PRODUCT FAILURE ANALYSIS
TIRES AND WHEELS

Issue date: September 1, 2015 V8
## PRODUCT FAILURE CODES

### A: General Mounting Difficulties
- A01: General Mounting Difficulties 3
- A03: Steelband Size Too Big 4
- A04: Steelband size Too Small 5
- A05: Steelband Oval 6
- A06: Broken Weld STB or Beads 7

### B: General Cosmetic Complaints
- B: General Cosmetic Complaints 8
- B01: Paint (Colour, Gloss…) 9
- B02: Paint Peeling Off 10
- B03: Weld of Rim/Wheel/Nave Plate 11
- B04: Deburring (Sharp Edges) 12
- B05: Stamped Markings 13

### C: Heel and Base Failures
- C01: Spinning on Rim 14
- C02: Bonding to Steel Failure 15
- C04: Beads Braking Out 16
- C05: Exc. Wear of Base ab. Rim Hooks 17
- C06: Radial Cracks Starting in Base 18
- C07: Broken Heel 19
- C08: Bonding Failure Base Middle Layer 20
- C10: Broken or Worn Out Nose 21
- C11: Delamination in Heel 22

### D: Middle Layer Located Problems
- D01: Circumferential Crack 23
- D02: Sidewall Damage 24
- D03: Broken Middle Layer 25
- D04: Radial Cracks 26
- D05: Permanent Deformation 27
- D06: Bonding Failure Middle Layer 28
- D07: Air Bubble at Inside Casings 29
- D08: Layers of Casing Apart 30
- D09: Lamination in Centre (Precure) 31
- D10: Tirecord Comming Out 32
- D11: Air Leakage 33
- D12: Thermal Explosion Middle Layer 34

### E: Tread related failures
- E01: Impact Damage Resilient Tires 35
- E01: Impact Damage Pneumatic Tires 36
- E02: Chunking 37
- E03: Lug Cracking or Breaking Out 38
- E04: Uneven Worn Lugs 39
- E05: Tapered Wear 40
- E06: Abnormal Fast Wear 41
- E07: Peeling off in Sheets 42
- E08: Out of Round 43
- E09: Soft or Discoloured Spot (Blister) 44
- E10: Flash Cracking 45
- E11: Radial Cracks 46
- E13: Flakey Tread 47
- E14: Tread Delamination 48

### F: On a Commercial Base 50

### H: Other 51
- H01: Offset 52
- H02: Rim Width 53
- H03: Rim Diameter 54
- H04: Pilot Diameter 55
- H05: Nave Thickness 56
- H06: Hole PCD 57
- H07: Hole Diameter 58
- H08: Countersink Diameter 59
- H09: Skimming Diameter 60
- H10: Type of Chamfer (Con/Sph) 61
- H11: Paint Thickness 62
- H12: Ouality 63
- H14: Eccentricity of Hole to Pilot 64
- H15: Eccentricity Pilot PCD to Rim 65

### I: Measurements 66
- I01: Offset 67
- I02: Rim Width 68
- I03: Rim Diameter 69
- I04: Pilot Diameter 70
- I05: Nave Thickness 71
- I06: Hole PCD 72
- I07: Hole Diameter 73
- I08: Countersink Diameter 74
- I09: Skimming Diameter 75
- I10: Type of Chamfer (Con/Sph) 76
- I11: Paint Thickness 77
- I12: Ouality 78
- I14: Eccentricity of Hole to Pilot 79
- I15: Eccentricity Pilot PCD to Rim 80

### Z: Other charges 81

### Not claimable 82
- Environmental Conditions 83
- Marking the Floor 84
- Flat Spotting 85
# A01: GENERAL MOUNTING DIFFICULTIES

Always to be checked before mounting a tire on a wheel

<table>
<thead>
<tr>
<th>Difficulties</th>
<th>[\text{Details}^\text{1}]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrong rim size</td>
<td>Rim size MUST be appropriate for tire size</td>
</tr>
<tr>
<td>Rim sizes not according to norms</td>
<td>Only rims with approved contour to be used</td>
</tr>
<tr>
<td>Rim damaged / out of shape / Lock/side rings / adv. band out of shape</td>
<td>Only use undamaged / not deformed rims and / or components</td>
</tr>
<tr>
<td>Lock/side rings / adv. band not compatible brand</td>
<td>Only use appropriate / compatible rings</td>
</tr>
</tbody>
</table>

