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<td>L2</td>
<td>T010</td>
<td>Cut</td>
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</tr>
<tr>
<td></td>
<td>L2</td>
<td>T012</td>
<td>Repaired Tube</td>
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<td></td>
<td>L2</td>
<td>T013</td>
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<td>L2</td>
<td>T015</td>
<td>Air Leakage Not Identified</td>
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<tr>
<td></td>
<td>L2</td>
<td>T021</td>
<td>Cracks in Rubber Base - Separation</td>
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<td></td>
<td>L2</td>
<td>T022</td>
<td>Cracks in Rubber Base - Tearing</td>
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<td></td>
<td>L2</td>
<td>T800</td>
<td>Open Tube Splice</td>
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<td></td>
<td>L2</td>
<td>T999</td>
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<td>F001</td>
<td>Foreign Material</td>
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<td>L 2</td>
<td>F002</td>
<td>Under Curing</td>
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<tr>
<td></td>
<td>L 2</td>
<td>F003</td>
<td>Blister</td>
<td>Accepted</td>
</tr>
<tr>
<td></td>
<td>L 2</td>
<td>F004</td>
<td>Flap Undulation</td>
<td>Accepted</td>
</tr>
<tr>
<td></td>
<td>L 2</td>
<td>F006</td>
<td>Rubber Starved</td>
<td>Accepted</td>
</tr>
<tr>
<td></td>
<td>L 2</td>
<td>F009</td>
<td>Cut</td>
<td>Rejected</td>
</tr>
<tr>
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<td>L 2</td>
<td>F010</td>
<td>Flap Tear</td>
<td>Rejected</td>
</tr>
<tr>
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<td>L 2</td>
<td>F012</td>
<td>Flap Run Flat</td>
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<td>L 2</td>
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Codes and Conditions
# Tread Failures

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### CODES AND CONDITIONS - TREAD

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<tr>
<td>TREAD</td>
<td>Tread Surface Damages</td>
<td>1110 - 1190</td>
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#### 1100 - Tread Surface Damages

- 1110 - Tread cut/puncture (Through)
- 1120 - Tread cut (Not through)
- 1130 - Tread Delamination
- 1140 - Tread Chipping
- 1150 - Tread Chunking (Tear Off)
- 1170 - Transport Damage
- 1180 - Pitted Surface
- 1190 - Tread Migrating Wire

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</thead>
<tbody>
<tr>
<td>Tread Surface Damages</td>
<td>1100</td>
<td></td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:**
- Punctures, cuts, or tear could be found on tread area.
- In more severe conditions, casing ply cord can be shown obviously.

**Possible Causes:**
- Tread punctured or cut by sharp objects.
- Severe operation conditions (poor road condition).
- Misapplication of the tire to service condition.

**Recommendation:**
- Steer clear of snags on the road when driving.
- Thoroughly inspect whether there are any wounds on tire periodically.
- If punctured, timely repair should be done to prevent further damage to the tire.
- Select proper tire with regard to actual application conditions.
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tread Cut / Puncture (Through)</td>
<td>1110</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:**
Cut and puncture were found on the tread, carcass was penetrated through.

**Photo:**
![Image of tire with puncture](image)

**Possible Causes:**
- Severe road condition, tread cut or punctured by sharp objects.

**Recommendation:**
- Steer clear of snags on the road when driving.
- Inspect tire for any wound periodically.
- If punctured, timely repair to prevent further damage on the tire.
## TREAD CONDITIONS CODES JUDGEMENT

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>Tread Cut (Not Through)</th>
<th>1120</th>
<th>Rejected</th>
</tr>
</thead>
</table>

### Description:
Cut and puncture were found on the tread, carcass not penetrated.

### Possible Causes:
- Poor operation condition, such as road hazard and damaged by sharp objects.

### Recommendation:
- Steer clear of snags when driving.
- Inspect tire for any wound periodically.
- If the tire is punctured, timely repair to prevent further damage.
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tread Delamination</td>
<td>1130</td>
<td></td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:** Layers of rubber in the tread are visible and peeling apart.

**Possible Causes:**
- Excessive mould lube, a rubber compounding problem, surface scorch of the tread rubber or poor mould fitment;

**Recommendation:**
- Please contact local Giti Technical Service for further inspection.
## Tread Chipping

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/Bias</th>
<th>Conditions</th>
<th>Code</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tread Chipping</td>
<td>1140</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

### Description:
Rough, abraded tread surface with numerous small flakes. Hollows appear on the tread surface with rough edge showing signs of cuts.

### Photo:
![Tread Chipping Photo]

### Possible Causes:
- Poor road conditions.
- Aggravated by high torque, improper inflation pressure, sharp turning, sudden starting and braking or vehicle chassis malfunction.
- Misapplication of the tire to service condition.

### Recommendation:
- Avoid rough driving.
- Select proper tire with regard to actual application conditions.
### TREAD CONDITIONS

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>Description</th>
<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tread Chunking (Tear Off)</td>
<td>Pattern blocks separated (tear off) at the base of the tread.</td>
<td>1150</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Possible Causes:**
- Localized impact force over tire block resulting from poor road condition (e.g. pothole, curbs, nails, stones etc.).
- Aggravated by serious overload, improper inflation pressure, sharp turn or vehicle chassis malfunction.
- Misapplication of the tire to service condition.

**Recommendation:**
- Steer clear of snags on the road when driving.
- Avoid overloading, maintain tire pressure.
- Check vehicle chassis periodically.
- Select proper tire with regard to actual application conditions.

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Transport Damage</td>
<td>1170</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Poor appearance of new tire tread, such as cuts or scratches during tire shipping/transport operation.

**Photo:**

**Possible Causes:**
- Improper shipping/transport operation.

**Recommendation:**
- Check and review shipping/transport operation process.
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pitted Surface</td>
<td>1180</td>
<td></td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:** A spongy appearance exhibits in the surface of the tread pattern.

**Possible Causes:**
- Severe road condition.
- Environmental temperature too low.
- Exposure to chemicals.
- Misapplication of the tire to service condition.

**Recommendation:**
- Keep away from chemicals.
- Choose winter tires in low temperature environment and/or in winter.
### Tread Migrating Wire

<table>
<thead>
<tr>
<th>TBR/PCR/LTR</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
<th>DESCRIPTION</th>
<th>PHOTOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR</td>
<td>Tread Migrating Wire</td>
<td>1190</td>
<td>Accepted</td>
<td>Wire pierce through and appears on the surface of tread.</td>
<td><img src="image1" alt="Photo" /> <img src="image2" alt="Photo" /></td>
</tr>
</tbody>
</table>

**Possible Causes:**
- Manufacturing defects resulting from loose wires extruding from tread belts.
- Wire Contamination.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.

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TIRE CONDITION INSPECTION MANUAL

**CODES AND CONDITIONS - TREAD**

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<th>CONDITIONS</th>
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<tbody>
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**1200 - Groove Cracks**

- Back to Menu
- 1210 - Groove Crack - Lateral
- 1220 - Groove Crack - Longitudinal
- 1230 - Weather Cracking in Grooves

---

## Tread Condition Inspection

### TBR/PCR/LTR/Bias

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<th>CODES</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Groove Cracks</td>
<td>1200</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Cracks occurring in the grooves, in some cases, an evidence of cuts, stones trapped can be found.

**Possible Causes:**
- Employment of high inflation pressure.
- Frequent emergency braking.
- Riding over curbs or the edge of roads.
- Severe road condition.
- Stone drilling or external cuts.
- Extensive torque or lateral/radial force.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge.
- Avoid overloading.
- Check and remove stones or other objects stuck in tread grooves periodically.
- Avoid tire abuse.

---

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</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Groove Crack - Lateral</td>
<td>1210</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** One or more cracks in the tread rubber occurring between and at the base of lugs.

**Photo:**

![Groove Crack - Lateral](image)

**Possible Causes:**
- Employment of high inflation pressure.
- Frequent emergency braking or excessive tire spinning.
- Stone drilling or external cuts.
- Aggravated by frequent emergency braking or excessive tire spinning.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Careful driving, e.g. steer clear of snags on the road when driving.
- Check and remove stones or other objects stuck in tread grooves periodically.
**TREAD CONDITIONS CODES JUDGEMENT**

| TBR/PCR/LTR/BIAS | Groove Crack - Longitudinal | 1220 | Rejected |

**Description:**
Longitudinal cracks occurring between ribs at the base of the tread grooves.

**Possible Causes:**
- Improper inflation pressure and/or overloading.
- Cuts by stones trapped in tread or external cuts.
- Excessive torque or lateral force.
- Riding over curbs or the edge of roads.
- Severe road conditions.
- Misapplication of the tire.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Check and remove stones or other objects stuck in tread grooves periodically.
- Careful driving, e.g. steer clear of snags on the road when driving.
- Avoid tire abuse.
### TREAD CONDITIONS

<table>
<thead>
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<tbody>
<tr>
<td>Weather Cracking in Grooves</td>
<td>1230</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

**Description:**

- Hairline cracks in grooves.
- Usually occurs in regions of low temperatures.

**Possible Causes:**

- Tiny sandstones embed in grooves.
- Misapplication of tire.

**Recommendation:**

- Choose proper product, for instance, use winter tires in low temperature regions.

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### CODES AND CONDITIONS - TREAD

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<td>Tread Separations</td>
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**1300 - Tread Separations**

- Back to Menu
  - 1310 - Tread Leaving Casing
  - 1320 - Belt Leaving Belt
  - 1330 - Breaker (Belt) Leaving Casing
  - 1340 - Casing Leaving Casing
  - 1350 - Tread Leaving Belt
  - 1390 - Separation Not Identified
### TREAD CONDITIONS

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<th>CODES</th>
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<tr>
<td>Tread Separations</td>
<td>1300</td>
<td>Rejected &amp; Accepted</td>
<td></td>
</tr>
</tbody>
</table>

#### Description:
Separations between tread components of tread rubber, belt package and casing plies.

#### Possible Causes:
- Loss or Fatigue (weakening) of adhesion between tread rubber and casing plies caused by excessive stresses and heat build up.
- Cut/penetration allow degradation and/or oxidation of tread components.
- Improper inflation pressure or overloading.
- Excessive speeds/overloading
- Large shear force impact.
- Poor adhesion of tread components

#### Recommendation:
- Careful driving, e.g.: steer clear of snags during driving, avoid large shear force
- Timely inspect tire for any wounds and get it repaired.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading and/or long-term continuous driving.

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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
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</thead>
<tbody>
<tr>
<td>Tread Leaving Casing</td>
<td>1310</td>
<td>Rejected &amp; Accepted</td>
<td></td>
</tr>
</tbody>
</table>

**Description:** Separation between tread package and casing.

**Photo:**

**Possible Causes:**
- Loss or fatigue (weakening) of adhesion between tread rubber and casing plies caused by excessive stresses and heat build up from:
  - Improper inflation pressure or overloading.
  - Excessive speeds/overloading.
  - Poor adhesion between tread rubber and casing.
  - Large shear force impact.
  - Tread puncture, cuts.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid large shear force impacts.
- Careful driving, e.g. steer clear of snags, avoid fast/sharp cornering, do not exceed tire speed rating.
- Avoid overloading and/or prolonged continuous driving.
### CODES AND CONDITIONS - TREAD

<table>
<thead>
<tr>
<th>TREAD</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
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</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR</td>
<td>Belt Leaving Belt</td>
<td>1320</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:**
Separation between belts.

**Photo:**
![Image of separated belts](image1)

**Possible Causes:**
- Loss or Fatigue (weakening) of adhesion between belts caused by excessive stresses and heat build up from:
  - Improper inflation pressure or overloading.
  - Excessive speeds/overloading.
  - Poor adhesion between belts.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid large shear force impacts.
- Careful driving, e.g. steer clear of snags, avoid fast/sharp cornering.
- Do not exceed tire speed rating.
- Avoid overloading and/or prolonged continuous driving.

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### Description:
Separation between breaker (belt) and casing.

### Photo:
![Separation between breaker and casing](attachment:image.jpg)

### Possible Causes:
- Loss or Fatigue (weakening) of adhesion between breaker (belt) and casing plies caused by excessive stresses and heat buildup from:
  - Improper inflation pressure or overloading.
  - Excessive speeds/overloading.
  - Poor adhesion between breaker(belts) and casing.
  - Large shear force impact.
  - Tread puncture, cuts.

### Recommendation:
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid large shear force impacts.
- Careful driving, e.g. steer clear of snags, avoid fast/sharp cornering.
- Do not exceed tire speed rating.
- Avoid overloading and/or prolonged continuous driving.

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<table>
<thead>
<tr>
<th>TREAD</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCR/LTR/BIAS</td>
<td>Casing Leaving Casing</td>
<td>1340</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:** Separation between casing plies.

**Possible Causes:**
- Loss or fatigue (weakening) of adhesion between tread rubber and casing plies caused by excessive stresses and heat build up from:
  - Improper inflation pressure or overloading.
  - Excessive speeds/overloading
  - Poor adhesion between casings.
  - Large shear force impact.
  - Tread puncture, cuts.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid large shear force impacts.
- Careful driving, e.g. steer clear of snags, avoid fast/sharp cornering.
  do not exceed tire speed rating.
- Avoid overloading and/or prolonged continuous driving.
## TREAD CONDITIONS CODES JUDGEMENT

<table>
<thead>
<tr>
<th>TBR/PCR/LTR</th>
<th>Tread Leaving Belt</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Separation between tread rubber and belt.</td>
<td>1350</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

### Possible Causes:
- Loss or Fatigue (weakening) of adhesion between tread rubber and casing plies caused by excessive stresses and heat build up from:
  - Improper inflation pressure or overloading.
  - Excessive speeds/overloading
  - Poor adhesion between tread rubber and belt.

### Recommendation:
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid large shear force impacts.
- Careful driving, e.g. steer clear of snags, avoid fast/sharp cornering.
- Do not exceed tire speed rating.
- Avoid overloading and/or prolonged continuous driving.

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## TREAD CODES

### TBR/PCR/LTR/BIAS

**Description:** Any Separations between tread components not listed or coded.

**Photo:** None

**Possible Causes:** • None

**Recommendation:** • Please contact local Giti Technical Service for further inspection.

### Codes and Conditions - Tread

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>Separation Not Identified</th>
<th>Codes</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1390</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

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## CODES AND CONDITIONS - TREAD

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<th>CONDITIONS</th>
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<tbody>
<tr>
<td>TREAD</td>
<td>Tread Bursting</td>
<td>1410 - 1490</td>
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</tbody>
</table>

### 1400 - Tread Bursting

- 1410 - Cut Bursting
- 1420 - Heat Bursting
- 1430 - Impact Bursting
- 1440 - BLB Bursting
- 1490 - Bursting Not Identified
## TREAD CONDITIONS

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>Conditional Code</th>
<th>Description</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tread Bursting</td>
<td>1400</td>
<td>Casing burst from shock or cut to the tread area and/or the shoulder. In a radial tire appears as diagonal or radial along the cords of the casing. In a bias tire appears in the shape of “X”, “L”, “T” or “—”.</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Possible Causes:**
- Improper inflation pressure or overloading.
- Rough driving at high speeds.
- Impact with curbs or running over objects in road such as pothole.
- Wrong application of the tire to service condition.

**Recommendation:**
- Check and adjust tire inflation pressure with a quality air gauge periodically.
- Avoid rough driving, e.g. steer clear of snags, do not exceed the tire speed rating.
- Inspect tire closely for any damages after hitting obstructions.
- Avoid overloading and/or long-term continuous driving.
### TBR/PCR/LTR/BIAS - Cut Bursting

| Description: | Casing burst from cut to the tread area and/or the shoulder. |
| Photo: | ![Cuts](image) |
| Possible Causes: | • Impact with curbs or running over objects in road such as pothole.  
• Aggravated by overloading and rough driving at high speeds. |
| Recommendation: | • Check and adjust tire inflation pressure with a quality air gauge periodically.  
• Avoid rough driving, steer clear of snags.  
• Inspect tire closely for any damages after hitting obstructions. |

**JUDGEMENT**

| Codes | Rejected |

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## Tread Conditions - Tread

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<th>Conditions</th>
<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Bursting</td>
<td>1420</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

### Description:
Crown rubber separates. Ply cord breaks up. Fierce abrasion could be found at the edge of the fracture. Separation of tread rubber from belts/breakers/casing.

### Photo:
![Image of tread condition](image)

### Possible Causes:
- Excess heat build up from improper inflation pressure or overloading.
- Prolonged continuous driving at high speeds.
- Misapplication of the tire service condition.

### Recommendation:
- Check and adjust tire inflation pressure with a quality air gauge periodically.
- Avoid rough driving, long-term continuous driving at high speed/overloading.
- Correct application of the tire.

---

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### Tread Code: TBR/PCR/LTR/Bias

#### Description:
Localized break through the tread rubber and casing by concentrated impact.

#### Possible Causes:
- Severe, concentrated impact from foreign objects in road such as snags, pothole, curbs.
- Aggravated by over inflation, sharp turning and excessive speed.

#### Recommendation:
- Check and adjust tire inflation pressure with a quality air gauge periodically.
- Avoid rough driving, steer clear of snags, do not exceed the tire speed rating.
- Inspect tire closely for any damages after hitting obstructions.

#### Photo:
![Tire with damage](image)

#### Codes and Judgement:

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/Bias</th>
<th>Conditions</th>
<th>Code</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/Bias</td>
<td>Impact Bursting</td>
<td>1430</td>
<td>Rejected</td>
</tr>
</tbody>
</table>
## Tread Condition: BLB Bursting

<table>
<thead>
<tr>
<th>TBR/PCR/LTR</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLB Bursting</td>
<td>1440</td>
<td></td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:**
Tread burst caused by BLB, casing is not bursting.

