



HEADQUARTERS
PHILIPPINE ARMY
OFFICE OF THE ARMY CHIEF ORDNANCE AND CHEMICAL SERVICE
Fort Andres Bonifacio, Metro Manila

TEST NR: OACOCS MT02-16

Rescinds All other Test and Acceptance Procedure for Tire 9.00-20

18 MAY 2016

**TEST AND ACCEPTANCE PROCEDURE FOR
TIRE, (9.00-20)**

1. GENERAL

- 1.1. Scope: This Test and Acceptance Procedure shall apply to 9.00-20 Tires intended for Trucks, Cargo/Troop Carrier, 2 ½ Ton M35 Series and KM250.
- 1.2. Objective: To ascertain compliance of tires with standards and specifications in consonance with the need of the end user.
- 1.3. Reference: 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)

2. PROCEDURES

- 2.1. The Technical Inspection and Acceptance Committee (TIAC) for Ordnance-Mobility 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. TEST PARAMETERS

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 Tire's required Flap and Tube.
 - 3.1.3.2. With the required Traction Design (Directional/Rib or Lug Type as appropriate)
 - 3.1.3.3. With PS or ICC Quality Mark.
 - 3.1.3.4. With Brand name or Trade name.



- 3.1.3.5. Tire Designation Markings: Manufacturer's Standard for Tire, 9.00-20. (Tire size, Minimum Ply rating/Load Range and Type/Construction)
- 3.1.3.6. With Maximum Air Pressure markings.
- 3.1.3.7. With the words "Made in the Philippines" or country of origin if imported.
- 3.1.3.8. With Manufacturing Date markings.
- 3.1.3.9. With Maximum Load Capacity markings.
- 3.1.3.10. No evident damage of tread, sidewall, ply, cord, inner liner, flaps and tubes. 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 sample/s.

3.2.2. Procedure:

- 3.2.2.1 The tire set sample/s shall be mounted on its corresponding rim and inflate to the indicated maximum permissible inflation pressure (760 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 10 kPa of the pressure specified for the tire type, being the ideal condition for measurement of the tire. Measure the Overall Diameter, Overall Width, Size Factor and Tread Depth.
- 3.2.2.2 Overall Diameter shall be determined to the nearest millimeter by measuring the outside circumference by a tape 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.
- 3.2.2.3 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.
- 3.2.2.4 Size Factor shall be the sum of overall diameter and overall width.
- 3.2.2.5 Tread Depth shall be measured at the first major groove nearest the tread centerline, avoiding any wear indication.

3.2.3. Standard:

Dimensions	Directional Traction Design	Lug Traction Design
Maximum Overall Diameter (mm)	1089	1089
Maximum Overall Width (mm)	275	275
Minimum Size Factor (mm)	1260	1260
Tread Depth (mm)	At least 14	At least 16
Air Pressure Loss during 24h conditioning period	Not more than 13.8 kPa or 2PSI	Not more than 13.8 kPa or 2PSI

3.3. Tire Strength Test

- 3.3.1 Purpose: To determine the strength of the tire.
- 3.3.2 Number of Samples: One (1) sample shall be subjected to plunger test for each quantity of delivery from 151 up to 1,200 pieces. Additional sample shall be randomly selected from the quantity in-excess of 1,200 pcs but within the lot of 151- 1,200 to be subjected to the test.
- 3.3.3 Procedure:
- 3.3.3.1 To be conducted by Philippine GeoAnalytics Inc (PGA) if done in-Country or equivalent government recognized testing center at the country of origin.
- 3.3.3.2 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 \pm 10 mm/min.
- 3.3.3.3 The plunger is stopped before reaching the rim or the required tire strength value of 2,282J is reached without the tire breaking.
- 3.3.3.4 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 that host country/government accredited test facility or in the absence thereof, at the manufacturer's test facilities. The Manufacturer shall issue a document certifying that the tested tire came from the lots delivered and have passed the Tire Strength Test.
- 3.3.4 Standard: Tire Strength requirement based on PNS 25:1994 standards if done in-Country or its equivalent standard used at the country of origin if conducted thereat.

