



Australian Government

AURMTA103 Determine material suitability for competition vehicle components

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with AUR Automotive Retail, Service and Repair Training Package Version 6.0

Application

This unit describes the skills and knowledge 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.

The unit 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.

Unit Sector

Motorsport Technical

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Establish component performance specifications	1.1 Determine component specifications from performance specifications 1.2 Establish component operating environment 1.3 Confirm component operating function 1.4 Prepare component performance specifications
2. Establish material performance specifications	2.1 Confirm material operating function 2.2 Identify and document criteria to be used in selection of material and in evaluation of outcomes

ELEMENTS	PERFORMANCE CRITERIA
	2.3 Access and interpret specifications for material 2.4 Consider and respond to legal and safety impacts of material chosen according to regulatory and team obligations and practices 2.5 Prepare and document material performance specifications to industry and team standards
3. Test material suitability against material performance specifications	3.1 Identify material capable of undertaking the required operating function 3.2 Select proposed material following identification, consideration and evaluation of full range of available options 3.3 Select or construct material to component specifications, according to manufacturer specifications, workplace procedures and safety requirements 3.4 Develop selected option, including material choices and processes, in detail and validate progressively against established criteria 3.5 Test material against material performance specifications 3.6 Identify causes of material failure as required 3.7 Document testing procedures and results
4. Test component suitability against component performance specifications	4.1 Determine component test procedures 4.2 Test component against component performance specifications according to manufacturer specifications, workplace procedures, and safety and environmental requirements 4.3 Document testing procedures and results

Foundation Skills

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

SKILL	DESCRIPTION
Learning	- Locates required sources of information efficiently - Adapts procedures to different vehicles, components and materials.
Numeracy	Interprets numbers and units of measurement of material specifications and testing equipment.
Oral communication	Clarifies instructions and material requirements, report findings, and make recommendations regarding material

SKILL	DESCRIPTION
	suitability.
Reading	• Interprets team instructions and procedures and controlling body rules, category rules and supplementary regulations • Interprets information from material manufacturer specifications.
Writing	• Documents material selection criteria and performance specifications.
Planning and organising	• Plans own work requirements • Prioritises actions to achieve required outcomes • Ensures tasks are completed within workplace timeframes.
Self-management	• Works efficiently with minimal supervision.
Technology	• Operates specialised material testing equipment.

Unit Mapping Information

Supersedes and is equivalent to AURMTA003 Determine material suitability for competition vehicle components.

Links

Companion Volume Implementation Guide is found on VETNet -

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

Assessment Requirements for AURMTA103 Determine material suitability for competition vehicle components

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

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

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- methods to locate and interpret information required to determine material suitability for competition vehicle components, including:
 - information provided by customer and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to determine material suitability for competition vehicle components, including:
 - establishing serviceability of tools and equipment
 - documentation procedures
 - housekeeping procedures, including:
 - examination of tools and equipment
 - storage of equipment
 - identification, tagging and isolation of faulty equipment
 - disposal of excess materials
 - recycling procedures
- work health and safety (WHS) 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)
- methods of panel creation
- key requirements of regulatory body and category rules and their impact on component supplier specifications
- performance specifications for components, including:
 - design, quality, material, equipment and required quantities allowable in regulatory body and category rules, event
 - regulatory body and category rules
 - event supplementary regulations
 - component supplier specifications
 - team instructions
- 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
- testing result documentation, including:
 - recommendations for material use
 - recommendations for component use
- material and component testing procedures, including:
 - destructive
 - non-destructive.

Assessment Conditions

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.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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