**Photo:**
![Tread Burst](image1)

**Possible Causes:**
- Loss or fatigue (weakening) of adhesion between belts caused by
  - Improper inflation pressure.
  - Excessive speed/overloading.
  - Large shear force impact.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid large shear force impacts.
- Careful driving, e.g. steer clear of snags, avoid fast/sharp cornering.
- Do not exceed tire speed rating.
- Avoid overloading and/or prolonged continuous driving.
### Tread Condition: Bursting Not Identified

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bursting Not Identified</td>
<td>1490</td>
<td></td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Any Tread Bursting not listed or coded.

**Photo:** None

**Possible Causes:** • None

**Recommendation:** • None

---

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### CODES AND CONDITIONS - TREAD

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<tr>
<th>AREA</th>
<th>CONDITIONS</th>
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</thead>
<tbody>
<tr>
<td>TREAD</td>
<td>Irregular Wear</td>
<td>1501 - 1590</td>
</tr>
</tbody>
</table>

#### AREA CONDITIONS

- **1500 - Irregular Wear**
  - 1501 - River Wear
  - 1502 - Shoulder Wear
  - 1503 - Heel & Toe Wear
  - 1504 - Rib Punch
  - 1505 - Shoulder Edge Wear
  - 1506 - Center Wear
  - 1507 - Diagonal Wear
  - 1508 - Max-Min Wear
  - 1509 - Step-Down Wear
  - 1510 - Feather Edge Wear
  - 1511 - Center Rib Punch Wear
  - 1512 - Mechanical Wear
  - 1513 - Spot Wear
  - 1521 - Rapid Wear - Application
  - 1529 - Rapid Wear Not Identified
  - 1590 - IW Not Identified
<table>
<thead>
<tr>
<th>CODES AND CONDITIONS - TREAD</th>
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</thead>
<tbody>
<tr>
<td><strong>TREAD</strong></td>
</tr>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
</tr>
</tbody>
</table>

**Description:** Uneven wear exhibits around tread crown. Certain spot(s) wear faster than other in tread area.

**Photo:**

**Possible Causes:**
- Vehicle mechanical problem with suspension system, braking system, axle alignment, etc.
- Improper tire inflation air pressure.
- Unbalanced tire/wheel assembly or other assembly non-uniformity.
- Rough driving style and habits.

**Recommendation:**
- Regularly care and proper maintain vehicle mechanical system.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Follow up proper mounting and demounting procedure by using proper tools.
- Check wheel/rim assembly.
- Foster good driving style and habits.
## TBR/LTR/BIAS - River Wear

<table>
<thead>
<tr>
<th>TREAD</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/LTR/BIAS</td>
<td>River Wear</td>
<td>1501</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

### Description:
Circumferential wear along rib edges next to major tread grooves which may be wavy in appearance and vary in width around tire.

### Possible Causes:
- Common in line haul operations in which loads are light and turning is infrequent or loose axle components.
- Improper inflation pressure can aggravate.

### Recommendation:
- Regular care and proper maintenance on vehicle mechanical system.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
<table>
<thead>
<tr>
<th>TREAD/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sh. Wear (Shoulder Wear)</td>
<td>1502</td>
<td></td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Excessive wear on both shoulder ribs.

**Photo:**

**Possible Causes:**
- Under inflation or overloading.
- Vehicle mechanical problem.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Regularly care and proper maintenance on vehicle mechanical system.
- Avoid overloading.
## Codes and Conditions - Tread

<table>
<thead>
<tr>
<th>Tread</th>
<th>Condition</th>
<th>Code</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/LTR/BIAS</td>
<td>H&amp;T (Heel &amp; Toe Wear)</td>
<td>1503</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Each lug around tire worn high to low from front to back edge, like a rubber eraser.

**Possible Causes:**
- Most often caused by mismatched inflation pressures or tire diameters in dual assemblies.
- Certain conditions such as P&D operations, high torque, sharp braking and mountainous terrains aggravate this condition.

**Recommendation:**
- Regularly care and proper maintenance on vehicle mechanical system.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Good driving habit, such as avoiding sharp/fast braking and starting.
- On a dual assembly, Both tires should be same size, same pattern, same construction, same inflation pressure.

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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rib Punch</td>
<td>1504</td>
<td></td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:**
One or more inner ribs worn below the level the adjacent ribs circumferentially around tire.

**Possible Causes:**
- Primarily caused by low inflation pressure.
- Lack of shock absorber control in some suspension types, binding spring hanger, non-uniformity such as improper bead seating.
- Improper bearing adjustment, and assembly out of balance.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Regularly care and proper maintenance on vehicle mechanical system.
- Check and review wheel/rim and tire assembly process.

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<th>JUDGEMENT</th>
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</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Shoulder Edge Wear</td>
<td>1505</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Pattern on one side or both sides of shoulder edge wears faster.

**Photo:**

**Possible Causes:**
- Vehicle mechanical problems such as rear axle of vehicle bends.
- Improper inflation pressure.

** Recommendation:**
- Regularly care and proper maintenance on vehicle mechanical system.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Center Wear</td>
<td>1506</td>
<td></td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Pattern in center wears faster.

**Photo:**

**Possible Causes:** • Over inflation, aggravated by overloading.

**Recommendation:** • Check and maintain tire inflation pressure with a quality air gauge periodically.
  • Avoiding overloading.

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<th>JUDGEMENT</th>
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</thead>
<tbody>
<tr>
<td>Diagonal Wear</td>
<td>1507</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

**Description:** Localized flat spots worn diagonally across the tread approximately 25°-35° angles often repeating around tire circumference.

**Possible Causes:**
- Improper bearing adjustment, toe out, wrong of tire/wheel mounting technique.
- Mismatched tire dual assembly for different size and/or inflation pressure.

**Recommendation:**
- Regularly care and proper maintenance on vehicle mechanical system.
- On a dual assembly, Both tires should be same size, same pattern, same construction, same inflation pressure.
- Rotate the tires on a regular basis.

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<tbody>
<tr>
<td></td>
<td>Max-Min</td>
<td>1508</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:**
Considerable different in tread depth from one point to 180° opposite.
Tire no longer maintains a round shape.

**Photo:**

**Possible Causes:**
- Non-uniformity in the rotating assembly such as wheel/rim, tire, and/or improper bead seating of tire on rim.
- May also be caused by distorted brake drums.

**Recommendation:**
- Regularly care and proper maintenance on vehicle mechanical system.
- Check and review wheel/rim and tire assembly process.
- Diagnose the problem components/parts of vehicle, replace or correct it.
### TREAD CONDITIONS CODES JUDGEMENT

| TBR/LTR/BIAS | Step-Down Wear | 1509 | Rejected |

**Description:**
Alternate lugs worn to different tread depths around tire circumference. May be every second lug, every third, etc.

**Photo:**
![Photo of tire tread conditions](image)

**Possible Causes:**
- Mismatched inflation pressures or tire diameters in a dual assembly.
- Poorly maintained vehicle suspension system.

**Recommendation:**
- Regularly care and proper maintenance on vehicle mechanical system.
- Rotate the tires on a regular basis.

---

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</thead>
<tbody>
<tr>
<td>Feather Edge Wear</td>
<td>1510</td>
<td></td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:**
Tread ribs worn high to low on each rib across the tread face.

**Possible Causes:**
- Excessive side force scrubbing, resulting from conditions of misalignment, primarily excessive toe.
- Damaged suspension components and other chassis misalignment.

**Recommendation:**
- Diagnose and correct chassis misalignment condition.
- Regularly care and proper maintenance on vehicle mechanical system.
- Rotate the tires on a regular basis.
## TBR/PCR/LTR/BIAS

<table>
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<tr>
<th>Conditions</th>
<th>Codes</th>
<th>Judgement</th>
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</thead>
<tbody>
<tr>
<td>Center Rib Punch Wear</td>
<td>1511</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

### Description:
Center rib wears faster than others.

### Possible Causes:
- Vehicle parts malfunction, such as lack of shock absorber control in some suspension types.
- Mismatched tire size and/or inflation pressure between duals.
- Improper inflation pressure may aggravate.

### Recommendation:
- Diagnose the problem of components’ parts, replace or correct it.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- On a dual assembly, Both tires should be same size, same pattern, same construction, same inflation pressure.
### Tread Conditions - TBR/PCR/LTR/Bias

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<tr>
<th>Description</th>
<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abnormal &amp; concentrating wearing shown on one or more positions on tread. Surface texture may show abrasion marks from tread sliding on road surface.</td>
<td>1512</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

#### Possible Causes:
- Wheel locks during brake.
- Unbalanced brake system, aggressive use of brake, frozen brake or driver abuse.

#### Recommendation:
- Regularly care and proper maintenance on vehicle mechanical system.
- Check brake system and brake balance.
- Avoid rough driving, such as frequently sudden braking/starting.
### TREAD CONDITIONS - TREAD

<table>
<thead>
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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spot Wear</td>
<td>1513</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

**Description:** Localized spot of excessive wear across the tread face showing skid mark on road surface.

**Photo:**

![Localized spot of excessive wear across the tread face showing skid mark on road surface.](image)

**Possible Causes:**
- Braking system problem such as brake malfunction or unbalanced brake system.
- Frequent hard braking.

**Recommendation:**
- Check braking system periodically.
- Avoid rough driving.

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<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Rapid Wear - Application</td>
<td>1521</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Low mileage, fast rate of wear resulted from improper usage condition.

**Possible Causes:**
- Severe service conditions, such as overloading, improper inflation pressure, vehicle mechanical problem, rough road condition, etc
- Misapplication of the tire to service condition.

**Recommendation:**
- Regularly care and proper maintenance on vehicle mechanical system.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Correct application of the tire.
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid Wear Not Identified</td>
<td>1529</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

**Description:** Any rapid wear issues not listed or coded.

**Photo:** None

**Possible Causes:** • None

**Recommendation:** • Please contact local GITI Technical Service for further inspection.

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### TREAD CONDITIONS

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<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>IW Not Identified</td>
<td>1590</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:**
Any Tread Irregular Wear conditions not listed or coded.

**Photo:**
None

**Possible Causes:**
- None

**Recommendation:**
- None
<table>
<thead>
<tr>
<th>AREA</th>
<th>CONDITIONS</th>
<th>CODES</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREAD</td>
<td>Tread Tear</td>
<td>1610 -1660</td>
</tr>
</tbody>
</table>

**CODES AND CONDITIONS - TREAD**

- **1600 - Tread Tear**
  - Back to Menu
  - 1610 - Rib Tear
  - 1620 - Lug Tear
  - 1630 - Rib Tear and Groove crack
  - 1640 - Lug Tear and Groove crack
  - 1650 - Defense Groove Tearing
  - 1660 - Sipe Tear
<table>
<thead>
<tr>
<th>TREAD</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Tread Tear</td>
<td>1600</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:**
Ribs, lugs and blocks of the tread are torn off by external forces.

**Photo:**
![Photo of a tire tread with torn off ribs, lugs, and blocks]

**Possible Causes:**
- Severe road condition
- Excess torque or High lateral force application
- Improper inflation pressure or overloading
- Stone retention or external cuts
- Sharp/fast turn

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Check and remove stones or other objects stuck in tread grooves periodically.
- Drive carefully, steer clear of curbs or the edge of roads when driving.
- Avoid overloading and rough driving.

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### Codes and Conditions - Tread

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<th>Conditions</th>
<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rib Tear</td>
<td>1610</td>
<td></td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:**
Ribs are torn by external forces.

**Possible Causes:**
- Improper inflation pressure or excessive loading.
- Stone retention or external cuts.
- Riding over curbs or the edge of roads.
- Frequent sharp turning.
- High lateral force application.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Check and remove stones or other objects stuck in tread grooves periodically.
- Drive carefully, steer clear of curbs or the edge of roads when driving.
- Avoid overloading and rough driving.
<table>
<thead>
<tr>
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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lug Tear</td>
<td>1620</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

**Description:** Lugs are torn by external forces.

**Photo:**

![Photo of Lug Tear](image)

**Possible Causes:**
- Improper inflation pressure or excessive loading
- Riding over curbs or the edge of roads.
- Drive tires spinning.
- Stone retention or external cuts.
- High torque drive application.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Check and remove stones or other objects stuck in tread grooves periodically.
- Drive carefully, steer clear of curbs or the edge of roads when driving.
- Avoid overloading, rough driving and excessive tire spinning.

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**TREAD CONDITIONS**

<table>
<thead>
<tr>
<th>TBR</th>
<th>Rib Tear and Groove Crack</th>
<th>1630</th>
<th>Rejected</th>
</tr>
</thead>
</table>

**Description:** Cracks occurring in the groove combined with part of tire that has this cracking evolving to partial or full tear off of the rib.

**Photo:**

![Image of tire with rib tear and groove crack](image)

**Possible Causes:**
- Improper inflation pressure and/or overloading.
- Severe road conditions.
- Cuts by stones trapped in tread or external cuts.
- Excessive torque or lateral force.
- Misapplication of the tire.
- Riding over curbs or the edge of roads.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Check and remove stones or other objects stuck in tread grooves periodically.
- Careful driving, e.g. steer clear of snags on the road when driving.
- Avoid tire abuse.
**TREAD CONDITIONS CODES JUDGEMENT**

| TBR | Lug Tear and Groove Crack | 1640 | Rejected |

**Description:** Tire has both presence of cracks in grooves and lugs are torn away.

**Possible Causes:**
- Improper inflation pressure or excessive loading
- Riding over curbs or the edge of roads.
- Stone retention or external cuts.
- Excessive tire spinning.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Check and remove stones or other objects stuck in tread grooves periodically.
- Drive carefully, steer clear of curbs or the edge of roads when driving.
- Avoid overloading, rough driving and excessive tire spinning.
### Tread Condition Inspection Manual Edition: GTQA-I-2012-EN

#### TREAD CONDITIONS CODES JUDGEMENT

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<th></th>
<th></th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR</td>
<td>Defense Groove Tearing</td>
<td>1650</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Pattern blocks outside of defense groove separated at the base of the tread with evidences of tear.

**Possible Causes:**
- Localized impact force over tire block resulting from poor road condition (e.g. pothole, curbs, nails, stones etc.).
- Aggravated by serious overload, improper inflation pressure, sharp turn or vehicle chassis malfunction.
- Misapplication of the tire to service condition.

**Recommendation:**
- Steer clear of snags on the road when driving.
- Avoid overloading, maintain tire pressure.
- Check vehicle chassis periodically.
- Select tire with regard to actual usage conditions.
<table>
<thead>
<tr>
<th>TREAD</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR</td>
<td>Sipe Tear</td>
<td>1660</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:**
Tread sipe are torn by external force.

**Possible Causes:**
- Stone retention or external cuts.
- Riding over curbs or the edge of roads.
- High torque drive application.
- Drive tires spinning.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Remove stones and rocks from grooves.
- Drive carefully, steer clear of curbs or the edge of roads when driving.
- Avoid overloading, rough driving and excessive tire spinning.
<table>
<thead>
<tr>
<th>AREA</th>
<th>CONDITIONS</th>
<th>CODES</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREAD</td>
<td>Tread Distortion</td>
<td>1700 - 1710</td>
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</tbody>
</table>

1700 - Tread Distortion

1710 - Missing Belt

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## TREAD

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<thead>
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<th>PCR/LTR</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tread Distortion</td>
<td>1700</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

### Description:
Tread appears distorted.

### Photo:
![Tread Image]

### Possible Causes:
- Fatigue (weakening) of tire components at late stage of service life.
- Loose cords of belt/carcass resulting from external impact and/or cuts.
- Improper repair techniques.

### Recommendation:
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Drive carefully to avoid impacts.
- Inspect tires closely for any damages after hitting obstructions.
- Check and review tire repair workmanship and process.

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<thead>
<tr>
<th>TREAD</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR</td>
<td>Missing Belt</td>
<td>1710</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** One or more belts were missed in tread package. The center in tread may present convex or concave camber circumferentially.

**Photo:**

![Tread Image](image_url)

**Possible Causes:** • Manufacturing defects.

**Recommendation:** • Please contact local GITI Technical Service for further inspection.
<table>
<thead>
<tr>
<th>AREA</th>
<th>CONDITIONS</th>
<th>CODES</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREAD</td>
<td>Open Tread Splice</td>
<td>1800</td>
</tr>
</tbody>
</table>

**1800 - Open Tread Splice**

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### Tread Condition: Open Tread Splice

**Description:** A space is evident between the tread ends. Smooth separation with no cuts.

**Possible Causes:**
- Poor workmanship, poor tread end adhesion or tread was cut too short.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.

**Judgement:** Accepted

<table>
<thead>
<tr>
<th>Tread/PCR/LTR/Bias</th>
<th>Condition</th>
<th>Code</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Open Tread Splice</td>
<td>1800</td>
<td>Accepted</td>
</tr>
</tbody>
</table>
### Codes and Conditions - Tread

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<tr>
<th>AREA</th>
<th>CONDITIONS</th>
<th>CODES</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREAD</td>
<td>Poor Tread Appearance</td>
<td>1910 - 1990</td>
</tr>
</tbody>
</table>

#### 1900 - Poor Tread Appearance

- 1910 - Foreign Material
- 1920 - Rubber Starved
- 1930 - Blister
- 1940 - Contamination
- 1950 - Air Loss (Pinhole)
- 1960 - Poor Repair Workmanship
- 1970 - Flow Cracks
- 1980 - Cord Exposed
- 1990 - Under Cure

[Back to Menu]
## TREAD CONDITIONS JUDGEMENT

<table>
<thead>
<tr>
<th>CODES</th>
<th>TBR/PCR/LTR/BIAS</th>
<th>Poor Tread Appearance</th>
<th>1900</th>
<th>Accepted</th>
</tr>
</thead>
</table>

**Description:** Poor appearance on new tire tread.

**Photo:**

![Poor Tread Appearance Image]

**Possible Causes:**
- Manufacturing defects caused by foreign materials attached to mold or green tire.
- Improper management on semi-products and/or finished-products.