4. TABLE OF CLASSIFICATION OF DEFECTS

DEFECTS	CLASSIFICATION	
	MAJOR	MINOR
Visual		
1. Without the Tire's required Flap and Tube	X	
2. Not the required Traction Design (Directional/Rib or Lug Type as appropriate)	X	
3. Without PS or ICC Quality Mark	X	
4. Without Brand Name or Trade Name markings	X	
5. Without Manufacturer's Tire Designation Markings for 9.00-20.	X	
6. Not within the Minimum Load Range and/or Ply Rating and Type/Construction requirements	X	
7. Without Maximum Air Pressure Markings	X	
8. Without the words "Made in the Philippines" or country of origin if imported.	X	
9. Without Manufacturing Date Mark/Symbol	X	
10. Not within the Manufacturing Period requirement	X	
11. Without Maximum Load Capacity Markings	X	
12. Not within the Maximum Load Capacity Requirement	X	
13. Evident damage on Tread or Sidewall or Ply or Cord or Inner liner	X	
14. Evident damage on Flap or Tube/Tube valve	X	
15. Bead Separation	X	
16. Chunking or Cracking or Open Splices on tire surface	X	

Dimensional Test		
17. Dimensions (Diameter or Width or Tread Depth) is not within the standard requirement		X
18. Size Factor is not within the standard requirement	X	
19. Air Pressure lost after 24 hours at room temperature exceeded 13.8kPa or 2PSI.	X	

5. ACCEPTANCE CRITERIA:

5.1. Visual Inspection

Acceptability of lots shall be determined by using the following Sampling Plans for visual inspection based on MIL STD 105E dated 10 May 1989 using the Acceptable Quality Level as shown in the sampling plan table.

To use the Sampling Plan, a number of sample units based on General Inspection Level I (GIL-I) shall be inspected. If the number of defective/s found is equal to or less than the Acceptance Number (AC) based on GIL I (Reduced), the lot or batch shall be considered acceptable. If the number of defective/s found is equal to or greater than the Rejection Number (RE) based on GIL I (Reduced), the lot or batch shall be rejected.

If the number of defective/s found in the inspection is between the first Acceptance (AC) and Rejection Number (RE); sampling plan for Normal Inspection (GIL-II) shall be applied. The number of samples shall be increased corresponding to the required samples for General Inspection Level II (Normal). The number of defective/s found in the first and second samples shall be accumulated. If the cumulative number of defective/s is equal to or less than the Acceptance Number (AC) for GIL-II (Normal), the lot or batch shall be considered acceptable. If the cumulative number of defective/s is equal to or greater than the Rejection Number (RE) for GIL-II (Normal), the lot or batch shall be rejected.

TABLE- I

SAMPLING PLAN: SINGLE SAMPLING PLAN FOR GENERAL INSPECTION LEVEL-I			
CLASSIFICATION OF DEFECT	AQL	LOT SIZE: 91 – 150 SAMPLE SIZE: 3	
		AC	RE
Major	6.5	0	2
Minor	10	1	3

TABLE- I-A

SAMPLING PLAN: SINGLE SAMPLING PLAN FOR GENERAL INSPECTION LEVEL – II (NORMAL)			
CLASSIFICATION OF DEFECT	AQL	LOT SIZE: 91 – 150 SAMPLE SIZE: 20	
		AC	RE
Major	6.5	3	4
Minor	10	5	6

TABLE- II

SAMPLING PLAN: SINGLE SAMPLING PLAN FOR GENERAL INSPECTION LEVEL-I			
CLASSIFICATION OF DEFECT	AQL	LOT SIZE: 151 – 280 SAMPLE SIZE: 5	
		AC	RE
Major	6.5	1	3
Minor	10	1	4

TABLE- II-A

SAMPLING PLAN: SINGLE SAMPLING PLAN FOR GENERAL INSPECTION LEVEL – II (NORMAL)			
CLASSIFICATION OF DEFECT	AQL	LOT SIZE: 151 – 280 SAMPLE SIZE: 32	
		AC	RE
Major	6.5	5	6
Minor	10	7	8

TABLE- III

SAMPLING PLAN: SINGLE SAMPLING PLAN FOR GENERAL INSPECTION LEVEL-I			
CLASSIFICATION OF DEFECT	AQL	LOT SIZE: 281 – 500 SAMPLE SIZE: 8	
		AC	RE
Major	6.5	1	4
Minor	10	2	5

TABLE- III-A

SAMPLING PLAN: SINGLE SAMPLING PLAN FOR GENERAL INSPECTION LEVEL – II (NORMAL)			
CLASSIFICATION OF DEFECT	AQL	LOT SIZE: 281 – 500 SAMPLE SIZE: 50	
		AC	RE
Major	6.5	7	8
Minor	10	10	11

