

Assessment Requirements

Unit VF02K – Knowledge of Inspection, Repair and Replacement of High Performance Light Vehicle Tyres

Content

Tyres are

- a Directional tread
- b Asymmetric tread
- c Composite tread
- d High speed ratings (V,W,Y or ZR ratings)
- e An aspect ratio of 55% or below
- f Run flat capability

Main function of tyres

- a. Interaction between tyres, other components and vehicle handling
- b. Steering, drive and suspension
- c. Passenger comfort

Types of standard and high performance light vehicle wheel and rim construction

- a. Light alloy, pressed steel and wire wheels
- b. Standard and safety rims (runflat)
- c. Asymmetric rims
- d. Space saver rims

Markings on standard light vehicle tyres.

- a. Speed rating
- b. Size Markings
- c. Aspect ratio
- d. Load handling
- e. Ply rating
- f. Tread wear indicators
- g. EC markings and specialist application markings e.g. 'M&S'

Inspection and fault identification methods and procedures

- a. Inspection:
 - i. on the rim visual (external)
 - ii. removed from wheel (internal)
- b. Use of tread depth indicators, tyre probes and pressure gauges
- c. Information sources including tyre and vehicle manufacturers' technical data and the importance of accurate measurements, the importance of accurate fault identification, the importance of accurate adjustments

Limits of standard light vehicle tyre wear and serviceability.

- a. Tread depth and tyre damage
- b. Limitations under BS159 and Construction & Use Regulations
- c. Tyre pressure and maintenance requirements
- d. Suitability for minor repairs

Common faults associated with standard light vehicle tyres and wheels.

- a Excessive tyre wear and abnormal tread wear patterns (centre, outer edges, worn patches)
- b Damage to tread or side walls
- c Bulging, separation of tread, carcass distortion,
- d Impact damage, wheels running out of true, buckled wheels
- e Incorrect tyre pressure
- f Wrong tyre for vehicle or run flat

Methods and materials used in the repair of standard light vehicle tyres.

- a. Tyre inspection
- b. Damage limitation
- c. Accurate measurement
- d. Repair techniques and methods:
 - i. preparation of tyre
 - ii. mechanical and chemical buffing
- e. Repair materials:
 - i. plug patch
 - ii. patch and filler
 - iii. solutions and chemicals.
- f. Economic use of materials
- g. Correct storage of materials (including shelf life)

Principles of interchanging tyres/wheels

- a. Over sizing tyre and wheel fitment
- b. Longitudinal and diagonal
- c. Mixing radial, cross-ply and bias-belted tyres on same axle or different axles
 - i. lifting and supporting equipment
 - ii. tyre fitting and removal tools and machinery
 - iii. hand tools
 - iv. tyre repair tools
 - v. measuring equipment
 - vi. wheel balancing equipment
 - vii. tyre inflation equipment

Dealing with waste materials including

- a scrapped tyres
- b wheel weights
- c waste repair materials

Removal and fitting methods

To include:

- a. tyre sidewall fitting instructions
- b. vehicle protection
- c. use of hand and impact tools
- d. correct tyre inflation
- e. final inspection

Legal requirements to include:

- a. tread depth
- b. tyre wall and casing damage
- c. tyre pressure
- d. mixing of tyre types
- e. correct fitting