**Recommendation:**
- Please contact local Giti Technical Service for further inspection.

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## TREAD CONDITIONS CODES JUDGEMENT

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>Foreign Material</th>
<th>1910</th>
<th>Accepted</th>
</tr>
</thead>
</table>

### Description:
Foreign Material is any non-rubber material, other than the intended compound, that is cured into the tread rubber. It may appear as a raised spot on the surface containing foreign material covered by surface rubber.

### Photo:
![Foreign Material Image]

### Possible Causes:
- Manufacturing defects caused by foreign materials attached to mold or green tire.

### Recommendation:
- Please contact local GITI Technical Service for further inspection.

---

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<table>
<thead>
<tr>
<th>TREAD/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubber Starved</td>
<td></td>
<td>1920</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Localized Lack of rubber in tread area.

**Possible Causes:**
- Manufacturing defects caused by remaining water, oil, grease, etc in mould or green tire.
- Water leakage of curing bag.

**Recommendation:** Please contact local GITI Technical Service for further inspection.
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blister</td>
<td>1930</td>
<td></td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Internal voids on the surface of the tread. They are usually characterized by a hollow bump on the tread surface.

**Photo:**

**Possible Causes:** • Manufacturing defects resulting from such volatile materials as air, moisture, gasoline, chemical agent, etc. trapped in semi-product.

**Recommendation:** • Please contact local GITI Technical Service for further inspection.
**TREAD CODES**

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contamination</td>
<td>1940</td>
<td></td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Contaminated/dirty tread surface.

**Possible Causes:** • Manufacturing defects resulting from dirty mold.

**Recommendation:** • Please contact local GITI Technical Service for further inspection.
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Loss (Pinhole)</td>
<td>1950</td>
<td></td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Air leak from pinhole in tread area.

**Possible Causes:**
- Manufacturing defects results from remaining foreign materials in mold, such as broken-pin.

**Recommendation:**
- Please contact local Giti Technical Service for further inspection.

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<table>
<thead>
<tr>
<th>TREAD</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Poor Repair Workmanship</td>
<td>1960</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Slight wounds on related area, not influencing tire use.

**Possible Causes:** • Poor repair workmanship in plant.

**Recommendation:** • Please contact local GITI Technical Service for further inspection.

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TREAD CONDITIONS CODES JUDGEMENT

TBR/PCR/LTR/BIAS Flow Cracks 1970 Accepted

Description: Cut-like cracks in tread surface of a tire, when examined closely, one side the cut is smooth and shiny and the other side folds over the other when stretched.

Possible Causes: • Manufacture defect results from improper mixture of rubber compound, dirty mold.

Recommendation: • Please contact local GITI Technical Service for further inspection.

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## TREAD

### CONDITIONS

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>Cord Exposed</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1980</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

### Description:
Fabric cord(s) and/or wire(s) cord protruding or exposing from the exterior surface of tire tread.

### Photo:

![Image of tire tread with exposed fabric cord(s) and/or wire(s)]

### Possible Causes:
- Insufficient of tread rubber gauge.

### Recommendation:
- Please contact local GITI Technical Service for further inspection.

---

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Tread rubber separation may occur circumferentially or locally, porosity and or micro bubbles can be observed on tread rubber.

Possible Causes:
- Manufacture defect results from curing parameter out of tolerances.

Recommendation:
- Please contact local GITI Technical Service for further inspection.
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reported Condition Not Found</td>
<td>1998</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

**Description:**
Reported condition can not be found or no any damages presented in tread area of a given tire.

**Photo:**
None

**Possible Causes:**
- None

**Recommendation:**
- None

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<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Condition Unknown</td>
<td>1999</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:** Any tread conditions not listed or coded.

**Photo:** None

**Possible Causes:** • None

**Recommendation:** • Please contact local GITI Technical Service for further inspection.

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## 2XXX - Shoulder Failures

- **2100 - Shoulder Surface Damages**
- **2200 - Shoulder Cracks**
- **2300 - Shoulder Separations**
- **2900 - Poor Shoulder Appearance**
- **2998 - Reported Condition Not Found**
- **2999 - Condition Unknown**
2100 - Shoulder Surface Damages

- 2110 - Shoulder Cut
- 2120 - Shoulder Puncture
- 2130 - Damage in Shoulder
  - Repairable
- 2150 - Chunking Shoulder
- 2160 - Shoulder Migrating Wires
- 2170 - Transport Damage

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### Shoulder Surface Damages

**Description:** Shoulder rubber exhibits mechanical damages, and a portion of the rubber is torn off. Cuts and punctures could be found at fracture.

**Possible Causes:**
- Road hazard, curbing, wash rack rails, pit rails, vandalism, etc

**Recommendation:**
- Drive carefully, such as steer clear of snags while driving.
- Timely have tire repaired properly to prevent further damages if

---

**SHOULDER** | **CONDITIONS** | **CODES** | **JUDGEMENT**
---|---|---|---
TBR/PCR/LTR/BIAS | Shoulder Surface Damages | 2100 | Rejected
## Shoulder Cut - Rejected

### Description:
Portion of shoulder rubber torn with cuts at fracture.

### Photo:
![Image of shoulder cut](image_url)

### Possible Causes:
- Cuts or scrapes by sharp objects.

### Recommendation:
- Drive carefully, such as steer clear of snags while driving.
- Timely have tire repaired properly to prevent further damages if necessary.
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoulder Puncture</td>
<td>2120</td>
<td></td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Shoulder rubber separates with punctures at interfaces.

**Possible Causes:** • Punctured by sharp objects.

**Recommendation:** • Avoid snags while driving.
  • Timely have tire repaired properly to prevent further damages if
### Description:
Slight puncture found at shoulder area.

### Possible Causes:
- Encountered fierce snags while running or being transported.

### Recommendation:
- Avoid snags while driving.
- Timely have tire repaired properly to prevent further damages if

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damage in Shoulder - Repairable</td>
<td>2130</td>
<td>Rejected</td>
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</table>

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## Shoulder Condition: Chunking Shoulder

| Description: | Shoulder rubber separates with tearing interfaces. |
| Photo: | ![chunking shoulder image] |
| Possible Causes: | • Running over curbs or nails, or withstanding severe localized impacts, aggravated by improper under inflation pressure or overloading and sharp turning.  
• High torque application. |
| Recommendation: | • Drive carefully, e.g. steer clear of snags while driving.  
• Avoid aggressive/rough driving style. |

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**Description:** Wire protruding through the interior or exterior surface of tire shoulder.

**Possible Causes:** • Manufacturing defects resulting from loose wires extruding from tread belts.

**Recommendation:** • Please contact local GITI Technical Service for further inspection.
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport Damage</td>
<td></td>
<td>2170</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Poor appearance of new tire shoulder, such as cuts or scratches during tire shipping/transport operation.

**Photo:**

**Possible Causes:** • Improper shipping/transport operation.

**Recommendation:** • Check and review shipping/transport operation process.
<table>
<thead>
<tr>
<th>AREA</th>
<th>CONDITIONS</th>
<th>CODES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHOULDER</td>
<td>Shoulder Cracks</td>
<td>2210-2270</td>
</tr>
</tbody>
</table>

- 2200 - Shoulder Cracks
  - 2210 - Shoulder Circumferential Crack
  - 2220 - Radial Cracking
  - 2230 - Angular Repeated (Diagonal) Cracking
  - 2270 - Ozone Cracking

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# Shoulder Crack

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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Shoulder Cracks</td>
<td>2200</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:** Shoulder rubber exhibits cracks or splits.

**Photo:**

<table>
<thead>
<tr>
<th>Photo:</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Image 1]</td>
</tr>
<tr>
<td>![Image 2]</td>
</tr>
</tbody>
</table>

**Possible Causes:**
- Under inflation pressure.
- Cuts, scrapes by sharp objects or external impact.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Drive carefully, e.g. steer clear of snags while driving.
## Shoulder Circumferential Crack

### Description:
Shoulder rubber exhibits circumferential cracks, with smooth interfaces.

### Possible Causes:
- Operation with underinflation pressure.
- Cuts, scrapes by sharp objects or external impact.
- Manufacturing defects from improper product design, bad adhesion between sidewall and crown rubber.

### Recommendation:
- Carefully driving, e.g. steer clear of snags while driving.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Check and review tire manufacturing process.
## Shoulder Condition: Radial Cracking

<table>
<thead>
<tr>
<th>TBR/PCR/LTR</th>
<th>Condition</th>
<th>Code</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Radial Cracking</td>
<td>2220</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Shoulder rubber exhibits vertical/diagonal cracks.

**Photo:**

**Possible Causes:**
- Under inflated and/or overloaded.
- Large torque force.
- Cuts and/or impacts.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Drive carefully, e.g. steer clear of snags while driving.
SHOULDER CODES AND CONDITIONS - SHOULDER

<table>
<thead>
<tr>
<th>TBR/PCR/LTR</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Angular Repeated (Diagonal) Cracking</td>
<td>2230</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Shoulder rubber exhibits repeated 45° angular cracks.

**Photo:**

**Possible Causes:**
- Operation with underinflation pressure and/or overloaded.
- Large torque force.
- Cuts and/or impacts.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Drive carefully, e.g. steer clear of snags while driving.
<table>
<thead>
<tr>
<th>SHOULDER</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Ozone Cracking</td>
<td>2270</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

**Description:** Shoulder rubber exhibits hairline tiny cracks.

**Photo:**

![Image](image1.jpg)

**Possible Causes:**
- Normal aging condition but can be caused and/or aggravated by extended periods of parking under direct sunlight, or exposure to high concentrations of ozone, ozone can be generated from many sources, such as vehicle exhaust, welding, electric generators, etc.
- Long time of running under inflated.

**Recommendation:**
- Keep the tire away from heat source, vehicle exhaust, ozone and sunlight, electric generators and motors.
- Check and maintain tire inflation pressure with a quality air gauge periodically.

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### CODES AND CONDITIONS - SHOULDER

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#### AREA CONDITIONS CODES - SHOULDER

- **2300 - Shoulder Separations**
  - **2310 - Rubber Leaving Casing**
  - **2320 - Casing Leaving Casing**
  - **2330 - Belt Edge Separation**
  - **2340 - Rubber Leaving Rubber**
    - **- Poor Adhesion**
  - **2350 - Ply Cord Exposed**
    - **(More Should)**
  - **2380 - Wing Tip Separation (Tread Edge)**
  - **2390 - Separation Not Identified**

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**SHOULDER CONDITIONS**

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<tr>
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<td>2300</td>
<td>Rejected &amp; Accepted</td>
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</table>

**Description:** Separation between shoulder rubber and casing, or between rubbers, with smooth interface, and could appear along with scorched rubber by excessive heat generation or traces of mechanical damages.

**Possible Causes:**
- Cut/penetration allow the degradation and/or oxidation of components of shoulder.
- Fatigue separations by excessive heat generation resulting from under inflation, overloading, prolonged continuous driving.
- Poor adhesion of shoulder’s components.

**Recommendation:**
- Drive carefully to avoid snags such as pothole in the road.
- Timely repair to prevent further damages.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading and/or long-term continuous driving.

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## SHOULDER CODES

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<td>2310</td>
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</table>

### Description:
Separation between shoulder rubber and casing.

### Photo:
![Image of tire with separation between shoulder rubber and casing]

### Possible Causes:
- Cut/penetration allow the degradation and/or oxidation of components of shoulder rubber and casing.
- Fatigue separations by excessive heat generation results from under inflation, overloading, prolonged continuous driving.
- Poor adhesion between shoulder rubber and casing.

### Recommendation:
- Drive carefully to avoid snags such as curbs in the road.
- Timely have tire repaired properly to prevent further damages if necessary.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading and/or driving for long time without stop.

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SHOULDER CONDITIONS CODES JUDGEMENT

| PCR/LTR/BIAS | Casing Leaving Casing | 2320 | Rejected & Accepted |

Description: Separations between tire casings at shoulder area.

Possible Causes:
- Cut/penetration allow the degradation and/or oxidation of components of shoulder casing and casing.
- Fatigue separations by excessive heat generation resulting from under inflation, overloading, prolonged continuous driving.
- Poor adhesion between casings.

Recommendation:
- Drive carefully to avoid snags such as curbs in the road.
- Timely have tire repaired properly to prevent further damages if
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading and/or drive for long-term continuous driving.

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<td>Belt Edge Separation</td>
<td>2330</td>
<td>Rejected &amp; Accepted</td>
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</table>

**Description:** Separation between shoulder rubber and belt edge.

**Possible Causes:**
- Cut/penetration allow the degradation and/or oxidation of components of belt edge and shoulder rubber.
- Fatigue separations by excessive heat generation resulting from under inflation, overloading, prolonged continuous driving.
- Poor adhesion between belt edge and shoulder rubber.

**Recommendation:**
- Drive carefully to avoid snags such as curbs in the road.
- Timely have tire repaired properly to prevent further damages if.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading and/or long-term continuous driving.
## SHOULDER CONDITIONS

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<td></td>
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### Description:
Separation between rubber surface at shoulder area with the evidence of poor adhesion.

### Photo:

![Image of rubber leaving rubber - poor adhesion](image)

### Possible Causes:
- Manufacturing defects resulting from poor adhesion between different rubber components.
- Caused by foreign material contamination, air trap and over aged components been used… etc

### Recommendation:
- Please contact local Giti Technical Service for further inspection.
### SHOULDER CONDITIONS - SHOULDER

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<td></td>
<td></td>
<td>2350</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

#### Description:
Shoulder separation accompanied with exposed ply cord.

#### Photo:
![Photo of tire with exposed ply cord]

#### Possible Causes:
- Fatigue separations by excessive heat generation resulting from under inflation, overloading, prolonged continuous driving.
- Poor adhesion between body ply cords and rubber compound.
- Moisture and air penetration through inner liner allow the degradation and/or oxidation of adhesion of rubber.

#### Recommendation:
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading and/or drive for long-term continuous driving.
- Check and improve manufacturing workmanship and process control.
- Please contact local GITI Technical Service for further inspection.

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<tr>
<td>Wing Tip Separation (Tread Edge)</td>
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</table>

**Description:** Edge of the tread wing separated from the casing.

**Possible Causes:**
- Poor adhesion of components.
- Contamination of the tread.
- Poor stitching of tread wing to the casing.

**Recommendation:** Please contact local GITI Technical Service for further inspection.

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### SHOULDER CONDITIONS

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<tr>
<td></td>
<td></td>
<td>2390</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:** Separations between shoulder components not listed or coded.

**Photo:** None

**Possible Causes:** • None

**Recommendation:** • Please contact local GITI Technical Service for further inspection.
# Codes and Conditions - Shoulder

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## 2900 - Poor Shoulder Appearance

- 2910 - Foreign Material
- 2920 - Rubber Starved
- 2930 - Blister
- 2940 - Contamination
- 2950 - Air Loss (Pinhole)
- 2960 - Poor Repair Workmanship
- 2970 - Flow Cracks
- 2980 - Wire Exposed
- 2990 - Under Cure

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**SHOULDER CONDITIONS**

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<td></td>
<td></td>
<td>2900</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Poor appearance on new tire shoulder.

**Photo:**

**Possible Causes:**
- Manufacturing defects caused by foreign materials attached to mould or green tire.
- Improper management on semi-products and/or finished-products.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.
### Shoulder Conditions - Shoulder Conditions

<table>
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<th>CONDITIONS</th>
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<tbody>
<tr>
<td>Foreign Material</td>
<td>2910</td>
<td></td>
<td>Accepted</td>
</tr>
</tbody>
</table>

#### Description:
Foreign Material is any non-rubber material, other than the intended compound, that is cured into the shoulder rubber. It may appear as a raised spot on the surface containing foreign material covered by surface rubber.

#### Photo:
![Foreign Material Image]

#### Possible Causes:
- Manufacturing defects caused by foreign materials attached to mould or green tire.

#### Recommendation:
- Please contact local GITI Technical Service for further inspection.

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**SHOULDER CODES AND CONDITIONS - SHOULDER**

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<tr>
<td>Rubber Starved</td>
<td>2920</td>
<td></td>
<td>Accepted</td>
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</table>

**Description:** Localized lack of rubber at shoulder area of a new tire.

**Possible Causes:**
- Manufacturing defects caused by remaining water, oil, grease, etc in mold or green tire.
- Curing bag defects.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.
**SHOULDER** | **CONDITIONS** | **CODES** | **JUDGEMENT**
--- | --- | --- | ---
TBR/PCR/LTR/BIAS | Blister | 2930 | Accepted

**Description:**
Internal voids on the surface of the shoulder of a new tire. They are usually characterized by a hollow bump on the shoulder surface.

**Photo:**
![Image of a tire with a blister]

**Possible Causes:**
- Manufacturing defects resulting from such volatile materials as air, moisture, gasoline, chemical agent, etc. contained in semi-product.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.
### SHOULDER CONDITIONS CODES JUDGEMENT

<table>
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<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Contamination</td>
<td>2940</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Shoulder surface of a new tire contaminated.

**Photo:**

**Possible Causes:**
- Manufacturing defects resulting from dirty mold.
- Improper management on semi-products and or finished-products.

**Recommendation:** Please contact local GITI Technical Service for further inspection.

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## Shoulder Codes and Conditions - Shoulder

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</table>

**Description:** Slow rate of air leak caused pinhole in shoulder of a new tire.

**Photo:**

**Possible Causes:**
- Manufacturing defects resulted from remaining foreign materials in mold, such as broken-pin.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.
### Shoulder Codes and Conditions

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<th>CONDITIONS</th>
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<td>Poor Repair Workmanship</td>
<td>2960</td>
<td>Accepted</td>
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**Description:** Obvious mending traces at shoulder, not influencing tire use.

**Possible Causes:** • Poor repair workmanship in plant.

**Recommendation:** • Please contact local GITI Technical Service for further inspection.

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### Shoulder Condition: Flow Cracks

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<tr>
<td>Flow Cracks</td>
<td>2970</td>
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<td>Accepted</td>
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</tbody>
</table>

**Description:** Cut-like cracks in shoulder surface of a tire, when examined closely, one side the cut is smooth and shiny and the other side folds over the other when stretched.