## Tools and Information Needed to Guarantee a Good Mounting

<table>
<thead>
<tr>
<th>Tool/Information</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of press</td>
<td>Right tooling in good working order</td>
</tr>
<tr>
<td>Type/condition of tools</td>
<td>Right tooling in good order/condition</td>
</tr>
<tr>
<td>Mounting method</td>
<td>Proven / approved methods</td>
</tr>
<tr>
<td>Untrained operations</td>
<td>Trained people</td>
</tr>
</tbody>
</table>

---

1. \[\text{Details}\] - Details refer to the specific requirements or guidelines for each item listed in the table.
A03: STEELBAND SIZE TOO BIG

**Appearance**
No or slight marks on steelband after demounted from wheel

**Possible cause**
- Steelband too big
- Wrong tire size

**Actions**
- Check if tire size is the right size needed

**Warranty**
Yes, if the wheel size matches band size
A04: STEELBAND SIZE
TOO SMALL

Appearance
Damaged steelband

Possible cause
- Tire size to small for rim
- Steelband size to small

Actions
- Check if tire size is the correct for the wheel
- Check rim for deformation and damages

Warranty
Yes, if tire size matches wheel size, and there are no damages found
A05: STEELBAND OVAL

Appearance
Steelband Oval

Possible cause
- Tire dropped on floor

Actions
- Handle PON with care, avoid damage during transport

Warranty
None
A06: BROKEN STEEL BAND (STB) OR BEADS

Appearance
Cracks in Steelband or Beads

Possible cause
- Steelband too small
- Bad mounting
- Rim deformed/damaged
- Rim too big

Actions
- Check wheel(size, damages, deformation)

Warranty
Yes, if the defect is not caused by the wheel or mounting
B: GENERAL COSMETIC COMPLAINTS

**Appearance**
Poor aspect of the delivered tyre, superficial damages, ...

**Possible cause**
- Poor manipulation at production, improper handling at loading / unloading, ...

**Actions**
- None

**Warranty**
Depending on the origin of the aspect defect

**Comment**
The performance and lifetime of the product will not be affected
B01: PAINT (COLOUR, GLOSS…)

Appearance
Inconsistent, with noticeable visual changes

Possible Cause
- Issues with paint mixing, preparation of site, or application

Actions
- None

Warranty
Condition related

Comment
The performance and lifetime of the product will not be affected
B02: PAINT PEELING OFF

Appearance
Paint visually coming off of the item

Possible Cause
- Issues with paint mixing, preparation of site, or application

Comment
The performance and lifetime of the product will not be affected
B03: WELD OF RIM/WHEEL/NAVE PLATE

Appearance
Weld inconsistent, not finished, gaps or burn through

Possible Cause
- Operator or equipment malfunction

Warranty
Yes, if found to be from a manufacturing issue, and not impact or damage

Comment
Remove affected wheel from service
B04: DEBURRING (SHARP EDGES)

Appearance
Burrs appear after rough cutting of metal, and are jagged and sharp

Possible Cause
- Human error, deburring function not performed

Warranty
Possibly, depending on the aspect of the issue

Comment
In most instances, this can be corrected easily with a buffing tool
B05: STAMPED MARKINGS

Appearance
Stamped markings are; incorrect for the product, not legible or missing completely.

