PASSENGER TIRE KNOWLEDGE BOOK
2011 Edition
Introduction

This book contains brief description on process of producing tires, basic knowledge on tire and information on tires produced by MASA as well as MASA tire superiorities.

This book also contains several tips on correct tire treatment. This book is aimed at being good information media for tire users, especially those produced by MASA. Therefore, this book must be learned and made as guidance for any sales persons and services for improving service quality.

By improved tire technology and spirit on continuous improvement applied by MASA, it shows MASA’s commitment on improving services to our loyal customers.
# Table of Contents

## Company Profile

## Tire Functions and Basic Structures
- 4 Tire Main Functions 06
- General Differences between Radial and Bias Tire
  - Construction Basic Structure 07
- Advantages of Radial Characteristics Upon Bias 08
- Advantages of Tubeless Radial and Tubetype Radial 09
- Radial Construction and Its Functions 10

## Tire Standard
- Tire Standardization 22
- Production Process Certification 22
- Product Certification 23
  - Certification According to Standard of Transportation Department 25
- Tire Specification 26
  - Radial Passenger Tire Size Conversion 28

## Tire Maintenance
- Proper Tire Use and Maintenance 30
- Tire Storage 31
- Tire Pressure 32
- Tire Rotation 33
  - Radial Passenger Tire Rotation 33
- Tire Alignment 34
- Types of Tire Damages and Their Causes 34

## Tire Claim Procedure
- Criteria of Tire Claim Replacement 37
Tire producer PT. Multistrada Arah Sarana, Tbk. abbreviated as MASA was firstly established in 1991, along with Indonesian business and industry performing expansion and improvement. In 1994, the factory started producing radial for cars along with rapidly growing sales value each year. In the beginning, MAS obtained technical assistance from Pirelli as world-class tire producer (1991-1994), and then assisted by Continental (1994-2000).

MASA grew in globalization era by expanding its industrial area currently covering 55 hectares of building located in 85-hectare area in Cikarang Timur, about one hour driving from the capital of Indonesia.

Its strong desire and ambition made ACHILLES, CORSA, and STRADA compete in market share through quality products and the best services. Production of Passenger Car Radial (PCR) becomes complete by production of Light Truck Radial (LTR) and Sport Utility Vehicle (SUV), and up to now, they can compete and are known in international market. Tires produced by MASA can be found in daily uses almost all over the world in many countries and becomes a standard for quality among tire industries.

Since 2004, when the company was taken over by new owner and management team, its sales drastically increased every year. In the beginning, the team conducted comprehensive study on policies and management performance, and then followed by implementation of performance improvement in all departments. Production system efficiency and distribution were able to improve efficiency at whole. It was a contribution of professionals having commitment and dedication for tens years to tire industry, capable to lead MASA to better world.

At the same time, MASA launched its latest breakthrough product, ACHILLES Ultra High Performance (UHP) tire, in which it attracted many parties when it was firstly launched in 2005. It was because the tire was only possible to produce by applying new production system. The new tire ACHILLES is launched to compete with high-performance tire produced by big producer. MASA is committed to provide with latest technology in tire industry for its customers. By new trust, the company ventures to produce snow tires for cold-climate area.

To meet world quality standard and through studies by professional team, we successfully obtain certifications including ISO/TS 16949:2009 and ISO/IEC 17025:2008 for Quality Management System and several product certificates including, inter alia, SNI, CCC, Inmetro, BIS, ECE R-30, ECE R-54, GSO, DOT, FMVSS 139.

By good market growth, the company plans to improve its production capacity and to introduce new products to meet market needs. Our success generates inspiration and optimism for the company in future. Experienced, wise and visionary management, equipped
with skilled and competent workers, mastering latest technology, capabilities of distributor and dealer to control market are our advantages. MASA’s objective is to be Indonesian national tire company being trend setter for tire all over the world.
1

Tire Functions and Basic Structures
4 Tire Main Functions

Tire has very significant role in driving. Compared to other spare parts, pneumatic tire is like air bag with its construction designed following road surface and various types of vehicles.

Tire's main functions include as follows:

1. **Supporting/holding up vehicle's load**
   - Tire performance must be able to support vehicle's load moving from one place to another.