**Possible Causes:** • Manufacture defects resulting from improper mixture of rubber compound, dirty mold.

**Recommendation:** • Please contact local GITI Technical Service for further inspection.

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### SHOULDER CODES AND CONDITIONS - SHOULDER

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<tr>
<td>Wire Exposed</td>
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</table>

**Description:** Wire protruding through the interior or exterior surface of tire shoulder.

**Photo:**

**Possible Causes:**
- Manufacturing defects resulting from loose wires extruding from tread belts.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.

---

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**Description:** Shoulder rubber separation may occur circumferentially or locally, porosity and or micro bubbles can be observed.

**Possible Causes:**
- Manufacturing defects resulting from curing parameter out of tolerances.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.
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<td>Reported Condition Not Found</td>
<td>2998</td>
<td>Rejected</td>
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**Description:**
Reported condition can not be found or no any damages presented in shoulder area of a given tire.

**Photo:**
None

**Possible Causes:**
• None

**Recommendation:**
• None
TIRE CONDITION INSPECTION MANUAL

SHOULDER CODES AND CONDITIONS

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<td>Condition Unknown</td>
<td>2999</td>
<td>Rejected &amp; Accepted</td>
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</table>

Description: Any shoulder conditions not listed or coded.

Possible Causes: • None

Recommendation: • Please contact local GITI Technical Service for further inspection.

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3XXX - Sidewall Failures

- 3100 - Sidewall Surface Damages
- 3200 - Sidewall Cracks
- 3300 - Sidewall Separations
- 3400 - Sidewall Bursting
- 3500 - Sidewall Bulge (Not separation)
- 3700 - White SW Damages
- 3800 - Open Sidewall Splice
- 3900 - Poor Sidewall Appearance
- 3998 - Reported Condition Not Found
- 3999 - Condition Unknown
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```
3100 - Sidewall Surface Damages

3110 - Sidewall Cut
3120 - Sidewall Puncture
3130 - Damage Caused by Vehicle
3140 - Excessive Wear
3160 - Sidewall Migrating Wires
3170 - Transport Damage
3180 - Run Flat
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Purpose and Benefit of the Manual

The Purpose

• To summarize most of the potential tire failures.
• To implement a common code list for distribution, plants and field service staffs.
• To support data processing by giving each failure an unique code which is compiled with certain rules.
• To provide consistent records for quality statistics.
• To provide a consistent methodology for analysis of tires that has been removed from service.

The Benefits

Distributors and GITI Tire will gain information about:

• Out-of-Service conditions attributable to manufacturing workmanship, material and or operational usage.
• Quality and reliability of products and service distributed by GITI Tire.
• Causes of removal by type of tire.
• Corrective actions needed to improve tire performance.

Attention:

• Giti Tire (China) Investment Co., Ltd. reserves the right of final interpretation on description, photo, possible causes, recommendation of tire conditions shown in this manual.
### Codes by Tire Area

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<td>3XXX</td>
<td>Tube</td>
<td>TXXX</td>
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<tr>
<td>Bead</td>
<td>4XXX</td>
<td>Flap</td>
<td>FXXX</td>
</tr>
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</table>
### Sidewall Surface Damages

**Description:** Sidewall rubber separates with an evidence of punctures, cuts, scrapes.

**Possible Causes:**
- Tire punctured, scraped, cuts by external objects while running.

**Recommendation:**
- Drive carefully to avoid snags on the road while driving.
- Timely have tire repaired properly to prevent further damages if

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<tr>
<td>Sidewall Cut</td>
<td>3110</td>
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</table>

**Description:** Cuts, scrapes, gouges or bruises in the sidewall.

**Possible Causes:** • Road hazard, curbing, wash rack rails, pit rails, vandalism, etc

**Recommendation:** • Drive carefully to avoid sharp objects on the road.
  • Timely have tire repaired properly to prevent further damages if

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TBR/PCR/LTR/BIAS | Sidewall Puncture | 3120 | Rejected

**Description:** Sidewall punctured.

**Possible Causes:** • Road hazard, wash rack rails, pit rails, vandalism, etc.

**Recommendation:** • Drive carefully to avoid sharp objects on the road while driving.
• Timely have tire repaired properly to prevent further damages if
### SIDEWALL \ CONDITIONS \ CODES \ JUDGEMENT

| TBR/PCR/LTR/BIAS | Damage Caused by Vehicle | 3130 | Rejected |

**Description:** Uniform scuffing or cutting on some major portion of the tire's outer surface, usually extending 360° around the tire.

**Possible Causes:**
- Wrong positioned vehicle components, such as spring board.
- Contact with vehicle components, such as loose U-bolts, slipped spring clips, restraining bolts, loose fenders, etc.

**Recommendation:**
- Periodically inspect and maintain vehicle mechanical system.
- Ensure the tire does not come in contact with vehicle's components.
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<th>CONDITIONS</th>
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<td>TBR/PCR/LTR/BIAS</td>
<td>Excessive Wear</td>
<td>3140</td>
<td>Rejected</td>
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</table>

**Description:** Abrasion on large areas of sidewall, Usually exhibited by tires on city bus.

**Photo:**

![Image of a worn tire sidewall](image)

**Possible Causes:** • Abrasion between tire and curbstones or road fence.

**Recommendation:** • Avoid snags, curb, curbstones, road fence on the road while driving.

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### SIDEWALL CONDITIONS JUDGEMENT

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<td></td>
<td>Sidewall Migrating Wires</td>
<td>3160</td>
<td>Accepted</td>
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</tbody>
</table>

**Description:** Belt wire migrated and pierce through the sidewall.

**Photo:**

![Belt wire migrated and pierce through the sidewall](image)

**Possible Causes:**
- Manufacturing defects resulting from loose wires extruding from tread belts.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.

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<td>Transport Damage</td>
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<td>Rejected</td>
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</table>

**Description:** Poor appearance (e.g., slight scrapes) at sidewall of new tire by transport.

**Photo:**

![Tire Sidewall Photo](image_url)

**Possible Causes:** • Cuts, scrapes, etc. by improper transportation and or shipment operation.

**Recommendation:** • Check and review shipping/transport operation process.
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<td>Run Flat</td>
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**Description:** Sidewalls exhibit jagged cracks usually 360° around tire. Chunk of sidewall may be missing as well. In advanced stage, tire will loss their tread and belt package.

**Photo:**

![Sidewall image]

**Possible Causes:**
- Tire running with loss of inflation pressure resulting from sudden puncture or impact.
- Severe overloading and/or low pressure.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading.
- Drive carefully, e.g. steer clear of snags, pothole, or other objects in road.
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<td>SIDEWALL</td>
<td>Sidewall Cracks</td>
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### Codes and Conditions - Sidewall

- **3200 - Sidewall Cracks**
  - **3210 - Sidewall Circumferential Cracks**
  - **3220 - Radial Crease or Cracks**
  - **3230 - Angular Repeated (Diagonal) Cracking**
  - **3270 - Ozone Cracking**
### Codes and Conditions - Sidewall

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<td></td>
<td>Sidewall Cracks</td>
<td>3200</td>
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</table>

**Description:** Circumferential or locally cracks found at sidewall area.

**Possible Causes:**
- Serious distortion of sidewall extends to cracks after hitting obstructions.
- Tire running underinflated and/or overloaded operation.
- Excessive torque transfer.
- Manufacturing defects.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading.
- Drive carefully, e.g. steer clear of snags, pothole, or other objects in road.
- Check and review product design and manufacturing workmanship.

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<td>Sidewall Circumferential</td>
<td>3210</td>
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</tr>
<tr>
<td></td>
<td>Cracks</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Description:** Circumferential line-shaped cracks running parallel to the sidewall with smooth surface of cracks.

**Photo:**
![Circumferential line-shaped cracks running parallel to the sidewall with smooth surface of cracks.](image)

**Possible Causes:**
- Prolonged driving with under inflation, overloading.
- Large torque transfer.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Drive carefully and avoid overloading.

---

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## SIDEWALL

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<td></td>
<td>Radial Crease or Cracks</td>
<td>3220</td>
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</table>

### Description:
A vertical/diagonal break through the sidewall.

### Photo:
![Image of a tire with a radial crease or crack]

### Possible Causes:
- Serious distortion of sidewall extends to cracks after hitting obstructions.
- Cuts by foreign objects and/or severe impacts.
- Excessive torque transfer.
- Aggravated by under inflation/overloading and severe cold temperatures.

### Recommendation:
- Drive carefully, e.g. steer clear of snags, pothole, or other objects in road.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading.
### SIDEWALL CONDITIONS JUDGEMENT

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<td></td>
<td></td>
<td>3230</td>
<td>Rejected</td>
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</tbody>
</table>

**Description:** Several angular repeated diagonal cracks around the sidewall.

**Photo:**

![Image of tire with cracks](attachment:image.jpg)

**Possible Causes:**
- Driving with high torque in combination with insufficient pressure or overload
- Excessive torque transfer

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading.

---

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### Description:
Hairline cracks or corrugations at sidewall.

### Possible Causes:
- Normal aging condition but can be caused and/or aggravated by extended periods of parking under direct sunlight, or exposure to high concentrations of ozone, ozone can be generated from many sources, such as vehicle exhaust, welding, electric generators, etc.
- Long time of running under inflated.

### Recommendation:
- Keep tires away from heat source, vehicle exhaust, ozone and sunlight, electric generators and motors.
- Check and maintaining tire inflation pressure with a quality air gauge periodically.
### Tire Condition Inspection Manual Edition: GTQA-I-2012-EN

#### CODES AND CONDITIONS - SIDEWALL

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<td>Sidewall Separations</td>
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#### 3300 - Sidewall Separations

- 3310 - Rubber from Casing
- 3320 - Casing from Casing
- 3390 - Separation Not Identified

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**Description:** Separations between sidewall components, interfaces smooth.

**Possible Causes:**
- Cut/penetration allow the degradation and/or oxidation of components of sidewall
- Separations by heat generation resulting from prolonged continuous driving.
- Fatigue separation resulting from excessive sidewall flexing by running with under-inflation and overload.
- Poor adhesion between sidewall's components.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid large shear force impacts.
- Drive carefully, e.g. steer clear of snags, avoid fast/sharp cornering.
  - do not exceed tire speed rating.
- Avoid overloading and/or tire overwork from prolonged continuous driving.

**Photo:**

---

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<td>Rubber from Casing</td>
<td>3310</td>
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#### Description:
Separation between sidewall rubber and casing.

#### Photo:
![Image showing separation between rubber and casing]

#### Possible Causes:
- Cut/penetration allow the degradation and/or oxidation of components of sidewall rubber and casing.
- Separations by heat generation resulting from prolonged continuous driving.
- Fatigue separation resulting from excessive sidewall flexing by running with under-inflation and overload.
- Poor adhesion of sidewall rubber and casing.

#### Recommendation:
- Drive carefully, e.g. steer clear of snags, avoid fast/sharp cornering.
- Timely repair to prevent further damages.
- Avoid overloading and/or tire overwork from prolonged continuous driving.
- Avoid large shear force impacts.
- Check and maintain tire inflation pressure with a quality air gauge.
## SIDEWALL CONDITIONS

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<td></td>
<td></td>
<td>3320</td>
<td>Rejected &amp; Accepted</td>
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</table>

### Description:
Separation between casing and casing.

### Possible Causes:
- Cut/penetration allow the degradation and/or oxidation of components of sidewall casing plies.
- Separations by heat generation resulted from prolonged continuous driving.
- Fatigue separation resulting from excessive sidewall flexing by running with under-inflation and overload.
- Poor adhesion between the casings of sidewall.

### Recommendation:
- Drive carefully, e.g. steer clear of snags, avoid fast/sharp cornering.
- Timely repair to prevent further damages.
- Avoid overloading and/or tire overwork from prolonged continuous.
- Avoid large shear force impacts.
- Check and maintain tire inflation pressure with a quality air gauge.

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<th>Separation Not Identified</th>
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<th>Rejected &amp; Accepted</th>
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</table>

**Description:** Any Separation between sidewall components not listed or coded.

**Photo:** None

**Possible Causes:** • None

**Recommendation:** • Please contact local GITI Technical Service for further inspection.

---

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### 3400 - Sidewall Bursting

- [3430 - Sidewall Cut/ Impact Break](#)
- [3440 - CBU (Zipper Rupture)](#)
- [3480 - Cross-shaped Bursting](#)
TBR/PCR/LTR/BIAS | Sidewall Bursting | 3400 | Rejected

**Description:** Erratic breaking up and blowing out of cords.

**Photo:**

**Possible Causes:**
- Sudden external impact by running over snags, such as curb, pothole, etc.
- Punctures or cut by sharp objects.
- Excessive sidewall flexing distortion resulted from poor rim condition and fast/sharp turn with heavy loading and/or improper inflation pressure.
- Fatigue(weakening) of cords resulting from overtime driving under low inflation

**Recommendation:**
- Avoid overloading and/or tire overworking, e.g. longtime continuous driving.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Employ a quality and specified rim.
- Drive carefully, e.g. steer clear of snags, avoid sharp/fast cornering.
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<td>Sidewall Cut / Impact Break</td>
<td>3430</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Irregular-shaped breaking up and blowing out of cords with some evidences of cuts, abrasion, or other damages.

**Photo:**

**Possible Causes:**
- Sudden external impact by running over snags, such as curb, pothole, etc.
- Fast/sharp turn with heavy loading and/or improper inflation pressure can aggravated it happening.

**Recommendation:**
- Drive carefully, e.g. steer clear of snags, avoid sharp/fast cornering.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading and/or tire overworking, e.g. longtime continuous driving.
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<td>TBR/LTR</td>
<td>CBU (Zipper Rupture)</td>
<td>3440</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Ply cords break up. "Zipper" type rupture shown at sidewall with some cords drawing back to rubber.

**Photo:**

**Possible Causes:**
- Concentrated stress on sidewall cords from overloading, improper inflation pressure, sharp/fast cornering.
- Cuts or punctures by sharp objects.
- Excessive sidewall flexing distortion resulted from underinflation application.

**Recommendation:**
- Drive carefully, e.g. steer clear of snags, avoid sharp/ fast cornering.
- Check and maintain tire inflation pressure with a quality air gauge
- Avoid overloading and/or tire overworking, e.g. longtime continuous driving.
**Sidewall Codes and Conditions - Cross-shaped Bursting**

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<td>TBR/LTR</td>
<td>Cross-shaped Bursting</td>
<td>3480</td>
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</table>

**Description:** Cross-shaped blowout shown at sidewall.

**Possible Causes:**
- External impact by running over snags.
- Overloading, sharp/fast turning, improper inflation pressure.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Drive carefully, e.g. steer clear of snags, avoid sharp/fast cornering.
- Avoid overloading.

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<td>Sidewall Bulge (Not Separation)</td>
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3500 - Sidewall Bulge (Not Separation)

- 3501 - Sidewall Bulge - Tread Cuts
- 3610 - Sidewall Dent - Heavy Carcass Splice

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**SIDEWALL CODES**

**TBR/PCR/LTR/BIAS**

**Conditions:** Sidewall Bulge (Not Separation)

**Codes:** 3500

**Judgement:** Rejected & Accepted

---

**Description:** Radial, pencil-shaped bulge in the sidewall of a tire. In more severe conditions, bulge may also be seen when it is not inflated.

**Photo:**

---

**Possible Causes:**

- Broken cord from tread puncture, external impact, etc.
- Excessive high inflation pressure applied.
- Improper repair techniques.
- Manufacturing defects resulted from loose ply cords or heavy sidewall splice.

**Recommendation:**

- Drive carefully, e.g. steer clear of snags, pothole, curbs, etc.
- Check and review tire repair techniques and procedures.
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<td>Bulge - Tread Cuts</td>
<td>3501</td>
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<td>Rejected</td>
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</table>

**Description:** Radial sidewall bulge with signs of tread puncture or impact.

**Possible Causes:**
- Loss of adhesion between ply and sidewall rubber and/or broken ply cords resulted from tread punctured and/or external impact by curbs, potholes.

**Recommendation:**
- Careful driving, e.g. steer clear of snags, pothole, curbs, etc.
- Timely repair with proper repair techniques and procedures to prevent further

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<td>Sidewall Dent - Heavy Carcass Splice</td>
<td>3610</td>
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<td></td>
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</table>

**Description:** Dent appear at the sidewall of the tire.

**Photo:**

**Possible Causes:**
- Heavy carcass splice (overlapped carcass splice).
- Triggered and aggravated by high inflation pressure.

**Recommendation:** Please contact local GITI Technical Service for further inspection.

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### 3700 - White SW Damages

- 3710 - White SW Stain
- 3720 - White SW circumferential cracking
- 3730 - Poor sidewall Grinding
- 3790 - Other Failures

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## SIDEWALL CODES AND CONDITIONS - SIDEWALL

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<td>White SW Damages</td>
<td>3700</td>
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</tbody>
</table>

### Description:
Stains or cracks around sidewall white letters.

### Photo:
![Image of tire with white letter damages]

### Possible Causes:
- Erosion by white letter protective agent.
- Excessive sidewall flexing from longtime driving on under inflation.

### Recommendation:
- Check and review tire manufacturing workmanship and process.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
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<td>PCR/LTR</td>
<td>White SW Stain</td>
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**Description:** Stain at white letter side or color difference of rubber or tiny cracks at sidewall.

**Photo:**

![Image of a tire with a stain at the white letter side](image)

**Possible Causes:**

- Manufacturing defects resulting from improper brushing of white letter protective agent.

**Recommendation:**

- Please contact local GITI Technical Service for further inspection.