Possible Cause
- Operator or equipment not functioning properly

Warranty
OE products are the only consideration

Comment
Will not affect the performance or lifetime of the product
C: HEEL AND BASE FAILURES

C01: SPINNING ON RIM

**Appearance**
Damaged band / bead or heel

**Possible Cause**
- Tire slippage occurs when the tire moves on the wheel
- Can occur during braking or while running (jack rabbit starts/hot shifting)
- Slippage can be detected by marking the tire and rim at the same spot with chalk or paint
- Safety issue due to decreased braking ability of the truck
- When slippage occurs the tire must be removed, and it is possible that new wheels need to be mounted as well
- In all cases of tire/rim slippage, the tire must be demounted to analyze the causes

**Actions**
- Remove tires from service

**Warranty**
Yes if the spinning is a result of bad manufacturing
C02: BONDING TO STEEL FAILURE

Appearance
Cracks between rubber and steel band or wheel if mold on
Rubber detached from steel band or wheel

Possible cause
- Overload
- Insufficient adhesion agent
- Welding on steel band
- Contamination of bonding surface

Actions
- Fit the appropriate tire size for the specified load
- Do not weld on the steel band

Warranty
Yes if the failure is not caused by an overload, damage or other Customer modification
C04: BEADS BREAKING OUT

Appearance
Circular cracks in heel. This kind of damage is detected during the first period of tire utilization.

Possible cause
- Bad pressing, or mounting
- Bonding failure

Actions
- Use supporting ring for pressing operation, and correct mounting tools for pneumatic tires
- Avoid over pressing

Warranty
Yes if the failure is not caused by improper installation
C05: EXC. WEAR OF BASE ABOVE RIM HOOKS OR BEADS

Appearance
Cracks in heel above rim hooks

Possible cause
- Overload
- Soft rubber from middle layer in heel or bead area

Actions
- None

Warranty
Condition related, if there are no signs of overload or under inflation
C06: RADIAL CRACKS STARTING IN BASE

Appearance
Radial cracks starting in base, and widening towards tread

Possible cause
- Overload

Actions
- None

Warranty
Condition related
C07: BROKEN HEEL

Appearance
Circular cracks in heel

Possible cause
- Very intensive axial force
- Bonding failure in heel

Actions
- None

Warranty
Condition related
C08: BONDING FAILURE BASE TO MIDDLE LAYER

Appearance
Separation between heel and middle layer

Possible cause
- Insufficient adhesion

Actions
- None

Warranty
Yes
**C10: BROKEN OR WORN OUT NOSE**

**Appearance**
Nose worn out or broken

**Possible cause**
- Too high lateral force
- Nose damaged during mounting
- Overload (combined drive / steer tire)

**Actions**
- Use appropriate mounting tools, (mounting cone, mounting paste, etc…)

**Warranty**
Condition related
C11: DELAMINATION IN HEEL

Appearance
Heel drops out of tire
(smooth surfaces are visible)

Possible cause
- Bonding failure between rubber layers in heel (issues during tire building process)

Actions
- None

Warranty
Yes
## D01: CIRCOMFERENTIAL CRACK

<table>
<thead>
<tr>
<th><strong>Appearance</strong></th>
<th><img src="image" alt="Image of tire with crack" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>Crack around circumference of tire</td>
<td></td>
</tr>
</tbody>
</table>

**Possible cause**

- Short mold or mold heat dispersion problem causing flow issue

**Actions**

- None

**Warranty**

- Yes
# D02: SIDEWALL DAMAGE

## Appearance
Light to severe wear or damage of the sides of tire

## Possible cause
- The sides of the tire get damaged by the OTT. The OTT rubber is harder than the tire rubber. Result is that the sidewall of the tire gets worn
- Tire pressure too low – underinflated tires will bulge more and wear sidewalls
- Interference between wings and tire carcass, check for debris
- Bad alignment between front and rear tire, check nave plate spacing
- Bent wheel or nave plate will cause misalignment
- General damage to the sidewalls of the tire

## Actions
- Check tire pressure
- Check rim condition
- Check alignment between front and rear tire
- Check wheel offset

## Warranty
Situation related, application related damages as described above will not be covered in claim.
D03: BROKEN MIDDLE LAYER

Appearance
Middle layer damaged/broken

Possible cause
- Bad middle layer compound

Actions
- None

Warranty
Yes, if the cause is not impact damage
D04: RADIAL CRACKS STARTING IN MIDDLE LAYER

**Appearance**
Radial cracks

**Possible cause**
- Overload

**Actions**
- Check axle loads for both loaded and empty conditions
- Check if the truck has been equipped with extra weight or special attachments
- Reduce the carried load, if possible
  *Note: steer tire overload occurs when a truck is carrying loads that are significantly less than what it is rated to carry*
- Use proper tire size (larger, wider), or use a “high load” compound
- Possibility to use larger forklift?