2. **Forwarding wheel function and controlling vehicle's direction**
   - Tire performance must be able to run both on straight and bend roads in stable and safe.

3. **Forwarding motive force and braking of the vehicle on the road surface.**
   - Tire moving performance that is able to transform machine rotation performance to be vehicle's thrust and to be base support at the time of braking process on road surface.

4. **Absorbing shock from road surface**
   - Tire must be able to provide safety and comfort in driving, environmental-friendly must also be considered.

Therefore, we need to select tire construction suitable for the four functions, namely pneumatic tire like flexible air bag.
General Differences between Radial and Bias

Tire Construction Basic Structure

Tire construction structure is designed to reach intended performance characteristic and pursuant to objectives of usage or utilization, namely according to road condition and type of vehicle, however, in general, tire construction can be described as follows:

Radial construction consists of body ply with its thread arranged vertically to tire diameter.

Bias construction consists of body ply with its thread arranged in cross with diagonal direction one another.
Advantages of Radial Characteristics to Bias Tire

**Speed**
Radial speed rating is generally higher than that of bias.

**Endurance**
Radial has higher endurance than bias.

**Control**
Radial has higher traction and stability both for straight and bend roads.

**Fuel Consumption**
Utilizing radial construction, radial tire has lower rolling resistance than bias, so that fuel will be saved due to smaller energy release.

**Appearance**
Radial is more attractive viewed from style, wall design, and tread than bias.
Advantages of Tubeless Radial to Tubetype Radial

In general, radial tire has tubeless construction. Tubeless mean any tire not requiring tube and, as its substitute, the tire is layered with inner liner made of airtight rubber material.

<table>
<thead>
<tr>
<th>Tubeless Tire</th>
<th>Tubetype Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Diagram of tubeless tire" /></td>
<td><img src="image2.png" alt="Diagram of tubetype tire" /></td>
</tr>
</tbody>
</table>

Advantages of tubeless tire:

- Lighter than tubetype tire
- Safer when it is affected by sharp object (nail)
- No risks of exploding due to heat caused by frictions
Radial Construction and Its Functions

- Side Wall
- Gum Strip
- Cap Strip/Cap Ply
- Tread
- Body Ply
- Bead Wire
- Steel Belt
- Inner Liner
- Apex / Filler
**Sidewall**
Protecting body ply (carcass) on tire side and also functioning as place for putting tire important information.

**Gum Strip**
Special rubber put on steel belt edge functioning as shock absorber of steel belt thread tip.

**Cap Strip/Cap Ply**
Any textile thread with angle 0° layered by rubber. Utilized for twisting belt that the steel belt will not change its angle and diameter due to centrifugal force when the tire is used at high speed.
Function:
> to improve tire performance at high speed

**Tread**
Tread is main part of tire directly contacting road surface. It defines tire life, provides with tire appearance, and creates good traction on wet road.

**Apex / Filler**
Apex is in a triangle in couple with bead and they have different functions as:
> Handling and stability
> Blank space filler at body ply fold.

**Inner Liner**
One part of tire located at inner part, functioning as substitute to tire tube and made of mixed airtight rubber.

**Steel belt**
A steel belt liner that has been laminated by rubber and arranged by intersection. Belt provides with tire reinforcement and it has more stable and flexible physical characters.
Its functions as:
> Body ply holder for obtaining tread so that it can step on road perfectly.
> Strengthening body ply (carcass) so that it will always be able to defend its round from of road construction
Bead Wire
Its form is carbon steel wire layered with hard rubber and then formed as proper circle in layers.
Its functions:
▶ body ply lock to attach to rim.

Body Ply (Carcass)
Body ply is main part of tire in the form of layered sheet consisting of polyester or nylon or wire thread with rubber liner. Functions of body ply are as follows:
▶ Tire frame.
▶ To hold tire pressure.
▶ To absorb vibration of road.
Tire Main Materials
**Tire Main Materials**

Radial components for passenger car contain various materials at different composition. Following are any materials generally utilized in tire manufacturing industry.