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<td>White SW Circumferential Cracking</td>
<td>3720</td>
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<td></td>
</tr>
</tbody>
</table>

**Description:** Tiny cracks on white sidewall side.

**Photo:**

- Normal aging cracks.
- Chemical reaction caused by improper coating protective agent to sidewall rubber.
- Excessive sidewall flexing from longtime driving with under inflation.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Please contact local GITI Technical Service for further inspection.

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<td></td>
<td>Poor Sidewall Grinding</td>
<td>3730</td>
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**Description:**
Worn flat circumferentially or partially at white sidewall side (uneven surface); Uneven grinding at white sidewall side.

**Photo:**
![Image of tire with grinding issues]

**Possible Causes:**
- Manufacturing defects resulted from poor buffing workmanship.

**Recommendation:**
- Please contact local Giti Technical Service for further inspection.

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<td>Other Failures</td>
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<td>Rejected &amp; Accepted</td>
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**Description:** Any White sidewall damages not listed or coded.

**Photo:** None

**Possible Causes:** • None

**Recommendation:** • Please contact local GITI Technical Service for further inspection.

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<tr>
<td></td>
<td></td>
<td>3800</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

### Description:
Regular smooth opening of the top layer of sidewall rubber that may appear radially or diagonally, the opening extends at a sharp angle into the sidewall rubber. No cords exposed.

### Photo:
![Image of Open Sidewall Splice]

### Possible Causes:
- Poor adhesion of sidewall splice due to water, petrol, or dust trapped in joint interface, or bloom of chemical on splice.

### Recommendation:
- Please contact local GITI Technical Service for further inspection.

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## Codes and Conditions - Sidewall

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<th>CODES</th>
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<tbody>
<tr>
<td>SIDEWALL</td>
<td>Poor Sidewall Appearance</td>
<td>3910 - 3990</td>
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</tbody>
</table>

- **3900 - Poor Sidewall Appearance**
  - 3910 - Foreign Material
  - 3920 - Rubber Starved
  - 3930 - Blister
  - 3940 - Contamination
  - 3950 - Air Loss (Pinhole)
  - 3960 - Poor Repair Workmanship
  - 3970 - Flow Cracks
  - 3980 - Wire Exposed
  - 3990 - Under Cure
## SIDEWALL CONDITIONS

<table>
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<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>3900</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

### Description:
Poor appearance on a new tire sidewall.

### Photo:
![Poor Sidewall Appearance](image)

### Possible Causes:
- Manufacturing defects caused by foreign materials attached to mould or green tire.
- Improper management on semi-products and/or finished-products.

### Recommendation:
- Please contact local GITI Technical Service for further inspection.
### CODES AND CONDITIONS - SIDEWALL

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Material</td>
<td>3910</td>
<td></td>
<td>Accepted</td>
</tr>
</tbody>
</table>

#### Description:
Foreign Material is any non-rubber material, other than the intended compound, that is cured into the sidewall rubber. It may appear as a raised spot on the surface containing foreign material covered by surface rubber.

#### Photo:
![Foreign Material Image](image)

#### Possible Causes:
- Manufacturing defects caused by foreign materials attached to mould or trapped in green tire.

#### Recommendation:
- Please contact local GITI Technical Service for further inspection.

---

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**TIRE CONDITION INSPECTION MANUAL**

<table>
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<tr>
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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Rubber Starved</td>
<td>3920</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Localized lack of rubber shown on the surface of sidewall of a tire.

**Photo:**

![Image of a tire with rubber starved condition](image)

**Possible Causes:**

- Manufacturing defects caused by remaining water, oil, grease, etc in mould or green tire.
- Water leakage of curing bladder.

**Recommendation:** Please contact local GITI Technical Service for further inspection.

---

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#### SIDEWALL CODES AND CONDITIONS - SIDEWALL

<table>
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<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blister</td>
<td>3930</td>
<td></td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Internal voids on the surface of the sidewall of a tire. They are usually characterized by a hollow bump on the sidewall surface.

**Photo:**

![Photo of a tire with a blister]

**Possible Causes:**
- Manufacturing defects resulting from such volatile materials as air, moisture, gasoline, chemical agent, etc. trapped in semi-product.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.

---

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### CODES AND CONDITIONS - SIDEWALL

<table>
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<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contamination</td>
<td>3940</td>
<td></td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Sidewall surface of a tire contaminated.

**Photo:**

**Possible Causes:**
- Manufacturing defects resulting from dirty mold.
- Improper field management on semi-products and or finished-products.

**Recommendation:**
- Please contact local Giti Technical Service for further inspection.
### SIDEWALL CONDITIONS CODES JUDGMENT

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODE</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Loss (Pinhole)</td>
<td>3950</td>
<td></td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Air leak from pinhole at sidewall of a tire.

**Possible Causes:**
- Manufacturing defects resulted from remaining foreign materials in mold, such as broken-pin.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.
## SIDEWALL CODES - SIDEWALL

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor Repair Workmanship</td>
<td>3960</td>
<td></td>
<td>Accepted</td>
</tr>
</tbody>
</table>

### Description:
Slight wounds could be seen at sidewall (not influencing tire use).

### Possible Causes:
- Poor repair workmanship in plant.

### Recommendation:
- Please contact local GITI Technical Service for further inspection.

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<thead>
<tr>
<th>SIDEWALL</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Flow Cracks</td>
<td>3970</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Cut-like cracks in sidewall surface of a tire, when examined closely, one side the cut is smooth and shiny and the other side folds over the other when stretched.

**Possible Causes:**
- Manufacturing defects resulting from improper mixture of rubber compound, dirty mold.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.

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### SIDEWALL | CONDITIONS | CODES | JUDGEMENT
--- | --- | --- | ---
TBR/PCR/LTR | Wire Exposed | 3980 | Accepted

**Description:** Wires could be seen circumferentially or partially at sidewall of a tire.

**Photo:**

![Image of wire exposed](image)

**Possible Causes:** • Manufacturing defects resulted from too thinness or short of sidewall rubber.

**Recommendation:** • Please contact local GITI Technical Service for further inspection.

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**Description:** Sidewall rubber separation may occur circumferentially or locally, porosity and or micro bubbles can be observed.

**Possible Causes:** • Manufacture defects resulting from curing parameter out tolerances.

**Recommendation:** • Please contact local Giti Technical Service for further inspection.
<table>
<thead>
<tr>
<th>SIDEWALL</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Reported Condition Not Found</td>
<td>3998</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Reported condition can not be found or no any damages presented in sidewall area of a given tire.

**Possible Causes:** • None

**Recommendation:** • None
## SIDEWALL CONDITIONS

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Condition Unknown</td>
<td>3999</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

### Description:
Any sidewall conditions not listed or coded.

### Photo:
None

### Possible Causes:
• None

### Recommendation:
• Please contact local GITI Technical Service for further inspection.

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4XXX - Bead Failures

- 4100 - Bead Surface Damages
- 4300 - Bead Separations
- 4400 - Bead Bursting
- 4700 - Open Apex Splice
- 4800 - Open Gum-chafer Splice
- 4900 - Poor Bead Appearance
- 4998 - Reported Condition Not Found
- 4999 - Condition Unknown
<table>
<thead>
<tr>
<th>AREA</th>
<th>CONDITIONS</th>
<th>CODES</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEAD</td>
<td>Bead Surface Damages</td>
<td>4110 - 4180</td>
</tr>
</tbody>
</table>

**4100 - Bead Surface Damages**

- 4110 - Bead Cut
- 4120 - Bead Deformation
- 4130 - Bead Pinch
- 4140 - Bead Trimming Damage
- 4170 - Transport Damage (Deformation)
- 4180 - Rim Friction
## Codes and Conditions - Bead

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>Conditions</th>
<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bead Surface Damages</td>
<td>4100</td>
<td></td>
<td>Rejected</td>
</tr>
</tbody>
</table>

### Description:
Visible damages on bead, such as mechanical damages, carbonization, or rubber loss, etc.

### Photo:
![Bead Surface Damages Image]

### Possible Causes:
- Unmatched rim size.
- Bad rim conditions, such as damaged/distorted/cracked/rusted, broken rim.
- Improper tire mounting/demounting operation.

### Recommendation:
- Always use approved tire and rim combinations for diameters and contours.
- Follow up proper mounting and demounting procedure by using proper tools.

---

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**Description:** Mechanical damages could be seen on bead.

**Possible Causes:**
- Cuts/scrapes by poor rim conditions, such as damaged/ distorted/ cracked/ rusted/ broken rim.
- Rough mounting and demounting operation.

**Recommendation:**
- Inspect the rim or wheel for any damages, keep the rim in good condition.
- Follow up proper mounting and demounting procedure by using proper tools.
### BEAD CODES

**TBR/PCR/LTR/BIAS**

**Bead Deformation**

**CODES**  4120

**JUDGEMENT**  Rejected

### Description

This condition is self-explanatory. Obvious bead deformation is exhibited.

### Photo

![Image of bead deformation]

### Possible Causes

- Distorted bead caused by improper mounting/demounting operation, heat, improperly seated on rim, overloading.
- Unmatched rim size, locally distorted/damaged rim.

### Recommendation

- Follow up proper mounting and demounting procedures by using the proper tools.
- Always use approved tire and rim combinations for diameters and contours.
- Avoid overloading.
### Description:
There is no problem noticed on bead area after tire mounted, bead area damaged by rim due to kinked while driving.

### Possible Causes:
- Incorrect rim size, improper bead seating.
- Unmatched rim size, locally distorted/damaged rim.
- Improper tire mounting technique.

### Recommendation:
- Always use approved tire and rim combinations for diameters and contours.
- Inspect closely of the rim condition while mounting tire.
- Follow up proper mounting and demounting procedures by using the proper tools.
### TBR/PCR/LTR/BIAS

<table>
<thead>
<tr>
<th>Description</th>
<th>Photo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small cuts occur on circumference of bead resulting from poor trimming technique.</td>
<td>![Image of bead trimming damage]</td>
</tr>
</tbody>
</table>

#### Possible Causes:
- Poor trimming and/or repair workmanship and techniques in plant.

#### Recommendation:
- Please contact local Giti Technical Service for further inspection.

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# Codes and Conditions - Bead

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<th>Conditions</th>
<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR</td>
<td>Transport Damage (Deformation)</td>
<td>4170</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Obvious bead distortion occurred during tire shipping.

**Possible Causes:**
- Improper loading/unloading and/or transport operation.

**Recommendation:**
- Check and review tire shipping/transport operation process.

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<table>
<thead>
<tr>
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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIAS</td>
<td>Rim Friction</td>
<td>4180</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Fabrics at bead rubbed by rim flange with cords migrating circumferentially which would even lead to blowing out of the tire.

**Possible Causes:**
- Severely rusted or distorted rim leads to improper bead seating which further resulting in partially or fully broken fabric.
- Broken play cords circumferentially from severe overload.
- Driving on under inflation/ incorrect rim size.
- Excessive over loading and high inflation pressure

**Recommendation:**
- Always use approved tire and rim combinations for diameters and contours.
- Inspect the rim or wheel for any damages, keep rim in good condition.
- Avoid overloading.
- Check and maintain tire inflation pressure with a quality air gauge periodically.

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<tbody>
<tr>
<td>BEAD</td>
<td>Bead Cracks</td>
<td>4210 - 4270</td>
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</table>

- 4210 - Bead Circumferential Cracks
- 4220 - Crack Outer
- 4230 - Crack below Rim-line
- 4240 - Crack Inner
- 4260 - Bead Toe Crack/Tearing
- 4270 - Bead Ozone Crack
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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCR/LTR</td>
<td>Bead Circumferential Cracks</td>
<td>4210</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:** Continuously or discontinuously circumferential splits running parallel to the beads.

**Possible Causes:**
- Overloading, improper inflation pressure, unmatched rim size, improper bead seating.
- Ply turn up not well pressed and volatile chemical not dried during manufacturing process.

**Recommendation:**
- Always use approved tire and rim combinations for diameters and contours.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading.
### BEAD CONDITIONS

<table>
<thead>
<tr>
<th>TBR/PCR/LTR</th>
<th>Crack Outer</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>4220</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

#### Description:
Circumference or localized split/cracks above bead area that contacts with rim flange.

#### Photo:
![Image of crack outer condition](image)

#### Possible Causes:
- Severe overloading, improper inflation pressure.
- Unmatched rim size and or bad rim condition, such as locally distorted/cracks rim.
- Big torsion angle of long vehicle when turning.
- Improper bead seating.

#### Recommendation:
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading.
- Always use approved tire and rim combinations for diameters and contours.
- Avoid rough driving habits, e.g. sharp turning, braking, overtime continuous driving.

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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/LTR</td>
<td>Crack Below Rim-line</td>
<td>4230</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Circumferential or localized splits/cracks occurring below rim line.

**Possible Causes:**
- Unmatched rim size.
- Severe overloading and under inflation leads to flexing fatigue (weakening).
- Frequent sharp braking and turning, etc.

**Recommendation:**
- Always use approved tire and rim combinations for diameters and contours.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading, rough driving style.

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### BEAD CODES

#### TBR/PCR/LTR/BIAS

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<tr>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crack Inner</td>
<td>4240</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:** Localized or circumferential occurring inside of bead area.

**Possible Causes:**
- Unmatched rim size.
- Under inflation or overloading.
- Separated ends of bead chafer from excessive bead flexing when frequent sharp turning and skid operation.
- Improper adhesion of bead components during tire manufacturing process.

**Recommendation:**
- Always use approved tire and rim combinations for diameters and contours.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading.
- Avoid rough driving habits, e.g. sharp turning, braking, overtime continuous driving.
**Bead Toe Crack / Tearing**

<table>
<thead>
<tr>
<th><strong>Bead</strong></th>
<th><strong>Conditions</strong></th>
<th><strong>Codes</strong></th>
<th><strong>Judgement</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR</td>
<td>Bead Toe Crack / Tearing</td>
<td>4260</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Bead toe is cracked or torn by mounting tools. This damage is observed on tubeless tires.

**Possible Causes:**
- Careless mounting and demounting work.
- Bead toe rubber is aging by heat of brake drum.

**Recommendation:**
- Follow up proper mounting and demounting procedures by using the proper tools.
- Avoid extreme heat build up from brake drum of frequent and rough braking.
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bead Ozone Crack</td>
<td>4270</td>
<td></td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Numerous tiny cracks on bead surface, usually 360° around the tire.

**Possible Causes:**
- Normal aging condition but can be caused and/or aggravated by extended periods of parking under direct sunlight, or exposure to high concentrations of ozone, ozone can be generated from many sources, such as vehicle exhaust, welding, electric generators, etc.
- Long time of running under inflated.

**Recommendation:**
- Keep tires away from source of heat, vehicle exhaust, ozone and direct sunlight, as well as electric generators and motors.
- Check and maintain tire inflation pressure with a quality air gauge.
4300 - Bead Separations

- 4310 - Chafer Edge Separation
- 4320 - Chafer Separation
- 4330 - Ply Turn Up Separation
- 4340 - Apex from SW Rubber
- 4350 - Nylon Chafer Separation
- 4360 - Apex Leaving Ply Cord
- 4370 - Bead Separation
  - Poor Ply Cord Adhesion
- 4390 - Separation Not Identified

Back to Menu
# Bead Separations

**Description:** Localized or circumferential bulge occurring in bead area.

**Possible Causes:**
- Improper bead seating, unmatched rim size, poor rim condition, such as damaged/distorted rim;
- Flexing fatigue(weakening) of bead from overloading and/or continuous driving with under inflation, and/ or frequent sharp braking and cornering, etc.
- Poor adhesion of bead components during manufacturing process.

**Recommendation:**
- Always use approved tire and rim combinations for diameters and contours.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading.
- Avoid rough driving habits, e.g. sharp turning, braking, overtime continuous driving.
- Follow up proper mounting and demounting procedure by using proper tools.
- Check and review manufacturing workmanship and process.

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## Codes and Conditions - Bead

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<th>BEAD</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR</td>
<td>Chafer Edge Separation</td>
<td>4310</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

### Description:
Separation at bead chafer edge. Hollow could be sensed on separation area when pressed with hands or knocked with tools. In more severe conditions, some may even exhibit circumferential cracks.

### Photo:
![Image of bead separation](image)

### Possible Causes:
- Incorrect rim size, improper bead seating.
- Severe overloading and under inflation which produce excessive flexing fatigue of bead components.
- Aggressive driving habits, such as frequent sharp braking and cornering, etc.
- Poor adhesion of tire components during tire manufacturing process.

### Recommendation:
- Always use approved tire and rim combinations for diameters and contours.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading.
- Avoid rough driving habits, e.g. sharp cornering, braking, overtime continuous driving.
- Follow up proper mounting and demounting procedure by using proper tools.
- Check and review manufacturing workmanship and process.

---

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## BEAD CODES

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<th>JUDGEMENT</th>
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</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR</td>
<td>Chafer Separation</td>
<td>4320</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

### Description
Separation at bead chafer. Hollow could be sensed on separation area when pressed with hands or knocked with tools. In more severe conditions, some may even exhibits circumferential cracks.

### Photo
![Image of Chafer Separation](image_url)

### Possible Causes
- Incorrect rim size, improper bead seating.
- Severe overloading and under inflation which produce excessive flexing fatigue of bead components;
- Aggressive driving habits, such as frequent sharp braking and turning, etc.
- Poor adhesion of tire components during tire manufacturing process.

### Recommendation
- Always use approved tire and rim combinations for diameters and contours.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading.
- Avoid rough driving habits, e.g. sharp turning, braking, overtime continuous driving.
- Follow up proper mounting and demounting procedure by using proper tools.
- Check and review manufacturing workmanship and process.

---

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<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Ply Turn Up Separation</td>
<td>4330</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:** Separation at ply turn-up. Hollow could be sensed when pressed with hands or knocked separation area with tools. In more severe conditions, some may even exhibit circumferential cracks.

**Possible Causes:**
- Incorrect rim size, improper bead seating.
- Severe overloading and under inflation which produce excessive flexing fatigue of bead components;
- Aggressive driving habits, such as frequent sharp braking and turning, etc.
- Poor adhesion of tire components during tire manufacturing process.

