Assessment Requirements

Unit VF06K – Knowledge of Inspection, Repair and Replacement of Industrial Equipment Tyres

Content:

Note, the term 'industrial equipment' also refers to: agricultural, horticultural and construction industrial equipment.

Identify the different types of industrial equipment tyre construction

a. Radial
b. Bias and bias belted
c. Tube type
d. Tubeless
e. Tread and sidewall designs

Identify sidewall markings on industrial equipment tyres

a. Service description (load and speed markings)
b. Size designations
c. Aspect ratios
d. Construction markings (bias and bias belted, radial, tube type, tubeless)
e. Type approval markings
f. Date of manufacture markings
g. Tread wear indicators
h. Sidewall fitting instructions
i. Special service markings

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
d. the importance of accurate measurements
e. the importance of accurate fault identification
f. the importance of accurate adjustments

Identify the tools and equipment used to identify faults relating to industrial equipment tyres and wheels and confirm them safe to use

a. Tyre tread depth gauges
b. Tyre probes
c. Bead spreaders
d. Tyre pressure gauges
e. Hand lamps or torches

Identify the faults relating to industrial equipment tyres and wheels

a. Suitable personal protective equipment for conducting Industrial equipment tyre and rim inspections
b. Worn tread through normal use
c. Abnormal wear (wheel misalignment, over and under-inflation, incorrect application and adjustment)
d. Carcass damage (lumps and bulges, cuts, exposed cords, run-flat damage, penetrations, chemical damage)
e. Incorrect fitment (load rating, speed rating, size, construction, tread design, sidewall information)

f. Worn or damaged wheels and components (cracks, deformations).
g. Worn, damaged or incorrect wheel fixings and axle
h. Worn or damaged valves
i. Worn, damaged or incorrect tubes

Make recommendations relating to industrial equipment tyres and wheels
a. Suitability for fitting
b. Suitability for minor repair
c. Isolate scrapped tyres for correct disposal
d. Recommend tyres as suitable for re-moulding
e. Isolate scrapped wheel rims and components for correct disposal
f. Consequences of improper disposal of scrap tyres and wheels

Identify the tools and equipment used for the removal and fitting of industrial equipment wheels and tyres and confirm them safe to use
a. Technical information relating to safe lifting points and wheel torque and tyre pressure data.
b. Industrial equipment stands.
c. Hand tools and torque wrenches.
d. Bead unseating tools, tyre levers, bead lubricant.
e. Tyre inflation equipment
f. Safety cages

Remove and fit industrial equipment tyres and wheels
a Manufacturer and sidewall fitting instructions
b Protecting the industrial equipment and personnel during wheel and tyre removal and fitting.
c Suitable personal protective equipment for industrial equipment tyre and wheel removal and fitting.
d Use and positioning of lifting and supporting devices.
e Wheel removal and fitting using hand tools
f Tyre removal and fitting using hand or powered tools
g Valve replacement for wheel rims.
h Safe tyre inflation
i Informing relevant persons of anticipated delays.
j Keeping relevant persons informed of progress
k The relationship between time and cost
l Final inspection

Methods and materials used in the repair of commercial vehicle tyres.

a. Internal inspection of tyre for secondary damage.
b. Preparation of the tyre for application of repair materials
c. Preparation of inner tube for application of repair materials
d. Inspection of tyre and tube after repair
e. Correct storage of materials (including shelf life)
f. Inflation of tyre and tube to check for leaks
g. Repair Materials:
    i.rubber only plug patch
    ii.rubber only patch and filler material
    iii.solutions and chemicals

Identify the tools and equipment used for the minor repair of industrial equipment tyres and inner tubes and confirm them safe to use
a. mechanical, hydraulic and pneumatic (air bag) lifting and supporting equipment
b. portable ‘H’ cages

c. Technical information relating to minor repair areas, repair unit application instructions and injury limitations
d. Suitable personal protective equipment for tyre and inner tube repairing.
e. Measuring equipment for determining repairable areas
f. Reamers, buffers and tyre bead spreaders
g. Plug patch applicators, tyre probes, cover scrapers, roller stitchers, pliers and side cutters.
h. Liquid buffing solutions, chemical vulcanising fluids, liner seal solutions and tyre talc (French Chalk)
i. Combination plug/patches, patch and filler materials, inner tube patches

Describe how to improve traction by the use of ballast, to include if appropriate:
a. water ballast
b. wheel weights
c. chassis weights

Carry out minor repairs to industrial equipment tyres and inner tubes
a. Internal inspection of tyre for secondary damage.
b. Preparation of the tyre for application of repair materials
c. Preparation of inner tube for application of repair materials
d. Inspection of tyre and tube after repair
e. Inflation of tyre/tube to check for leaks

Main function of tyres
a Interaction between tyres, other components and handling
b Steering, drive and suspension
c Load carrying

Dealing with Waste Materials including:
a scrapped tyres
b wheel weights
c waste repair materials

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