TABLE- IV

SAMPLING PLAN: SINGLE SAMPLING PLAN FOR GENERAL INSPECTION LEVEL-I			
CLASSIFICATION OF DEFECT	AQL	LOT SIZE: 501 – 1,200 SAMPLE SIZE: 13	
		AC	RE
Major	6.5	2	5
Minor	10	3	6

TABLE- IV-A

SAMPLING PLAN: SINGLE SAMPLING PLAN FOR GENERAL INSPECTION LEVEL – II (NORMAL)			
CLASSIFICATION OF DEFECT	AQL	LOT SIZE: 501 – 1,200 SAMPLE SIZE: 80	
		AC	RE
Major	6.5	10	11
Minor	10	14	15

TABLE- V

SAMPLING PLAN: SINGLE SAMPLING PLAN FOR GENERAL INSPECTION LEVEL-I			
CLASSIFICATION OF DEFECT	AQL	LOT SIZE: 1,201 – 3,200 SAMPLE SIZE: 20	
		AC	RE
Major	6.5	3	6
Minor	10	5	8

TABLE-V-A

SAMPLING PLAN: SINGLE SAMPLING PLAN FOR GENERAL INSPECTION LEVEL – II (NORMAL)			
CLASSIFICATION OF DEFECT	AQL	LOT SIZE: 1,201 – 3,200 SAMPLE SIZE: 125	
		AC	RE
Major	6.5	14	15
Minor	10	21	22

AC- acceptance number

RE- rejection number

For quantities exceeding the lot size provided in the following sampling plan, additional samples shall be randomly selected from the quantity in-excess based on the applicable sampling table and subjected for dimensional test. All sample/s or groups of samples tested shall pass the requirement all the same as one homogeneous quantity.

5.2. Dimensional Test

Acceptability of lots shall be determined by using the following Sampling Plans for dimensional test based on MIL STD 105E dated 10 May 1989 using the Acceptance Limits as shown in the sampling plan table.

Determination of sample/s to be subjected to dimensional test is based on Special Inspection Level S-2 (SIL-S2) due to the strenuous requirement on tools and equipment, personnel and time. Acceptable Quality Limits shall be based on the values indicated in General Inspection Level II (GIL-II) corresponding to the quantity inspected based on SIL-S2. If the number of defective/s found is equal to or less than the Acceptance Number (AC) based on GIL-II, the lot or batch shall be considered acceptable. If the number of defective/s found is equal to or greater than the Rejection Number (RE) based on GIL-II, the lot or batch shall be rejected.

TABLE-I

SAMPLING PLAN: SINGLE SAMPLING PLAN FOR SPECIAL INSPECTION LEVEL – S-2			
CLASSIFICATION OF DEFECT	AQL	LOT SIZE: 26 – 150 SAMPLE SIZE: 3	
		AC	RE
Major	4.0	0	1
Minor	6.5	0	1

TABLE-II

SAMPLING PLAN: SINGLE SAMPLING PLAN FOR SPECIAL INSPECTION LEVEL – S-1			
CLASSIFICATION OF DEFECT	AQL	LOT SIZE: 151 – 1,200 SAMPLE SIZE: 5	
		AC	RE
Major	4.0	0	1
Minor	6.5	1	2

TABLE-III

SAMPLING PLAN: SINGLE SAMPLING PLAN FOR SPECIAL INSPECTION LEVEL – S-2			
CLASSIFICATION OF DEFECT	AQL	LOT SIZE: 1,201 – 3,200 SAMPLE SIZE: 8	
		AC	RE
Major	4.0	1	2
Minor	6.5	1	2

16 MAY 2016

Technical and Acceptance Procedure for Tire, 9.00-20
OACOCS SPECS NR MT02-12

AC- acceptance number

RE- rejection number

For quantities exceeding the lot size provided in the following sampling plan, additional samples shall be randomly selected from the quantity in-excess based on the applicable sampling table and subjected for dimensional test. All sample/s or groups of samples tested shall pass the requirement all the same as one homogeneous quantity.

5.3. Tire Strength Test

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


6. ACCEPTABILITY

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.

Prepared by:

Approved by:


MARCEL DS FIGURACION
LTC (OS) PA
Acting Chief, Mobility Branch


ERNESTO T LOPENA
Colonel, GSC (OS) PA
Chief