**Recommendation:**
- Always use approved tire and rim combinations for diameters and contours.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading.
- Avoid rough driving habits, e.g. sharp turning, braking, overtime continuous driving.
- Follow up proper mounting and demounting procedure by using proper tools.
- Check and review manufacturing workmanship and process.

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### Description:
Separation between Apex and sidewall rubber. Hollow could be sensed when pressed with hands or knocked separation area with tools. In more severe conditions, some may even exhibits circumferential cracks.

### Possible Causes:
- Incorrect rim size, improper bead seating.
- Severe overloading and under inflation which produce excessive flexing fatigue of bead components;
- Aggressive driving habits, such as frequent sharp braking and turning, etc.
- Poor adhesion of tire components during tire manufacturing process.

### Recommendation:
- Always use approved tire and rim combinations for diameters and contours.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading.
- Avoid rough driving habits, e.g. sharp turning, braking, overtime continuous driving.
- Follow up proper mounting and demounting procedure by using proper tools.
- Check and review manufacturing workmanship and process.

---

<table>
<thead>
<tr>
<th>BEAD</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
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</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR</td>
<td>Apex from SW Rubber</td>
<td>4340</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>
## Codes and Conditions - Bead

### Bead Conditions

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<thead>
<tr>
<th>TBR/LTR/BIAS</th>
<th>Nylon Chafer Separation</th>
<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>4350</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

### Description:
Separation between nylon chafers.

### Photo:

![Separation between nylon chafers](image)

### Possible Causes:
- Incorrect rim size, improper bead seating.
- Severe overloading and under inflation which produce excessive flexing fatigue of bead components;
- Aggressive driving behaviors, such as frequent sharp braking and turning, etc.
- Poor adhesion or over aged of tire components during tire manufacturing process.

### Recommendation:
- Always use approved tire and rim combinations for diameters and contours.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading.
- Avoid rough driving habits, e.g. sharp turning, braking, overtime continuous driving.
- Follow up proper mounting and demounting procedure by using proper tools.
- Check and review manufacturing workmanship and process.
## BEAD CONDITIONS - BEAD

<table>
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<th>TBR/PCR/LTR</th>
<th>Apex Leaving Ply Cord</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>4360</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

### Description:
Separation between apex and ply cords with the evidence of poor adhesion.

### Photo:

![Image of separation between apex and ply cords](image)

### Possible Causes:
- Manufacturing defects resulting from poor adhesion between different components.
- Caused by contamination, air trap and foreign substances.

### Recommendation:
- Please contact local GITI Technical Service for further inspection.

---

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### CODES AND CONDITIONS - BEAD

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<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bead Separation - Poor Ply Cord Adhesion</td>
<td>4370</td>
<td>Accepted</td>
<td></td>
</tr>
</tbody>
</table>

**Description:** Separation at bead area with evidence of ply cord poor adhesion.

**Photo:**

**Possible Causes:**
- Manufacturing defects resulting.
- Aggravated and triggered by improper inflation pressure, overloading, etc.

**Recommendation:** Please contact local GITI Technical Service for further inspection.

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<tr>
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<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Separation Not Identified</td>
<td>4390</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:** Any Separations between bead components not listed or coded.

**Photo:** None

**Possible Causes:** • None

**Recommendation:** • Please contact local Giti Technical Service for further inspection.

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<tr>
<td>BEAD</td>
<td>Bead Bursting</td>
<td>4410 - 4490</td>
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**4400 - Bead Bursting**

- 4410 - Cut Bursting
- 4420 - Heat Bursting
- 4450 - Bead Break During Inflation
- 4470 - Loose Bead Wire
- 4490 - Bursting Not Identified
## Description:
Bead blow-out with ply cords migrating out of bead. In more severe conditions, extending to shoulders.

### Photo:
![Bead Bursting Image 1](image1)
![Bead Bursting Image 2](image2)

### Possible Causes:
- Sudden Impacted or punctured by running over snags, such as pothole, curbstones.
- Unmatched rim size, bad rim conditions, such as distorted/cracked/rusted, broken rim.
- Overloading and/or high inflation pressure.
- Improper bead seating.
- Rough driving habits of sharp/hard turning.

### Recommendation:
- Avoid overloading, rough driving style, e.g. steer clear of snags, avoid sharp turning.
- Inspect the rim or wheel for any damages, keep rim in good condition.
- Always use approved tire and rim combinations for diameters and contours.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
### BEAD CONDITIONS CODES JUDGEMENT

| TBR/PCR/LTR/BIAS | Cut Bursting | 4410 | Rejected |

**Description:** Bead burst even extending to shoulders, ply cords migrating out of bead. Obvious mechanical damages could be seen.

**Photo:**

**Possible Causes:**  
- Sudden Impacted or punctured by running over snags, such as pothole, curbstones.

**Recommendation:**  
- Avoid rough driving style, e.g. steer clear of snags, avoid sharp turning, etc.
<table>
<thead>
<tr>
<th>BEAD</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Heat Bursting</td>
<td>4420</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:**
Bead burst with ply cords migrating out of bead. A sign of excessive heat generation can be found in bead area, such as rough, brittle, distorted and/or discolored hard surface of bead.

**Possible Causes:**
- Excessive heat build up at bead and rim interface from faulty braking system, frequent hard braking, overloading, improper inflation pressure.
- Unmatched rim size.
- Locally concentrated stress from improper bead seating, and or poor rim condition, such as damaged, distorted, and/or rusty rim.

**Recommendation:**
- Check and maintain vehicle braking system periodically.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid rough driving style, e.g. avoid frequent sharp braking/turning, etc.
- Inspect the rim or wheel for any damages, keep rim in good condition.

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### BEAD CONDITION: Bead Break During Inflation

**Possible Causes:**
- Extreme tension from improper lubricant on bead area during tire inflation.
- Improper bead seating.
- Bad rim condition, e.g. unmatched rim size, damaged / locally distorted rim.

**Recommendation:**
- Following up the proper tire/rim assembly procedures. E.g. Apply an approved to lubricate inside and outside surfaces of both beads and rim flange.
- Clean rim or wheel—inspect the rim or wheel for damages.
- Do not exceed the maximum inflation pressure shown on the sidewall of the tire.

---

**Description:** Bead bundle get broken.

**Photo:**

---

**Codes and Conditions - Bead**

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<tr>
<th>PCR/LTR</th>
<th>Bead Break During Inflation</th>
<th>4450</th>
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### BEAD CONDITIONS - BEAD

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<th>CODES</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>4470</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:**
Bead wires become loose and fall to pieces.

**Possible Causes:**
- Incorrect rim size, improper bead seating.
- Severe overloading and under inflation which produce excessive flexing fatigue of bead components;
- Aggressive driving behaviors, such as frequent sharp braking and turning, etc.
- Poor adhesion of tire components during tire manufacturing process.

**Recommendation:**
- Always use approved tire and rim combinations for diameters and contours.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading.
- Avoid rough driving habits, e.g. sharp turning, braking, overtime continuous driving.

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### Description
Any Bead bursting not listed or coded.

### Photo
None

### Possible Causes
• None

### Recommendation
• Please contact local GITI Technical Service for further inspection.

---

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<td>Open Apex Splice</td>
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</table>

4700 - Open Apex Splice

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Bead Codes

**Description:** Open apex splice. This damage often causes ply turn up separation.

**Possible Causes:**
- Poor adhesion of splice due to wrong condition of rubber cement, water, petrol, or dust trapped in joint interface, or bloom of chemical on splice.

**Recommendation:** Please contact local GITI Technical Service for further inspection.

**Photo:**
- Open apex splice

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<th>CONDITIONS</th>
<th>CODES</th>
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</thead>
<tbody>
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<td>BEAD</td>
<td>Open Gum-chafer Splice</td>
<td>4800</td>
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</tbody>
</table>

**4800 - Open Gum-chafer Splice**

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## BEAD CONDITIONS CODES JUDGEMENT

| TBR/LTR | Open Gum-chafer Splice | 4800 | Accepted |

### Description:
Opened gum-chafer splice.

### Photo:
![Photo of Open Gum-chafer Splice](image)

### Possible Causes:
- Poor adhesion of splice due to water, petrol, or dust trapped in joint interface, or bloom of chemical on splice.
- Aggravated by improper inflation pressure, overloading, unmatched rim size.

### Recommendation:
- Please contact local GITI Technical Service for further inspection.
<table>
<thead>
<tr>
<th>AREA</th>
<th>CONDITIONS</th>
<th>CODES</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEAD</td>
<td>Poor Bead Appearance</td>
<td>4910 - 4990</td>
</tr>
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</table>

- **4900 - Poor Bead Appearance**
  - 4910 - Foreign Material
  - 4920 - Rubber Starved
  - 4930 - Blister
  - 4940 - Contamination
  - 4950 - Bead Air Leakage
  - 4960 - Poor Repair Workmanship
  - 4970 - Flow Cracks
  - 4980 - Migrating Bead Wire
  - 4990 - Under Cure

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### BEAD CODES

**TBR/PCR/LTR/BIAS**

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<th>CODES</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Poor Bead Appearance</td>
<td>4900</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Poor appearance on tire bead.

**Possible Causes:**
- Manufacturing defects caused by foreign materials attached to mould or green tire.
- Improper management on semi-products and/or finished-products.
- Improper mixture of tire rubber compound.

**Recommendation:** Please contact local GITI Technical Service for further inspection.

---

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### Description:
Foreign Material is any non-rubber material, other than the intended compound, that is cured into the bead rubber. It may appear as a raised spot on the surface containing foreign material covered by surface rubber.

### Possible Causes:
- Manufacturing defects caused by foreign materials attached to mould or green tire.

### Recommendation:
- Please contact local GITI Technical Service for further inspection.
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubber Starved</td>
<td>4920</td>
<td></td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Lack of rubber on bead area of a tire.

**Photo:**

**Possible Causes:**
- Manufacturing defects caused by remaining water, oil, grease, etc in mold or green tire. Rubber did not completely fill out the mold.
- Water leakage of curing bladder.

**Recommendation:** Please contact local GITI Technical Service for further inspection.
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blister</td>
<td>4930</td>
<td></td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:**
Internal voids on the surface of bead of a tire. Usually characterized by a hollow bump on inner surface.

**Photo:**
![Image of a tire bead with a blister]

**Possible Causes:**
- Manufacturing defects resulting from such volatile materials as air, moisture, gasoline, chemical agent, etc. trapped in semi-product.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.
<table>
<thead>
<tr>
<th>BEAD</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Contamination</td>
<td>4940</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Bead surface of a tire contaminated.

**Photo:**

**Possible Causes:**
- Manufacturing defects resulting from dirty mold.
- Improper storage management on semi-products and/ or finished-products.

**Recommendation:** Please contact local GITI Technical Service for further inspection.
BEAD | CONDITIONS | CODES | JUDGEMENT
---|---|---|---
TBR/PCR/LTR/BIAS | Bead Air Leakage | 4950 | Accepted

**Description:** Air leak out from bead.

**Possible Causes:**
- Any object trapped between bead and rim such as bar code sticker, etc.
- Improper tire/rim assembly technique.

**Recommendation:**
- Disassemble tire/rim assembly and lubricate bead area properly again.
- Always follow up the proper tire mounting procedure and proper lubricating.
- Please contact local GITI Technical Service for further inspection.
## BEAD

### CONDITIONS

| TBR/PCR/LTR/BIAS | Poor Repair Workmanship | 4960 | Accepted |

### Description:

Evidence of trimming or buffing could be seen in bead area, not influencing tire's usage.

### Photo:

![Image of tire bead with trimming or buffing](image)

### Possible Causes:

- Poor repair workmanship and techniques in plant.

### Recommendation:

- Please contact local GITI Technical Service for further inspection.
### BEAD CONDITIONS CODES JUDGEMENT

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>Flow Cracks</th>
<th>4970</th>
<th>Accepted</th>
</tr>
</thead>
</table>

### Description:
Cut-like cracks in bead surface of a tire, when examined closely, one side the cut is smooth and shiny and the other side folds over the other when stretched.

### Photo:
![Image of flow cracks](image_url)

### Possible Causes:
- Manufacture defects resulting from improperly mixed rubber compound, dirty mold.

### Recommendation:
- Please contact local GITI Technical Service for further inspection.

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## Codes and Conditions - Bead

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<th>Conditions</th>
<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Migrating Bead Wire</td>
<td>4980</td>
<td>Accepted</td>
<td></td>
</tr>
</tbody>
</table>

### Description:
Bead wire tilted or stuck out from bead, deviating from normal position.

### Photo:
![Bead wire tilted](image)

### Possible Causes:
- Manufacturing defects.

### Recommendation:
- Please contact local GITI Technical Service for further inspection.
<table>
<thead>
<tr>
<th>BEAD</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
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</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Under Cure</td>
<td>4990</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Bead rubber separation may occur circumferentially or locally, porosity and or micro bubbles can be observed on bead rubber.

**Photo:**

**Possible Causes:**
- Manufacture defects resulting from curing parameter out tolerances.

**Recommendation:**
- Please contact local Giti Technical Service for further inspection.
## BEAD - Conditions

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reported Condition Not Found</td>
<td>4998</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

### Description:
Reported condition can not be found or no any damages presented in bead area of a given tire.

### Photo:
None

### Possible Causes:
- None

### Recommendation:
- None
**Bead Codes**

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/Bias</th>
<th>Conditions</th>
<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Condition Unknown</td>
<td>4999</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:** Any bead conditions not listed or coded.

**Possible Causes:** • None

**Recommendation:** • Please contact local GITI Technical Service for further inspection.

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5XXX - Inner Failures

- 5100 - Inner General
- 5200 - Pinch Shock
- 5300 - Inner Separations
- 5400 - Ply Cord Exposed
- 5500 - Inner Liner Undulation (Roughness Inner Liner)
- 5600 - Broken Ply Cords (BIAS)
- 5800 - Open Inner Liner Splice (Joint Sepa.)
- 5900 - Poor Inner Appearance
- 5998 - Reported Condition Not Found
- 5999 - Condition Unknown
## Codes and Conditions - Inner

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<th>CONDITIONS</th>
<th>CODES</th>
</tr>
</thead>
<tbody>
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<td>INNER</td>
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<td>5170 - 5180</td>
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</tbody>
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### Table:

- **5100 - Inner General**
  - ![Back to Menu]
  - **5170 - Transport Damage**
  - **5180 - Run Flat**

[Diagram showing the relationships between the codes and conditions]
### INNER CONDITIONS

<table>
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<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner General</td>
<td>5100</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

### Description:
Separation, visible damage in tire interior surface, etc.

### Possible Causes:
- Continuous driving with under inflation and/or overloading.
- Under inflation creates flexing which generates heat and fatigue to cause components breakdown.

### Recommendation:
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading.
- Follow up proper mounting and demounting procedures by using the proper tools.

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<th>CODES</th>
<th>JUDGEMENT</th>
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<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Transport Damage</td>
<td>5170</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Poor appearance of new tire inner, such as cuts or scratches during tire shipping/transport operation.

**Possible Causes:**
- Improper shipping/transport operation.

**Recommendation:**
- Check and review shipping/transport operation process.
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<th>INNER Codes and Conditions - Inner</th>
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</thead>
<tbody>
<tr>
<td><strong>TBR/PCR/LTR/BIAS</strong></td>
</tr>
<tr>
<td><strong>Description:</strong></td>
</tr>
<tr>
<td><strong>Photo:</strong></td>
</tr>
</tbody>
</table>
| **Possible Causes:** | • Continuous driving with under inflation and/or overloading.  
• Under inflation creates flexing which generates heat and fatigue to cause components breakdown. |
| **Recommendation:** | • Check and maintain tire inflation pressure with a quality air gauge periodically.  
• Avoid overloading.  
• Follow up proper tire repair procedures and techniques by using the proper tools. |

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<td>INNER</td>
<td>Pinch Shock</td>
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5200 - Pinch Shock

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<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Pinch Shock</td>
<td>5200</td>
<td></td>
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</tbody>
</table>

**Description:**
A bulge is exhibited in sidewall of an inflated-tire, cracks/splits can be detected on the corresponding position of inside the tire. In some cases, when dissecting the "bulge", a few cords has already broken, an evidence of pinch between rim and road obstacle can be noticed either.

**Possible Causes:**
- Severe, concentrated impact with a foreign object, curb or pothole;
- Aggravated by over inflation and high speed.
- Total tire failure could be immediate or delayed depending upon severity of the impact.

**Recommendation:**
- Drive carefully, steer clear of curb stones, pothole, etc.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Follow up proper tire repair procedures and techniques by using the proper tools.

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### Codes and Conditions - Inner

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<tbody>
<tr>
<td>INNER</td>
<td>Inner Separations</td>
<td>5310 - 5390</td>
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#### 5300 - Inner Separations
- 5310 - Inner Liner Separation (From Inner)
- 5320 - Inner Liner Separation (From Casing)
- 5390 - Separation Not Identified

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### INNER SEPARATIONS - INNER

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<tbody>
<tr>
<td>Inner Separations</td>
<td>5300</td>
<td>Rejected &amp; Accepted</td>
<td></td>
</tr>
</tbody>
</table>

**Description:** Separation of inner components, inner liner leaving casing, or casing leaving casing. In the early using stage, bulge could be exhibited interiorly.

**Photo:**

**Possible Causes:**
- Fatigue separations by excessive heat generation resulting from under inflation, overloading long-time continuous driving.
- Poor adhesion between inner components.

**Recommendation:**
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading and/or prolonged continuous driving at excessive speed.

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## INNER CONDITIONS

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<th>Inner Liner Separation (From Inner Liner)</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5310</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

### Description:
Separation between inner liner components, inner liner leaving inner liner. In the early usage stage, bulge could be exhibited interiorly.