Tire main raw materials composition:

<table>
<thead>
<tr>
<th>Material Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubber (Natural &amp; Synthetic)</td>
<td>41%</td>
</tr>
<tr>
<td>Filling Materials (Black Carbon, Silica, Carbon, Chalk)</td>
<td>30%</td>
</tr>
<tr>
<td>Strengthening Materials (Steel Wire, Polyester, Nylon)</td>
<td>15%</td>
</tr>
<tr>
<td>Plasticizers (Oil &amp; Resins)</td>
<td>6%</td>
</tr>
<tr>
<td>Chemical Substances as Antioxidantan (to prevent ozonization effect and material fatigue)</td>
<td>1%</td>
</tr>
<tr>
<td>Others</td>
<td>7%</td>
</tr>
</tbody>
</table>
Tire Manufacturing Process and Production Process Flow
Tire Manufacturing Process

Raw Material

- Wire
- Rubber
- Chemical
- Carbon Black
- Oil
- Nylon Fabric
- Polyester Fabric
- Steel Cord

Bead Building

- Banburry
- Compound
- Bead

Extruder

- Tread & Sidewall
- Inner Liner
- Roller Head

Inner Liner

- Polyester Ruberizing
- Nylon Ruberizing
- Steel Ruberizing

Calendar
Tire Manufacturing Process and Production Process Flow

- Bead Apexing
- Curing Press
- Visual Inspection
- Dynamic Balancing
- Uniformity
- Indoor Test
- Tire Manufacturing Process
- Production Process Flow

1. Bead Apex
2. Ply Cutter
3. Steel Cutter
4. JLB / Cap Ply Machine
5. JLB / Cap Ply
6. Body Ply
7. Steel Belt
8. Tyre Building Machine
9. Green Tire
10. Tire
11. Distributor
12. Delivery
13. Warehouse Finished Goods
14. Finished Goods
15. Distributor
16. Delivery
17. Warehouse Finished Goods

Bead Apexing
Ply Cutter
Steel Cutter
JLB / Cap Ply Machine
JLB / Cap Ply
Body Ply
Steel Belt
Tyre Building Machine
Green Tire
Tire
Visual Inspection
Dynamic Balancing
Uniformity
Indoor Test
Tire Manufacturing Process
Production Process Flow
Quality Assurance in Tire Production Process

For customer satisfaction, MASA assures that raw materials, production process to finished product is tested/inspected pursuant to international standard. It includes, among others, laboratory test for incoming raw materials, material production process inspection at factory until finished tire.

Material Preparation
- Acceptance test to all raw materials
- Compound test: test on tire components and parts
- Steel rubberized and textile rubberized

Process Inspection
- Lot Assurance
  System is capable to track any process of production.
- SPC (Statistic Process Control)
  Monitor system towards production stability.
- FMEA (Failure Mode Effect Analysis)
  Failure potential analysis method, performed before product design is realized and/or before massive production process is begun.
- MSA (Measurement System Analysis)
  Validation to measuring system for ensuring measuring system produces accurate measurement data.
- APQP (Advance Product Quality Planning)
  Monitoring system in making plan towards new product.
- PPAP (Production Part Approval Process)
  Validation to production process capability for ensuring that massive production process is capable to produce OK products consistently.

Any Finished Product Inspection
- Appearance Inspection
  Visual inspection to any finished tire by qualified person.
- Uniformity and Balance Inspection
  Uniformity and balance inspection is performed using machine with high accuracy in order to test accuracy of installation of tire components to make sure that installation can meet standard required for any vehicle.
**Tire Test**

Quality assurance is also made towards tire performance, namely by testing performance both at laboratory (indoor test) and outside, road, and circuit (outdoor test).

**Laboratory Test (Indoor Test)**

It includes as follows:

- **A** Tire Dimensional Test
  - The test includes:
    - Outside Diameter
    - Tread Wear Indicator (TWI)
    - Overall Width
      - Measurement is conducted after being conditioned at room temperature for 3 hours.

- **B** High Speed Test
  - Test is performed to measure tire capability at high speed.

- **C** Endurance Test
  - Test is performed to measure tire endurance with various loads.

- **D** Breaking Energy Test
  - Test is performed to measure tire construction strength.

- **E** Bead Unseating Test (Bead Compression to Tire and Rim)
  - Test is performed to measure compression on bead of tire to rim.