**Warranty**
Condition related
### D05: PERMANENT DEFORMATION

<table>
<thead>
<tr>
<th>Appearance</th>
<th>A permanent abnormality in the construction of the tire</th>
</tr>
</thead>
</table>

**Possible cause**

- A lapse in manufacturing methods or materials

**Actions**

- None

**Warranty**

- Yes
D06: BONDING FAILURE MIDDLE LAYER

**Appearance**
Circular separation in the middle layer, between tread and middle layer

**Possible cause**
- Poor preparation or contamination between middle layer rolling and tread layer rolling at production

**Actions**
- None

**Warranty**
Yes
**D07: AIR BUBBLE AT INSIDE CASINGS**

**Appearance**

Bubble appearing out at sidewall

**Possible cause**

- Penetration of the inside air through the inner liner, carcass and ending at side wall
- Bonding failure between plies
- Layers of casing come apart
- Tire deflection too high due to under inflation (or over load) causing heat build up and resulting in a separation between plies
- Impact damage and air permeation at impact site

**Actions**

- Regular monitoring of inflation pressure (also check if operators are not reducing the inflation pressure to increase comfort)

**Warranty**

Yes (if not caused by under inflation, overload or impact)
## D08: LAYERS OF CASING APART

### Appearance
Casing appears to be coming apart in layers.

### Possible cause
- Precured rubber during tire building process
- Contamination between the layers
- Impact damage

### Actions
- Avoid impacts if applicable

### Warranty
Yes, if related to a manufacturing defect
D09: LAMINATION IN CENTRE (PRECURE)

Appearance
Separation between rubber layers (layers of rolled rubber visible)

Possible cause
- Precure due to too high temperature during middle layer rolling

Actions
- None

Warranty
Yes
### D10: TIRECORD COMING OUT

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Tire cord visible at inside of tire</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possible cause</strong></td>
<td></td>
</tr>
<tr>
<td>▪ Insufficient inner liner thickness</td>
<td></td>
</tr>
<tr>
<td><strong>Actions</strong></td>
<td></td>
</tr>
<tr>
<td>▪ None</td>
<td></td>
</tr>
<tr>
<td><strong>Warranty</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>
D11: AIR LEAKAGE

Appearance
Noticeable leakage either audible or visual

Possible cause
- Porous liner

Actions
- None

Warranty
Yes, if not a wheel or valve issue

Air leakage shown by, adding soapy water to the tire's sidewall
D12: THERMAL EXPLOSION MIDDLE LAYER

Appearance
Noticeable separation in the sidewall.

Possible cause
Heat build-up due to:
- Excessive speeds - WDAS
- Long distances
- Excessive loads
- Ambient/floor temperature
- Heat from brake drums

Actions
- Recommend appropriate compound
- Do not overload
- Change size
- Limits (Max: +140° - Min: -40°F)
- Use appropriate compound
- Use low heat build up compound
- Replace with alternative solid (twin mounting or PON)
- Recommend pneumatic tires

Warranty
Yes on standard and premium tires (3-stage tires):
Solideal, Magnum…

Comment
No warranty on Budget tires (2 layer tires). Budget tires are made only for low intensity applications
E: TREAD RELATED FAILURES

ACTIONS: COMPENSATION IS SITUATION RELATED
E01: IMPACT DAMAGE RESILIENT TIRES

Appearance
Cracks on tread lugs
Rubber pieces pulled out of treads

Possible cause
- Impact damage

Actions
- Customer training, customer awareness

Warranty
None
E01: IMPACT DAMAGE PNEUMATIC TIRES

Appearance
Cracks on tread surfaces
Cracks at inner layer

Possible cause
- Impact damage
  See pictures

Actions
- Customer awareness

Warranty
None
## E02: CHUNKING

### Appearance
Rubber chunks pulled out of the tread

### Possible cause
- Driving on aggressive soils
- Driving on soils contaminated with oil or chemicals
- Curing issue
- Compound mixing issue

