Title	**Demonstrate knowledge of automotive foams**		
Level	**4**	**Credits**	**2**

Purpose	People credited with this unit standard are able to: demonstrate knowledge of automotive foam uses and types; describe automotive foam safety and replacement; and describe preparing components and installing automotive foam in a motor vehicle.

Classification	Motor Industry > Vehicle Bodywork

Available grade	Achieved

Guidance Information

1 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable manufacturers specifications, service information, company requirements and legislative requirements. This includes the knowledge and use of suitable tools and equipment.

2 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the current version of the Health and Safety at Work Act 2015; and any subsequent amendments and replacements.

3 Definitions
Company requirements refer to instructions to staff on policy and procedures that are available in the workplace. These requirements may include – company policies and procedures, work instructions, product quality specifications and legislative requirements.
Service information may include – technical information for a vehicle, machine, or product detailing operation; installation and servicing procedures; manufacturer instructions; technical terms and descriptions; and detailed illustrations.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of automotive foam uses and types.

Performance criteria

1.1 The uses of automotive foam in vehicles are described.

Range reducing noise, vibration, and harshness (NVH); water leaks; stiffening body structure; collision energy management; additional crash protection.

1.2 Locations of automotive foam on a vehicle are identified.

Range pillars, panels and rails, frames and cross members, roofs, doors.

1.3 Types of automotive foam and reasons for their use on a vehicle are described.

Range types include – expandable foam, structural foam, energy-absorbing solid foam blocks, soft foam blocks.

1.4 Automotive foam application and curing methods are described.

Range drop-in heat activated material, two-part expandable foam, set-in position foam blocks.

1.5 The use of automotive foam carriers is described.

1.6 Reasons for using heat-activated automotive foam are described.

Range delayed action, precise placement, control on quantity, ease of installation during assembly process.

1.7 Application of chemical-cure automotive foam during the vehicle assembly process is described.

Range mixing two-part chemicals, curing, changing state and expansion, filling voids.

1.8 Composition and features of collision repair automotive foam materials are described.

Range epoxy based, urethane based;
viscosity or flow ability, two-part materials, closed cell structure.

1.9 Features of sound dampening materials or automotive foams are described.

Range expansion rate, adhesive abilities, applications, curing time, viscosity, flexibility, appearance.

1.10 Features of flexible and rigid NVH automotive foams are described.

Range strength, compressibility, deformation, appearance, expansion rate.

1.11 Features of structural automotive foams are described.

Range strength, flexibility, appearance, expansion rate, limitations.

Outcome 2

Describe automotive foam safety and replacement.

Performance criteria

2.1 Use of safety equipment when working with expandable automotive foam is described.

Range respirator, vinyl gloves, eye protection, material safety data sheet, product manufacturer technical information.

2.2 Precautions to take when working on a vehicle that contains automotive foam are described.

Range finding out where foam is located, heating, welding.

2.3 Methods of identifying types of automotive foam are described.

Range product manufacturer technical information, visual identification.

2.4 Methods of determining replacement materials to use are described.

Range product manufacturer technical information, parts ordering system, product manufacturer hot-line, comparison of samples to original material.

2.5 Considerations for choosing a replacement material are described.

Range flow rate, foam time, location where the material is to be introduced into the component and the intended location, amount of material to use (expansion rate, volume of the area to be filled).

Outcome 3

Describe preparing components and installing automotive foam in a motor vehicle.

Performance criteria

3.1 Factors to consider when preparing components for installation are described.

Range installation of new or existing foam before attaching components, partial or complete removal of existing foam.

3.2 Procedure to prepare a component for automotive foam is described.

Range preparing areas to receive the foam, priming bare metal areas.

3.3 Suitable tools and techniques used to remove automotive foam are described.

Range chisels, abrasives, heat, scrapers, knives, rolling off by hand, water-based and solvent-based cleaners.

3.4 Procedure to replace components that have pre-installed automotive foam is described.

3.5 Procedure to install automotive foam is described in terms of the area on the vehicle where the automotive foam is required.

Range locating access holes, estimating amount of foam, selecting the appropriate material, purging air from the tubes, using dams, dispensing technique.

Planned review date	31 December 2025

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 February 2008	31 December 2023
Review	2	10 December 2020	N/A

Consent and Moderation Requirements (CMR) reference	0014

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact MITO New Zealand Incorporated info@mito.org.nz if you wish to suggest changes to the content of this unit standard.