- **F** Rolling Resistance Test
  - Test is performed to obtain rolling resistance coefficient (RRC) for any tire RRC must be put on Ecolabelling, especially for European market.
Outdoor Test

Outdoors test consists of 2:

1. **Durability Test**
   
   To test tire durability and life performed on public road upon vehicle with load and tire pressure pursuant to maximum standard.

2. **Road Test**
   
   Road test is divided into 2:
   
   A. **Feeling/Subjective Test**
      
      This test utilizes feeling capability or examiner’s feeling. Parameters tested in road test include, among others, as follows:
      
      → Comfort
      → Noise
      → Stability
      → Tracking
      → Cornering

   B. **Objective Test**
      
      Measurement utilizes equipment. Parameters tested in this road test include as follows:
      
      → Noise
      → Braking
      → Acceleration
      → Rolling resistance
      → Wet Grip
Tire Standardization

MASA produces tires based on Standardization applicable all over the world both for export and domestic markets. They are, among others, as follows:

A  ETRTO (The European Tyre and Rim Technical Organisation)
   Tire and rim standard issued by and applicable in European countries.

B  TRA (The Tire and Rim Association)
   Dimensional standardization for tire, rim, valve, and spare parts issued by the United States of America.

C  JATMA (The Japan Automobile Tyre Manufacturers Association)
   Standardization for production, distribution, application, and sales for motor vehicle’s tires issued by Japan.

PRODUCTION PROCESS CERTIFICATION

MASA has met international process standards as follow:

1  ISO 9001:2008
   Quality management system for production process.

2  ISO / IEC17025:2008
   Quality management system for laboratory controlling process.

3  ISO / TS 16949:2009
   Quality management system for production process to be supplier automotive manufacturing.
**Product Certification**

Products of MASA have met quality standard in several countries on the world. Product certificates obtained by MASA are as follows:

1. **SNI**
   
   For marketing in Indonesia, tire must obtain SNI certificate issued by Certification Agency legally acknowledged by National Standardization Agency (BSN) under No. SNI - 06 - 0098 - 2002, and then it must be registered with Ministry of Trade under Product Registration number 110-002-111276.

2. **CCC**
   
   CCC or China Compulsory Certificate mark is a safety mark for meeting compulsory quality standard requirements for any products to market in China.

3. **INMETRO**
   
   INMETRO or National Institute of Metrology, Standardization and Industrial Quality is a mark for meeting mandatory quality standard requirements for any products to market in Brazil.

4. **GSO**
   
   GSO or Gulf Standard Organization is certification to meet mandatory quality standard requirements for any products to market in the Middle East.
ECE (Economic Commission For Europe)

- **E-Mark**
  
  "E" mark followed by numbers in circle to meet requirements in European Union regarding any products to market in Europe.

- **E-Noise**
  
  E-Noise is a certification issued by EASA (European Aviation Safety Agency) related to noise level. For any tires entering Europe, they must have E-Noise certificate as a certification on noise caused by related tires.

SONCAP (NIGERIA)

SONCAP or Standard Organization of Nigeria Conformity Assessment is a certification to meet mandatory quality standard requirements for any products to market in Nigeria.

BIS

BIS or Bureau India Standard is certification to meet mandatory quality standard requirements for any products to market in India.

SABS

SSABS or South African Bureau of Standard is certification for meeting mandatory quality standard requirements for any products to market in South Africa.
Certification according to Department of Transportation Standard

**DOT Codification (Departement of Transportation)**

DOT 5K ZW VDU 1809

- **DOT** (Department of Transportation)
- **5K** (Manufacture Code)
- **Z** (Nominal Section Width Code)
- **W** (Rim Diameter Code)
- **V** (Speed Symbol)
- **DU** (Pattern Code)
- **1809** (Production Code (Week and Year))

**UTQG**

DOT defines tire quality requirements based on results of test conducted in the United States, in which it is called UTQG (Uniform Tire Quality Grading) consisting of 3 criteria as follows:

1. **TREADWEAR**
2. **TRACTION**
3. **TEMPERATURE**

Contoh UTQG: Treadwear 400  Traction AA  Temperature A

<table>
<thead>
<tr>
<th>TREADWEAR</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;100</td>
<td>Good</td>
</tr>
<tr>
<td>100</td>
<td>Fair</td>
</tr>
<tr>
<td>&lt;100</td>
<td>Poor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRACTION</th>
<th>Asphalt</th>
<th>Concrete</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>&gt; 0.54</td>
<td>0.41</td>
</tr>
<tr>
<td>A</td>
<td>&gt; 0.47</td>
<td>0.35</td>
</tr>
<tr>
<td>B</td>
<td>&gt; 0.38</td>
<td>0.26</td>
</tr>
<tr>
<td>C</td>
<td>&lt; 0.38</td>
<td>0.26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEMPERATURE</th>
<th>Speed (mph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&gt; 115</td>
</tr>
<tr>
<td>B</td>
<td>100 - 115</td>
</tr>
<tr>
<td>C</td>
<td>85 - 100</td>
</tr>
</tbody>
</table>

**FMVSS (Federal Motor Vehicle Safety Standard)**

For marketing tires to the United States and Canada, they must pass FMVSS 1399 standard test, namely tests on Dimension, Endurance, High Speed, Bead Unseat, and Braking Energy. Although there are no official certificates issued for such tests, we still have to run such test routinely.
**Tire Specification**

- **A** Tire marking for tire dimension and codification

- **B** Several marks/codes on wall:

1. MUD & SNOW
2. PATTERN NAME
3. TYRE SIZE
4. MOLD NUMBER
5. LOAD & PRESSURE MARKING
6. REINFORCED
7. TYRE TYPE
8. MADE IN
9. INDONESIA STANDARD CODE
10. U.S D.O.T Compliance Followed by Tire Identification Number
11. MANUFACTURE
12. BRAND NAME
13. CARCASS CONSTRUCTION
14. E MARKING
15. CCC MARKING
16. UTQG RATING
17. SAFETY WARNING
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Passenger Car (Tire Identification)</td>
</tr>
<tr>
<td>205</td>
<td>Nominal Section Width (mm)</td>
</tr>
<tr>
<td>75</td>
<td>Aspect Ratio (Series)</td>
</tr>
<tr>
<td>R</td>
<td>Radial Construction</td>
</tr>
<tr>
<td>15</td>
<td>Rim Diameter</td>
</tr>
<tr>
<td>98</td>
<td>Load Index (750 kg)</td>
</tr>
<tr>
<td>H</td>
<td>Speed Index (210 km/h)</td>
</tr>
<tr>
<td>XL</td>
<td>Extra Load</td>
</tr>
</tbody>
</table>
Radial Passenger Tire Size Conversion

Tire size conversion is intended to search for alternative tire size beside original tire standard by considering ground clearance and vehicle’s vendor space. For example, in above figure, although they have different sizes, the tires still have same outside diameter.
5

Tire Maintenance
Proper Tire Application and Maintenance

Good and correct tire application:

➢ Avoiding immediate break since it may cause erosion to part of tread.
➢ Avoiding hard shock.
➢ Avoiding oily road.

Proper tire maintenance

➢ Tire life will be longer so that it will save cost.
➢ More secured safety and comfort for drivers.
➢ Selection of proper tire and suitable for application and fields will also create more secured safety and comfort in driving.

Correct tire maintenance

➢ Periodic tire pressure checking including to the spare tire.
➢ Periodic rotation, suggested at any time reaching distance of 10,000 KM.
➢ Periodic wheel alignment (spooring & balancing), suggested at the time of installing tire and when the distance reaches 25,000 KM.
➢ Not parking for a long time (days) in constant position and under the sunlight.
**Tire Storage**

In order to avoid tire damages, storage must consider following matters

- Avoid any sharp objects from storage area since they may cause damaged or torn tires.
- Never store tires in any location directly affected by sunlight since it may speed up ozonization process.
- To prevent water entering tire, ensure no leakage to windows, doors, and roofs where the tires are stored.
- Avoid storing tires at oily place since such oil may damage tire quality.

- Vertical arrangement of the tires can be conducted as follows:
  - For small tires, it may not exceed 10 tires.
  - For medium tires, it may not exceed 8 tires.
  - For big tires, it may not exceed 5 tires.

Horizontal tire arrangement can be made at special shelf.