### Photo:

![Inner Liner Separation](image)

### Possible Causes:
- Fatigue separations by excessive heat generation resulting from under inflation, overloading long-time continuous driving.
- Poor adhesion of inner liners during tire manufacturing process.

### Recommendation:
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading and/or prolonged continuous driving at excessive speed.

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## INNER CONDITIONS - INNER

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<tbody>
<tr>
<td>TBR/PCR/LTR</td>
<td>Inner Liner Separation (From Casing)</td>
<td>5320</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

### Description:
Separation between inner liner and casing. In the early using stage, bulge could be exhibited interiorly.

### Photo:

![Inner Liner Separation Photo](image)

### Possible Causes:
- Fatigue separations by excessive heat generation resulting from under inflation, overloading long-time continuous driving.
- Poor adhesion between inner liner and casing during tire manufacturing process.

### Recommendation:
- Check and maintain tire inflation pressure with a quality air gauge periodically.
- Avoid overloading and/or prolonged continuous driving at excessive speed.
**Description:** Any separations between inner components not listed or coded.

**Possible Causes:** • None

**Recommendation:** • Please contact local Giti Technical Service for further inspection.
### CODES AND CONDITIONS - INNER

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<thead>
<tr>
<th>AREA</th>
<th>CONDITIONS</th>
<th>CODES</th>
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</thead>
<tbody>
<tr>
<td>INNER</td>
<td>Ply Cord Exposed</td>
<td>5410 - 5420</td>
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</tbody>
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- **5400 - Ply Cord Exposed**
  - Back to Menu
  - **5410 - Ply Cord Exposed**
    - (No Shoulder)
  - **5420 - Ply Cord Exposed**
    - (Less Shoulder)
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>INNER CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ply Cord Exposed</td>
<td>5400</td>
<td>Accepted</td>
<td></td>
</tr>
</tbody>
</table>

**Description:**

Ply cords in the inner liner of a tire are exposed locally, frequently may appear on the inside shoulder area.

**Photo:**

![Photo of ply cord exposed](image)

**Possible Causes:**

- Manufacturing defects resulting from abnormal flow behavior of rubber compounds inside mold during curing, tire components' gauge out of tolerance.

**Recommendation:**

- Please contact local GITI Technical Service for further inspection.
## INNER CONDITIONS

<table>
<thead>
<tr>
<th>INNER</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Ply Cord Exposed (No Shoulder Separation)</td>
<td>5410</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

### Description:
Ply cords in the inner liner of a tire are exposed locally, frequently may appear on the inside shoulder area. With no evidence of shoulder separation.

### Photo:
![Image of a tire with exposed ply cords](image)

### Possible Causes:
- Manufacturing defects resulting from abnormal flow behavior of rubber compounds inside mold during curing, tire components' gauge out of tolerance.

### Recommendation:
- Please contact local GITI Technical Service for further inspection.

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## INNER CODES

| Description: | Ply cords in the inner liner of a tire are exposed locally, frequently may appear on the inside shoulder area. Be accompanied with a lightly shoulder separation but less than ply cords exposed. |
| Photo: | ![Image of Ply Cord Exposed](image) |
| Possible Causes: | Manufacturing defects resulting from abnormal flow behavior of rubber compounds inside mold during curing, tire components’ gauge out of tolerance. |
| Recommendation: | Please contact local GITI Technical Service for further inspection. |

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<th>CONDITIONS</th>
<th>CODES</th>
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</thead>
<tbody>
<tr>
<td>INNER</td>
<td>Inner Liner Undulation</td>
<td>5510 - 5580</td>
</tr>
</tbody>
</table>

5500 - Inner Liner Undulation

- 5510 - Cord Shadow/ Thin IL gauge
- 5520 - Liner Damage of Foreign Objects
- 5530 - Blister
- 5540 - Bladder Mark
- 5550 - Bladder Crease
- 5570 - Heavy Inner Splice
- 5580 - Hair Cracking
### INNER CONDITIONS

<table>
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<tr>
<th>TBR/PCR/LTR</th>
<th>INNER LINER UNDULATION (ROUGHNESS INNER LINER)</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5500</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Depression or elevation in the surface of the tire interior.

**Photo:**

![Image of tire interior](image-url)

**Possible Causes:**
- Rubber of inner liner clinging to surface of curing bladder during curing.
- Bad curing bladder conditions such as pinhole, splits, which allow curing agent into inner liner during curing.
- Too thin or short inner liner and ply coating rubber gauges.

**Recommendation:** Please contact local GITI Technical Service for further inspection.

---

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<tr>
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<th>CONDITIONS</th>
<th>CODES</th>
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</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR</td>
<td>Cord Shadow / Thin IL Gauge</td>
<td>5510</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Radial ply cords impression may be visible through the inner liner locally or circumferentially. Frequently found in new tire.

**Photo:**

![Image of Radial Ply Cords Impression]

**Possible Causes:**
- Too thin gauge or pulled inner liner during the manufacturing process.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.
## INNER CONDITIONS

<table>
<thead>
<tr>
<th>TBR/LTR/BIAS</th>
<th>Liner Damage of Foreign Objects</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5520</td>
<td></td>
<td>Rejected</td>
</tr>
</tbody>
</table>

### Description:

Obvious worn area shown in the surface of inner liner.

### Photo:

![Image of inner liner damage](image_url)

### Possible Causes:

- Foreign materials remained between tube and tire.
- Improper coating talcum powder in the surface of the inner liner.
- Improper inflation pressure.

### Recommendation:

- Check and review tire mounting and demounting process.
- Check and maintain tire inflation pressure with a quality air gauge periodically.

---

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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blister</td>
<td>5530</td>
<td></td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Air concealed at inner.

**Photo:**

**Possible Causes:**
- Manufacturing defects resulting from such volatile materials as air, moisture, gasoline, chemical agent, etc. trapped in semi-product.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.

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</thead>
<tbody>
<tr>
<td></td>
<td>Bladder Mark</td>
<td>5540</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Surface of inner liner exhibit partially uneven.

**Photo:**

**Possible Causes:**
- Manufacturing defect caused by dirty or rough surface curing bladder.

**Recommendation:**
- Please contact local Giti Technical Service for further inspection.
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<thead>
<tr>
<th>INNER CODES AND CONDITIONS - INNER</th>
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</thead>
<tbody>
<tr>
<td><strong>TBR/PCR/LTR/BIAS</strong></td>
</tr>
</tbody>
</table>

**Description:** Surface of inner liner exhibit wedge-shaped projection.

**Photo:**

![Bladder Crease Image]

**Possible Causes:**
- Manufacturing defect caused by over size curing bladder (Improper size/ over aged).

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.
<table>
<thead>
<tr>
<th>INNER</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
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</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Heavy Inner Splice</td>
<td>5570</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Big splice appear at the inner part which very obvious and easy to observed.

**Possible Causes:**
- Manufacturing defects caused by poor workmanship while building process. (Overlapped inner splice)

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.

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<tr>
<td><strong>INNER</strong></td>
</tr>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
</tr>
</tbody>
</table>

**Description:** Hairline cracks found in inner liner surface.

**Photo:**

**Possible Causes:**
- Manufacturing defect caused by aged curing bladder with cracking.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.

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<tbody>
<tr>
<td>INNER</td>
<td>Broken Ply Cords (BIAS)</td>
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- **5600 - Broken Ply Cords (BIAS)**
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- **5610 - Broken Ply Cords (BIAS)**
  - Around Shoulder

- **5620 - Broken Ply Cords (BIAS)**
  - Around Bead Area
### INNER CODES

**BIAS**

**Description:** Broken cords in large proportions exhibit around interior shoulder area or around exterior bead area. Burned cords also can be seen in most cases.

**Possible Causes:**
- Fatigue failures resulting from overloading, under inflation, unmatched rim size, and or bad rim conditions, such as distorted/damaged rim.

**Recommendation:**
- Avoid overloading.
- Always use approved quality rim and keep it in good condition.
- Check and maintain tire inflation pressure with a quality air gauge periodically.

---

**Photo:**
- Broken Ply Cords around shoulder inside
- Broken Ply Cords around bead area

---

**Codes and Conditions - INNER**

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<td>BIAS</td>
<td>Broken Ply Cords (BIAS)</td>
<td>5600</td>
<td>Rejected</td>
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### INNER CODES

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<tbody>
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<td>BIAS</td>
<td>Broken Ply Cords Around Shoulder Inside (BIAS)</td>
<td>5610</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

#### Description:
Broken ply cords in large proportions exhibit around interior shoulder area, visible burned cords in most cases.

#### Photo:
![Broken Ply Cords around shoulder inside](image)

#### Possible Causes:
- Fatigue failures resulting from overloading, under inflation, unmatched rim size.

#### Recommendation:
- Avoid overloading.
- Always use approved quality rim and keep it in good condition.
- Check and maintain tire inflation pressure with a quality air gauge periodically.

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<tbody>
<tr>
<td>BIAS</td>
<td>Broken Ply Cords Around Bead Area Outside (BIAS)</td>
<td>5620</td>
<td>Rejected</td>
</tr>
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</table>

**Description:** Broken ply cords in large proportions exhibit around exterior bead area.

**Possible Causes:**
- Fatigue failures resulting from overloading, under inflation, unmatched rim size, and or bad rim conditions, such as distorted/damaged rim.

**Recommendation:**
- Avoid overloading.
- Always use approved quality rim and keep it in good condition.
- Check and maintain tire inflation pressure with a quality air gauge periodically.

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<tr>
<td>INNER</td>
<td>Open Inner Liner Splice (Joint Sepa.)</td>
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5800 - Open Inner Liner Splice (Joint Sepa.)

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<td>Open Inner Liner Splice (Joint Sepa.)</td>
<td>5800</td>
<td>Accepted</td>
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</table>

**Description:** Split at the splice of the inner liner material, which may be located next to a dark band in the liner.

**Possible Causes:**
- Manufacturing defects resulting from loss adhesion at the splice.
- Also can be aggravated by under inflation and/or overloading.

**Recommendation:** Please contact local GITI Technical Service for further inspection.
**INNER AREA CONDITIONS CODES**

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<th>CONDITIONS</th>
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<tbody>
<tr>
<td>INNER</td>
<td>Poor Inner Appearance</td>
<td>5910 - 5940</td>
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- 5900 - Poor Inner Appearance
  - 5910 - Foreign Material
  - 5920 - Rubber Starved
  - 5940 - Contamination

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## INNER CONDITIONS

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<th>TBR/PCR/LTR/BIAS</th>
<th>Poor Inner Appearance</th>
<th>CODES</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5900</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

### Description:
Poor appearance on tire inner.

### Photo:
![Photo of tire inner with poor appearance]

### Possible Causes:
- Manufacturing defects resulting from dirty mold, dirty semi-product.
- Poor storage management.

### Recommendation:
Please contact local GITI Technical Service for further inspection.
<table>
<thead>
<tr>
<th>INNER CODES AND CONDITIONS - INNER</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
</tr>
</tbody>
</table>

**Description:** Foreign Material is any non-rubber material, other than the intended compound, that is cured into the inner. It may appear as a raised spot on the surface containing foreign material covered by surface rubber.

**Photo:**

![Image of Foreign Material](image_url)

**Possible Causes:**
- Manufacturing defects resulted from remaining foreign material in semi-product or curing bladder during manufacturing process.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.

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### Description:
Localized lack of rubber shown on the surface of inner of a tire.

### Possible Causes:
- Manufacturing defects caused by remaining water, oil, grease, etc in mould or green tire.
- Water leakage of curing bladder.

### Recommendation:
- Please contact local Giti Technical Service for further inspection.

---

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<tr>
<th>INNER CODES AND CONDITIONS - INNER</th>
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<tbody>
<tr>
<td><strong>TBR/PCR/LTR/BIAS</strong></td>
</tr>
<tr>
<td>Contamination</td>
</tr>
</tbody>
</table>

**Description:** Unclean inner liner surface in a tire.

**Photo:**

**Possible Causes:** • Manufacturing defects resulting from dirty mold, dirty semi-product.

**Recommendation:** • Please contact local GITI Technical Service for further inspection.

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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Reported Condition Not Found</td>
<td>5998</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Reported condition can not be found or no any damages presented in inner area of a given tire.

**Photo:** None

**Possible Causes:** • None

**Recommendation:** • None

---

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**INNER CODES**

**TBR/PCR/LTR/BIAS**

**CONDITIONS**

**DESCRIPTION:**

Any inner conditions not listed or coded.

**POSSIBLE CAUSES:**

• None

**RECOMMENDATION:**

• Please contact local GITI Technical Service for further inspection.

**JUDGEMENT**

**CODES**

5999

**JUDGEMENT**

Rejected & Accepted

---

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<td>GENERAL</td>
</tr>
<tr>
<td>GENERAL FAILURES</td>
</tr>
<tr>
<td>PAGE 266 - PAGE 295</td>
</tr>
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</table>

### 6XXX - General Failures

- 6100 - Uniformity Issues
- 6200 - Damage Caused by Petroleum/Chemicals
- 6300 - Dynamometer Damage
- 6400 - Ride Complaint
- 6600 - Other Claims
- 6700 - Road Hazard (US only)
<table>
<thead>
<tr>
<th>AREA</th>
<th>CONDITIONS</th>
<th>CODES</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL</td>
<td>Uniformity Issues</td>
<td>6110 - 6130</td>
</tr>
</tbody>
</table>

**6100 - Uniformity Issues**
- 6110 - Out of Balance
- 6120 - Radial Run Out
- 6130 - Lateral Run Out

Back to Menu
### Uniformity Issues Rejected & Accepted

<table>
<thead>
<tr>
<th>GENERAL</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR</td>
<td>Uniformity Issues</td>
<td>6100</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:** Tire is not uniformity like excessive balancing, out of round, run-out.

**Possible Causes:**
- Tire non-uniformity resulting from the distribution of tire mass is not uniform.
- Rim/wheel non-uniformity, improper bead seating.

**Recommendation:**
- Minimizing tolerances in manufacturing process.
- Static balance can be achieved with a static bubble balancer.
- Dynamic balance can be achieved with a dynamic balancer.
- Use a quality rim/wheel and follow up the proper tire/rim assembly procedure.

---

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<table>
<thead>
<tr>
<th>Description:</th>
<th>Vertical or lateral movement (wobble or shimmy) resulting from heavy or light spots in a tire.</th>
</tr>
</thead>
</table>
| Possible Causes: | • The distribution of tire mass is not uniform.  
• Rim/wheel non-uniformity, improper bead seating. |
| Recommendation: | • Minimizing tolerances in manufacturing process.  
• Static balance can be achieved with a static bubble balancer.  
• Dynamic balance can be achieved with a dynamic balancer. |

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**Description:** An "out of round" situation where vibrations are produced as the wheel spindle moves up and down.

**Possible Causes:**
- Tire non-uniformity resulting from the distribution of tire mass is not uniform.
- Rim/wheel non-uniformity, improper bead seating.

**Recommendation:**
- Minimizing tolerances in manufacturing process.
- Use a quality rim/wheel and follow up the proper tire/rim assembly procedure.

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<table>
<thead>
<tr>
<th>TBR/PCR/LTR</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lateral Run Out</td>
<td>6130</td>
<td>Rejected &amp; Accepted</td>
<td></td>
</tr>
</tbody>
</table>

**Description:** A side to side or wobbling movement of tire and wheel, it is less common than radial run-out.

**Photo:**

**Possible Causes:**
- Tire non-uniformity resulting from the distribution of tire mass is not uniform.
- Rim/wheel non-uniformity, improper bead seating.

**Recommendation:**
- Minimizing tolerances in manufacturing process.
- Use a quality rim/wheel and follow up the proper tire/rim assembly procedure.
<table>
<thead>
<tr>
<th>General Codes</th>
<th>Description</th>
<th>Conditions</th>
<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS Damage Caused by Petroleum / Chemicals</td>
<td>Localized spot of blistered, pony or deteriorated rubber in tire.</td>
<td></td>
<td>6200</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Possible Causes:**
- In contact with chemicals, which attack to erode tire rubber.

**Recommendation:**
- Identify and eliminate source of contamination.
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>Conditions</th>
<th>Code</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dynamometer Damage</td>
<td>6300</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

### Description:
Swollen, spongy area hidden inside the center rib/lug extending up 360° around the tire, may surface as a local cavity.

### Possible Causes:
- Extensive heat build up on a dynamometer.

### Recommendation:
- Review relevant operation.

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<th>CODES</th>
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</thead>
<tbody>
<tr>
<td>GENERAL</td>
<td>Ride Complaint</td>
<td>6410 - 6480</td>
</tr>
</tbody>
</table>

#### 6400 - Ride Complaint

- 6410 - Vehicle Pulling
- 6420 - Excessive Noise
- 6430 - Vibration
- 6440 - Poor Wet Traction
- 6480 - Flat Spot

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## GENERAL CODES

### TBR/PCR/LTR

<table>
<thead>
<tr>
<th>Description</th>
<th>Possible Causes</th>
<th>Recommendation</th>
</tr>
</thead>
</table>
| Abnormal vibration, excessive noise, vehicle pulling, poor wet traction can be noticed or felt when driving on the road. | • Unbalanced tire/wheel assembly.  
• Vehicle mechanical problem.  
• Wrong application of tire. | • Use a quality rim/wheel and follow up the proper tire/rim assembly procedure.  
• Regular check and maintain vehicle mechanical system.  
• Select tire with regard to actual application conditions. |
### TBR/PCR/LTR 6410

**Description:** The vehicle deviating from its original direction to one side, driver has to constantly adjust the steer to keep its direction.

**Possible Causes:**
- Vehicle mechanical problem.
- Rim/wheel non-uniformity, improper bead seating.
- Unmatched inflation pressure applied on the tires on the same axle.
- Aggravated by road condition like road crown, wet road, etc.

**Recommendation:**
- Use a quality rim/wheel and follow up the proper tire/rim assembly procedure.
- Regular check and maintain vehicle mechanical system.

