective equipment (PPE).
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Unit Mapping Information

Equivalent to AURMTA5003 Determine material suitability for competition vehicle components

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for AURMTA003 Determine material suitability for competition vehicle components

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Performance Evidence

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

- determine material suitability for two different competition vehicle components of which:
 - one component must be made of metal
 - one component must be made of a composite material.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to determining material suitability for competition vehicle components, including procedures for:
 - following equipment and system isolation requirements
 - selecting and using personal protective equipment (PPE)
- key requirements of regulatory body and category rules and their impact on component supplier specifications
- types of materials suitable for competition vehicle components, including:
 - metals and alloys
 - plastics
 - fibreglass
 - carbon
 - Kevlar
- properties of material suitable for competition vehicle components, including:
 - molecular structure of material
 - physical properties of fabrication material and material composites

- chemical properties of fabrication material and material composites
- mechanical properties of fabrication material and material composites
- material treatment processes
- causes of material degradation
- material and component testing procedures, including:
 - destructive
 - non-destructive.

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 material that they have tested to determine its suitability for competition vehicle components, e.g. work order.

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

The following resources must be made available:

- motor sport workplace or simulated workplace
- workplace instructions
- customer requirements, organisational procedures, safety procedures and regulations
- competition vehicles requiring components specified in the performance evidence
- material, testing equipment and fabrication equipment for the two different competition vehicle components specified in the performance evidence
- tools and equipment appropriate for determining material suitability for competition vehicle components.

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