Slanting or cross arrangement are not allowed.
**Tire Pressure**

Tire pressure checking:

1. Ensure the tire is cold
2. Check tire pressure and compare with its standard condition
3. Check any leakage from valve, by using water
4. Valve core must be replaced with a new one in case of any leakage & valve cap must be there.

Several effects occurred if the tire has low/high pressure:

<table>
<thead>
<tr>
<th>Low Tire Pressure</th>
<th>High Tire Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>The tire will be worn out quickly, especially at shoulder.</td>
<td>Tread will be worn out quickly, especially at central part.</td>
</tr>
<tr>
<td>There will be side crack.</td>
<td>Tread will be easily slipped.</td>
</tr>
<tr>
<td>Tire thread on wall will be broken and may separate the thread and rubber.</td>
<td>Tire will be easy to explode if it is cut or crashed by blunt or sharp objects.</td>
</tr>
<tr>
<td>Tread will be easily peeled up at speed of 100 km/hour.</td>
<td>It may cause mechanical problems to vehicle.</td>
</tr>
<tr>
<td>Tire life will be shorter.</td>
<td></td>
</tr>
<tr>
<td>Fuel consumption will be inefficient.</td>
<td></td>
</tr>
</tbody>
</table>
**Tire Rotation**

For optimum tire condition, especially for wear level of lasting longer and spread evenly, tire rotation is significantly required. Tire rotation is adjusted to tread pattern, especially for tread direction since it will influence tire traction and balance. Tire rotation is better to perform every 5,000 to 10,000 km of use.

**Radial Passenger Tire Rotation**

Tire Rotation by Tread Wear Pattern

Notes: Replacing tire with different construction or brand at one axle is not recommended.
**Tire Alignment**

In addition to make comfort driving, tire alignment can also reduce possibility of damaged tires caused by bad vehicle condition. Tire alignment depends on toe, caster, and chamber settings. Non-aligned tires may cause non-spread wear.

Any factors causing tire damages will be as follows:

- Errors by users/car users.
- Errors by storage/transportation.
- Errors by process in tire factory.

**Types of Tire Damages and Their Causes**
Tire Claim Procedure
Tire Claim Procedure

USER

FORWARDED TO USER

SHOP/SUB-AGENT/AGENT/DISTRIBUTOR

TIRE CLAIM IS COMPLETED AND SENT TO SALES/TECH SUPPORT

TECH SUPPORT DIRECTLY CHECKS/CLAIM TIRE DATA AND DECIDES EITHER TO TECHNICALLY REPLACE/REJECT AND INFORM THE SALES

SALES

SALES COMMUNICATED RESPONSES TO TIRE CLAIM TO DISTRIBUTOR/SHOP
Claim Tire Replacement Criteria

Claim tire replacement process follows Customer Claim Handling Procedure. Several criteria for claim tire are as follows:

A. Agent/distributor will continue and deliver claimed tire to tire factory of MASA.

B. In case agent/distributor does not deliver claim tire, it must send data on claim tire with minimum data as follows:
   - Claim date.
   - Distributor’s name/address.
   - Tire size, brand, pattern.
   - Production serial number (week code) sliced out from the claimed tire.
   - Damage name.
   - Tire damage photo (damage photo must be clear).
   - Remained flow depth.

C. In case agent/distributor does not send the claimed tire, it may contact Customer Care MASA at 62-21-56949559, and then its Technical Support will directly check the tire. Claim at distributor will be as following consideration:
   - Claim tire is sufficiently high and needs immediate handling.
   - Claim type is doubtful/dangerous, especially due to factory’s error factors.
   - Requirement on direct explanation from technical team to shop/agent/distributor/customer.
   - etc

D. Data on claim tire or claim tire will be inspected by Technical Support and the results of “replaced or rejected” technically will be communicated to Sales as technical data reference from Technical Support in tire claim sheet format. Based on reference and decision of Technical Support, the Sales will decide on the claim tire to agent/distributor.

E. The claim will be rejected in case of:
   - The tire is intentionally damaged/added with new defect or submitted at non-good will.
   - Second tire
   - Vulcanized or repaired tire.
   - Any tire with non-clear data.

F. The claim will not be granted/replaced in case of:
   - The tire has exceeded 5 years after production.
   - The tire was damaged due to misutilization or mistakes by user.
   - The tire tread’s height is less than 1.6 mm.