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<table>
<thead>
<tr>
<th>TBR/PCR/LTR</th>
<th>Conditions</th>
<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Excessive Noise</td>
<td>6420</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:**
Abnormal or excessive noise can be noticed during driving on the road.

**Photo:**
[Image showing noise in a tire]

**Possible Causes:**
- Unbalanced tire/wheel assembly.
- Vehicle mechanical problem.
- Wrong application of tire.

**Recommendation:**
- Use a quality rim/wheel and follow up the proper tire/rim assembly procedure.
- Regular check and maintain vehicle mechanical system.
- Select proper tire with regard to actual application conditions.

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<th>Vibration</th>
<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>6430</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:**
Abnormal vibration from wheel can be noticed during driving on the road with ride disturbance.

**Photo:**
![Image of a wheel with vibrations]

**Possible Causes:**
- Vehicle mechanical problem.
- Wrong application of tire.
- Unbalanced tire/wheel assembly.

**Recommendation:**
- Use a quality rim/wheel and follow up the proper tire/rim assembly procedure.
- Regular check and maintain vehicle mechanical system.
- Select proper tire with regard to actual application conditions.
### GENERAL

<table>
<thead>
<tr>
<th>TBR/PCR/LTR</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor Wet Traction</td>
<td>6440</td>
<td>Rejected &amp; Accepted</td>
<td></td>
</tr>
</tbody>
</table>

### Description:
Vehicle is not easy controlled or slip over wet surfaces.

### Possible Causes:
- Pattern worn out too much.
- Over aged tire.
- Incorrect tire pressure.

### Recommendation:
- Low speeding and careful driving under severe wet condition.
- Regularly inspect remain tread depth and tire condition.
- Check and maintain tire inflation pressure with a quality air gauge periodically.
### TBR/PCR/LTR 6480

**Description:** An area of the tire that is flattened instead of round due to no service for a long period of time.

**Possible Causes:**
- Long-term concentration of stress on the portion of tire in contact with the ground without service, especially occur in winter season or cold region.

**Recommendation:**
- Taking the weight of vehicle off and increasing tire pressure will increase the life of the tire and prevent flat spotting for long-term tire storage or storage of seasonal use vehicles.
- Flat spots usually disappear when the tire warms up after a certain miles drive.

---

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## Codes and Conditions - General

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<th>General</th>
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</thead>
<tbody>
<tr>
<td>6600</td>
<td>Other Claims</td>
<td>6610 - 6690</td>
</tr>
</tbody>
</table>

- **6600 - Other Claims**
  - **6610 - Repaired, Retread, Reclaimed**
  - **6620 - Beyond the Warranty Period**
  - **6630 - Improper Repair or Repair Failure**
  - **6640 - Regrooving Outside Limits**
  - **6660 - RTD Below Warranty Limits**
  - **6670 - Sidewall Irregular**
  - **6680 - Picture(s) Not Available**
  - **6690 - Tire Unavailable For Inspection**
### General Code: TBR/PCR/LTR/BIAS - 6600

**Description:**
Other type of claims.

**Photo:**
None

**Possible Causes:**
- None

**Recommendation:**
- None

---

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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repaired, Retread, Reclaimed</td>
<td>6610</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

**Description:** Any repaired, retread, reclaimed tires will be rejected for claim application.

**Photo:**

![Photo of a tire with markings]

**Possible Causes:** • None

**Recommendation:** • None
## GENERAL CODES

**TBR/PCR/LTR/BIAS**

### CONDITIONS

<table>
<thead>
<tr>
<th>Description:</th>
<th>The tire is beyond the warranty period. Warranty policy may differ from tire type to tire type county by county.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photo:</td>
<td>![Tire Image]</td>
</tr>
</tbody>
</table>

### POSSIBLE CAUSES

- None

### RECOMMENDATION

- None
<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improper Repair or Repair Failure</td>
<td>6630</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

**Description:** Any tire failures resulting from improper repair procedures and techniques.

**Possible Causes:** • Improper repair procedures and techniques.

**Recommendation:** • Always follow up the proper tire repair procedures and techniques by using proper...
### Codes and Conditions - General

<table>
<thead>
<tr>
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<th>Conditions</th>
<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regrooving Outside Limits</td>
<td>6640</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

#### Description:
Exposed belts at the base of regroove resulting from too deep regrooving.

#### Photo:
[Images of regrooving examples]

#### Possible Causes:
- Regrooving too deep.

#### Recommendation:
- Always follow up the proper tread regrooving procedures and techniques.
<table>
<thead>
<tr>
<th>GENERAL</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Mileage Warranty Claim</td>
<td>6650</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:** Refer to our local warranty policy.

**Photo:** None

**Possible Causes:** • None

**Recommendation:** • None

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## Codes and Conditions - General

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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTD Below Warranty Limits</td>
<td>6660</td>
<td>Rejected</td>
<td></td>
</tr>
</tbody>
</table>

**Description:** Remaining tread depth of the tire is beyond warranty limitation.

**Photo:** None

**Possible Causes:**  • None

**Recommendation:**  • None

---

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**GENERAL CODES**

**TBR/PCR/LTR/BIAS**

**Description:** Absence, incomplete or wrong markings of information on tire sidewall, example: 3c certification, DOT number, TBR barcode or speed indicator etc.

**Photo:** None

**Possible Causes:** • Manufacturing defect caused by incorrect information on curing mould.

**Recommendation:** • Please contact local GITI Technical Service for further inspection.

**Conditions Judgement**

<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>Sidewall Irregular / Wrong Marking Info.</th>
<th>Codes</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>6670</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>TBR/PCR/LTR/BIAS</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture(s) Not Available</td>
<td>6680</td>
<td></td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Absent of defect tire picture for claim application or tire condition cannot be clearly shown in pictures.

**Photo:** None

**Possible Causes:** • None

**Recommendation:** • None

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<table>
<thead>
<tr>
<th>GENERAL</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Tire Not Available for Inspection</td>
<td>6690</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:**  
The defective tire is not available, unable to perform further inspection.

**Photo:**  
None

**Possible Causes:**  
• None

**Recommendation:**  
• None
## TBR/PCR/LTR/BIAS 6700

### Description:
Faulty tires caused by severe operation condition such as poor road condition, curb stone, pothole, sharp objects, aggressive driving behaviors.

### Possible Causes:
- Road hazard, curbing, wash rack rails, pit rails, vandalism, etc
- Poor road conditions
- Misapplication of the tire to service condition.
- Aggressive driving style.

### Recommendation:
- Drive carefully, e.g. steer clear of road hazard, pothole, curbs, etc.
- Timely inspect tire for any wounds and get it repaired.
- Correct application of the tire.

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**Description:** Impossible or difficult to fix tire on rim.

**Possible Causes:**
- Improper mounting and lack of lubrication.
- Bead to bead distance too wide.
- Unmatched rim size.

**Recommendation:**
- Always follow up the proper tire mounting procedure and proper lubricating.
- Always use approved tire and rim combinations for diameters and contours.
### Description:
Require irregular high inflation pressure to seat the bead on the rim.

### Possible Causes:
- Improper mounting and lack of lubrication,
- Bead to bead distance too narrow.
- Out of tolerance of rim curve dimension.
- Unmatched rim size.

### Recommendation:
- Do not exceed the maximum inflation pressure shown on the sidewall of the tire.
- Always follow up the proper tire mounting procedure and proper lubricating.
- Always use approved tire and rim combinations for diameters and contours.

---

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<table>
<thead>
<tr>
<th>GENERAL</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBR/PCR/LTR/BIAS</td>
<td>Inflation Difficult</td>
<td>6920</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>
## Tire Deformation Rejected

### Description:
Tire is deformed partially or fully in container, in rack or in any other conveyor.

### Possible Causes:
- Improper storage, shipment or transport operation.

### Recommendation:
- Check and review storage, shipping/transport operation process.
TXXX - Tube Failures

- T001 - Foreign Material
- T002 - Under Curing
- T003 - Blister
- T004 - Tube Undulation
- T005 - Pinhole
- T006 - Rubber Starved
- T007 - Valve Stem Splits
- T008 - Ozone Cracks
- T009 - Transport Damage
- T010 - Cut
- T011 - Cracks in Rubber Base of Valve
- T012 - Repaired Tube
- T013 - Tube Run Flat
- T015 - Air Leakage Not Identified
- T021 - Cracks in Rubber Base - Separation
- T022 - Cracks in Rubber Base - Tearing
- T023 - Crease in Rubber Base of Valve
- T024 - Flow Cracks in Tube Splice
- T800 - Open Tube Splice
- T999 - Conditions Not Identified
### Code: T001

**Description:**
Foreign Material is any non-rubber material, other than the intended compound, that is cured into the tube rubber. It may appear as a raised spot on the surface containing foreign material covered by surface rubber.

| Photo: | ![Image of Foreign Material](image.jpg) |

**Possible Causes:**
- Foreign materials trapped in the raw material.
- Dirty mold.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.

---

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<table>
<thead>
<tr>
<th>CODES</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
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<tbody>
<tr>
<td>T002</td>
<td>Under Curing</td>
<td>T002</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:**
A spot or localized area exhibits under-cured or not cured in tube surface.

**Possible Causes:**
- Manufacture defects resulting from curing parameter out of tolerances. (improper curing time, curing temperature, and curing pressure)
- Moisture trapped in mold and/or dirty mold.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.
### Codes and Conditions - Tube

<table>
<thead>
<tr>
<th>Code</th>
<th>Condition</th>
<th>Code</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>T003</td>
<td>Blister</td>
<td>T003</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:**
Internal voids, usually near the surface of the tube. They are usually characterized by a hollow bump on the tube surface.

**Photo:**
![Blister](image)

**Possible Causes:**
- Manufacturing defects resulting from such volatile materials as air, moisture, gasoline, chemical agent, etc. trapped in semi-product.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.
## Tube Undulation

### Description:
Uneven tube sections, with visual distinction or out-of-round under inflated.

### Possible Causes:
- Abnormal flow behavior of rubber compounds during tube curing.
- Semi-products gauge out of tolerance.

### Recommendation:
- Please contact local GITI Technical Service for further inspection.

### Table

<table>
<thead>
<tr>
<th>Tube</th>
<th>Conditions</th>
<th>Codes</th>
<th>Judgement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tube</td>
<td>Undulation</td>
<td>T004</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

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### CODES AND CONDITIONS - TUBE

<table>
<thead>
<tr>
<th>TUBE</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUBE</td>
<td>Pinhole</td>
<td>T005</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Tiny pinhole can be found in tube surface.

**Photo:**

![Image of a tube with a pinhole highlighted](image)

**Possible Causes:**
- Contamination in raw rubber or semi-finished products.
- Dirty mold.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.

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### Tube Conditions - Rubber Starved

<table>
<thead>
<tr>
<th>Description</th>
<th>Localized area on tube in lack of rubber.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photo</td>
<td>![Image of tube condition]</td>
</tr>
</tbody>
</table>
| Possible Causes      | • Rubber did not completely fill out due to dirty mold.  
                        • Poor curing technique. |
| Recommendation       | • Please contact local GITI Technical Service for further inspection. |

**JUDGEMENT**: Accepted

**Codes**: T006

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<table>
<thead>
<tr>
<th>CODES AND CONDITIONS - TUBE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TUBE</strong></td>
</tr>
<tr>
<td>TUBE</td>
</tr>
</tbody>
</table>

**Description:** Broken or cracks at the crook of the valve stem.

**Photo:**

---

**Possible Causes:**
- Rough operation during tube/carcass assembly.
- Improper handling.

**Recommendation:**
- Follow up proper tube/carcass assembly procedure.
<table>
<thead>
<tr>
<th>CODES</th>
<th>CONDITIONS</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>T008</td>
<td>Ozone Cracks</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Numerous tiny cracks exhibit on the tube surface, usually 360° around the tube.

**Possible Causes:**
- Exposure to direct sunlight or high concentrations of ozone generated by many sources, such as electric generator.

**Recommendation:**
- Keep tubes storage away from sunlight and/or any ozone generator.
- For long-term storage, please keep the tube in box.
<table>
<thead>
<tr>
<th>TUBE</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUBE</td>
<td>Transport Damage</td>
<td>T009</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Any damages occurring during tube transport, such as cuts, punctures, etc.

**Photo:**

**Possible Causes:**
- Improper shipment or transport operation.

**Recommendation:**
- Check and review shipping/transport operation process.
<table>
<thead>
<tr>
<th>TUBE</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUBE</td>
<td>Cut</td>
<td>T010</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Splits, cuts, snags, punctures, etc. in tube by sharp objects.

**Photo:**

![Image of a tube with cuts by sharp objects]

**Possible Causes:**
- Cuts by external sharp objects.
- Rough operation during tube/carcass assembly.
- Improper handling.

**Recommendation:**
- Follow up proper tube/carcass assembly procedure.
<table>
<thead>
<tr>
<th>TUBE</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUBE</td>
<td>Repaired Tube</td>
<td>T012</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Evidence of repair shown in the tube.

**Possible Causes:** • The tubes was repaired against air leak.

**Recommendation:** • Drive carefully to avoid any obstacles on road.

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**CODES AND CONDITIONS - TUBE**

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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUBE</td>
<td>Tube Run Flat</td>
<td>T013</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:** Tube blown out and/or torn to pieces.

**Possible Causes:** • Continued operation after loss of tire inflation pressure.

**Recommendation:** • Always check tires for any damage.
• Check and maintain tire inflation pressure with a quality air gauge periodically.

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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUBE</td>
<td>Air Leakage Not Identified</td>
<td>T015</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:** Air leaked from tube reported by customer, but unable to verify and confirm any air leakage in site by field service engineer due to some certain reason.

**Possible Causes:**
- Small puncture.
- Any damage resulting from improper tube assembly.
- Manufacturing defects.

**Recommendation:** Please contact local GITI Technical Service for further inspection.

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<table>
<thead>
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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUBE</td>
<td>Cracks in Rubber Base - Separation</td>
<td>T021</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:**
Cracks or splits exhibit partially of circumferentially at the rubber base of a valve. The open joint surface is shown very smooth with evidence of poor adhesion.

**Possible Causes:**
- Related to Mfg defects from improper workmanship.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.
CODES AND CONDITIONS - TUBE

<table>
<thead>
<tr>
<th>TUBE</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUBE</td>
<td>Cracks in Rubber Base - Tearing</td>
<td>T022</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Description:**
Cracking or tearing rubber exhibit partially of circumferentially at the rubber base of a valve. The joint surface shown very rough with evidences of mechanical damages.

**Photo:**
![Image of a tire with cracks and tearing]

**Possible Causes:**
- Improper operation during tube/carcass assembly.
- Aggravated by improper inflation pressure, overloading, large shear force impact, excessive speeds, etc.

**Recommendation:**
- Follow up proper tube/carcass assembly procedure.
- Avoid overloading and/or long-term continuous driving.
- Avoid excessive speeds / Do not exceed tire speed rating.
- Drive carefully, e.g. steer clear of snags, avoid sharp cornering.
### CODES AND CONDITIONS - TUBE

<table>
<thead>
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<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUBE</td>
<td>Open Tube Splice</td>
<td>T800</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Open splice and or tube distortion in splice area.

**Photo:**
![Image of tube splice area with annotations]

**Possible Causes:**
- Too short or too long tube gauge, or contaminated tube joints.
- Misaligned joints when making splice.

**Recommendation:** Please contact local GITI Technical Service for further inspection.

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<table>
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<tr>
<th>AREA</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUBE</td>
<td>Condition Not Identified</td>
<td>T999</td>
<td>Rejected &amp; Accepted</td>
</tr>
</tbody>
</table>

**Description:** Any tube conditions not listed or coded.

**Photo:** None

**Possible Causes:** • None

**Recommendation:** • Please contact local GITI Technical Service for further inspection.

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FXXX - Flap Failures

- F001 - Foreign Material
- F002 - Under Curing
- F003 - Blister
- F004 - Flap Undulation
- F006 - Rubber Starved
- F009 - Cut
- F010 - Flap Tear
- F012 - Flap Run Flat
- F999 - Condition Not Identified

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</thead>
<tbody>
<tr>
<td><strong>FLAP</strong></td>
</tr>
<tr>
<td>FLAP</td>
</tr>
</tbody>
</table>

**Description:**
Foreign Material is any non-rubber material, other than the intended compound, that is cured into the flap rubber. It may appear as a raised spot on the surface containing foreign material covered by surface rubber.

**Photo:**

**Possible Causes:**
- Foreign materials trapped in the raw material or semi-products.
- Dirty mold.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.
<table>
<thead>
<tr>
<th>FLAP</th>
<th>CONDITIONS</th>
<th>CODES</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAP</td>
<td>Under Curing</td>
<td>F002</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** A spot or localized area exhibits under-cured or not cured in flap surface.

**Possible Causes:**
- Foreign materials trapped in the raw material.
- Dirty mold.

**Recommendation:** Please contact local GITI Technical Service for further inspection.
<table>
<thead>
<tr>
<th>CODES</th>
<th>CONDITIONS</th>
<th>FLAP</th>
<th>JUDGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>F003</td>
<td>Blister</td>
<td></td>
<td>Accepted</td>
</tr>
</tbody>
</table>

**Description:** Internal voids, usually near the surface of the flap. They are usually characterized by a hollow bump on the flap surface.

**Possible Causes:**
- Manufacturing defects resulting from such volatile materials as air, moisture, gasoline, chemical agent, etc. trapped in semi-product.

**Recommendation:**
- Please contact local GITI Technical Service for further inspection.
### FLAP - Flap Undulation

<table>
<thead>
<tr>
<th>Description</th>
<th>Uneven thickness of flap.</th>
</tr>
</thead>
</table>
| Possible Causes    | • Abnormal flow behavior of rubber compounds during tube curing.  
                     • Semi-products gauge out of tolerance. |
| Recommendation     | • Please contact local GITI Technical Service for further inspection. |