HEADQUARTERS
PHILIPPINE ARMY
OFFICE OF THE ARMY CHIEF QUARTERMASTER
Fort Andres Bonifacio, Metro Manila

PA SPECIFICATION

QM SPEC NR OE-23T145R20
MAY 30 2017
(Interim)
Supersedes
SPEC NR MT01-14
undated

TIRE, 14.5 R20

Application: Intended for use in Truck, Medium Cargo/Troop Carrier, 2 ½ Ton M35A3, (military tactical vehicle).	
Technical Data	**Requirements**
Visual (markings on Tire wall)	
1. Type/Construction	Tubeless/Radial
2. Brand name or trade name	Identifiable
3. Nominal size including ply rating and load range	Identifiable
Tire size	14.5 R20 or 365/80R20
Ply rating/Load range	18PR/J (minimum)"
Service Description	143J (minimum)
4. Maximum air pressure	Identifiable
5. The words "Made in the Philippines" or country of origin if imported.	Identifiable
6. Single maximum load capacity (kgs)	At least 2,725 @ 450 kPa
7. Manufacturing date	Identifiable
Dimensional	
8. Overall Diameter (mm)	1,128 (maximum)
9. Overall Width (mm)	382 (maximum)
Central Tire Inflation System (CTIS) compatible	Optional
Tire Strength	Must pass the plunger rod test

Note: The measuring rim width to be used during testing is 279mm (11").

* Ply rating/load range marking is optional as long a service description is part of tire markings.

AURELIO T BADAJOS
Colonel, QMS (GSC) PA
Chief

NOTED
TG PA
MAY 30 2017
DATE

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TEST AND EVALUATION PROCEDURES
TIRE, 14.5 R20 with QM SPEC NR OE – 23T145R20

1. GENERAL

1.1. Scope: This Test and Acceptance Procedure shall apply to 14.5 R20 Tires intended for Trucks, Cargo/Troop Carrier, 2 ½ Ton M35A3, a military tactical vehicle.

1.2. Objective: To ascertain compliance of tires with standards and specifications in consonance with the need of the end user.

1.3. References:

a. Philippine National Standard for Pneumatic Tires, PNS 25, 1994.

b. ISO 4209-1:2001 International Standard – Truck and Bus Tires and Rims (metric series).

c. European Tire and Rim Technical Organization

d. Tire and Rim Association Standard

2. PROCEDURES

2.1. The Technical Inspection and Acceptance Committee (TIAC) for Quartermaster or its representatives shall ensure that the complete quantity stated in the contract is packed/palletized prior to inspection.

2.2. The TIAC shall conduct random sampling from the lot or lots. The samples shall be properly segregated, packed, marked and secured by the members/representatives of the committee.

2.3. Technical inspection and test shall be conducted on the representative samples of the lot by visual, dimensional and functional test to determine the over-all workmanship, markings, size and appropriate packaging of the items.

2.4. Functional Test will be done to determine the functional performance of the tire.

2.5. Results obtained shall be recorded and evaluated to determine the compliance of the items to Technical Specifications and as basis for acceptance or rejection of the lot or lots.

3. PHYSICAL ISNPECTION

3.1. Visual Inspection

3.1.1. Purpose: To determine the completeness, overall external workmanship, symbols, codes and markings of the tire set sample/s.

3.1.2. Procedure: Visually inspect the completeness, overall appearance and presence of required symbols or markings of the tire set.

3.1.3. Standard:

3.1.3.1. With the required Traction Design (Directional/Rib or Lug Type as appropriate)

3.1.3.2. With PS or ICC Quality Mark.

3.1.3.3. With Brand Name or Trade Name.

3.1.3.4. Tire Designation Markings: Manufacturer's Standard for Tire, **14.5 R20**. (Tire Size, Minimum Ply Rating/Load Range and Type/Construction)

3.1.3.5.1. With Maximum Air Pressure Markings.

3.1.3.6. With the words "Made in the Philippines" or country of origin if imported.

3.1.3.7. With Manufacturing Date Markings.

3.1.3.8. With Maximum Load Capacity Markings.

3.1.3.9. No evident damage on tread, sidewall, ply, cord and inner liner. No bead separation, chunking, broken cords, cracking or open splices.

3.2. Dimensional Test

3.2.1 Purpose: To determine the actual dimensions of the tire.

3.2.2 Procedure:

3.2.2.1 Dimensional shall either be based on ETRTO or TRA standard. The dimensional shall be base as to which standard the tire was design and manufactured.

3.2.2.2. The tire set sample/s shall be mounted on its corresponding rim and inflate to the indicated maximum permissible inflation pressure (450 kPa) at maximum load as labeled on the tire sidewall. The tire shall be allowed to stand for a minimum of 24 hours at room temperature. The pressure thereafter should be measured and adjusted to within 10kPa of the pressure specified for the tire type, being the ideal condition for measurement of the tire. Measure the Overall Diameter and Overall Width.

3.2.1.3. Overall Diameter shall be determined to the nearest millimeter by measuring the outside circumference by appropriate measuring tools and then divide the value by constant 3.1416 (π). Or by means of a measuring device calibrated to show directly the diameter of the tire.

3.2.1.4. Overall Width is the average of maximum widths including the sidewalls, side ribs, bars decorations, letters or numerals. The width shall be measured by nearest millimeters at four different points equally distributed around the tire and the result averaged.

3.2.1.5. Size Factor shall be the sum of overall diameter and overall width.

3.2.2. Standard:

Overall Diameter (mm)	1,128 (maximum)
Overall Width (mm)	382 (maximum)

4. Tire Strength Test

4.2.1. Purpose: To determine the strength of the tire.

4.2.2. Number of samples

4.2.2.1. Post Qualification: Submission of one (1) serviceable tires based on the technical specification or previous test result of plunger test and evaluated as passed shall be presented during the Post Qualification Phase.

4.2.2.2. Pre Delivery/Final Acceptance: One (1) sample shall be subjected to plunger test that will be taken at random from the delivery which had already undergone the physical inspection and dimensional test. Random sampling for the physical inspection and dimensional test shall be in accordance to MIL STD 105E. Additional sample for plunger test will be provided when prescribed in the contract which will be determined by procuring entity's representative.

4.2.3. Procedure:

4.2.3.1. To be conducted at the Third party testing center/laboratory at the country of origin or at the manufacturer's facility but shall be witness by the procuring entity's representative.

4.2.3.2. Force a **38mm** diameter cylindrical steel plunger rod with a hemispherical end at **5** equally distributed points perpendicularly into the tread rib as near to the centerline as possible, avoiding penetration into the groove, at the rate of **50 mm/min±10 mm/min**.

4.2.3.3. The plunger is stopped before reaching the rim or the required tire strength value of **2,203J** is reached without the tire breaking.

4.2.3.4. Should there be a Pre Delivery Inspection at the country of origin, all the required Functional Tests and Inspections shall be conducted through a capable independent third party entity or in the absence thereof, at the manufacturers test facility. The Manufacturer shall issue a document certifying that the tested tire came from the lots delivered and have passed the Tire Strength Test standard of the country of origin.

4.3.4 Standard: Tire Strength requirement based on PNS 25:1994 standards, or its equivalent standard at the country of origin if conducted thereat. All tire sample/s should pass the test.

3.3.4.1. All tire samples must pass the test. Any sample that fails the tire strength test shall cause the rejection of the lot.

5. ACCEPTABILITY

4.1 The result of the test based on the above criteria shall be the basis for evaluation of the Acceptance Committee in the acceptance/rejection of the above item for use of the PA.

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