### Actions
- None

### Warranty
Yes if manufacturing related
E03: LUG CRACKING OR BREAKING OUT

Appearance
Pieces of lugs breaking and or cracking at the basis

Possible cause
- Application related (hitting a foreign object)

Actions
- Operator awareness

Warranty
None
E04: UNEVEN WORN LUGS

Appearance
Lugs are worn in an uneven manner from front to back, side to side, or grooved

Possible cause
- Application related wear due to roading, loading and operation, or other (see rail application photo).

Actions
- Operator awareness
- Select appropriate tread profile in the case of WEX for rails. Smooth tire for the one in contact with the rail or roller

Warranty
None
**E05: TAPERED WEAR**

**Appearance**
Lugs are more worn at one side then at the other

**Possible cause**
- Wrong camber angle
- Wrong steering angle
- Axle misalignment (damaged)
- Unequal or improper inflation pressure
- Different compounds/treads/brands/OD on axle
- Application (turning preference)
- Dual mounting

**Actions**
- Check camber angle
- Check steering angle
- Check alignments
- Monitor inflation pressure
- Never mount different tires on 1 axle
- Rotate tires left/right
- Turn tires on wheels if necessary

**Warranty**
None
E06: ABNORMAL FAST WEAR

**Appearance**
Worn tire

**Possible cause**
- Compound
- Application

**Actions: information needed**
- Run hours (very important)
- Application
- Under foot conditions
- Previous experience: Brand

**Warranty**
Situation related
E07: PEELING OFF IN SHEETS

**Appearance**
The tread surfaces are peeling off

**Possible cause**
- Improper temperature/pressure during building or molding

**Actions: information needed**
- None

**Warranty**
Yes

**Comment**
If the damage is not too severe the lifetime and performance is not affected
**E08: OUT OF ROUND**

**Appearance**
Tire is not perfectly fitted on rim
Steel band not concentric to tread (PON)

**Possible cause**
- Bad pressing
- Beads not proper installed
- Mold defect (core not centered correctly) (PON)

**Possible cause**
- Bad pressing
- Beads not proper installed
- Mold defect (core not centered correctly) (PON)

**Warranty**
Situation related
E09: SOFT OR DISCOLOURED SPOT (BLISTER)

Appearance
Tread splitting (middle layer compound peeking through tread after short time or use on solid tires
Blisters and soft spots on pneumatic tires

Possible cause
- Excessive rubber in middle layer at tire building process
- Hot spot in mold, or mold release contamination

Actions
- None

Warranty
Yes for soft spot
Situation related for discoloured spot
**E10: FLASH CRACKING**

**Appearance**

The flash starts to separate after only a few hours of use

**Possible cause**

- Mold release agent trapped between flash

**Actions**

- None

**Warranty**

Yes

**Comment**

If the crack is not severe the performance and lifetime will not be affected, the product can be used
E11: RADIAL CRACKS

Appearance
Radial cracks

Possible cause
- Overload

Actions
- Check axle loads for both loaded and empty conditions
- Check if the truck has been equipped with extra weight or special attachments
- Reduce the carried load, if possible
- Note: steer tire overload occurs when a truck is carrying loads that are significantly less than what it is rated to carry
- Use proper tire size (larger, wider), or use a “high load” compound
- Possibility to use larger equipment?

Warranty
None
## E13: FLAKEY TREAD

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Cracks in middle of tread</th>
</tr>
</thead>
</table>

### Possible cause
- Green tire outside diameter too big compared to mold

### Actions
- None

### Warranty
- Yes
E14: TREAD DELAMINATION

Appearance
Tread peeling off in layers

Possible cause
- Delamination (precure) between tread rubber layers due to too high temperature at tread rolling

Actions
- None

Warranty
Yes
G: ON A COMMERCIAL BASIS

ACTIONS: COMPENSATION IS SITUATION RELATED
H: OTHER FAILURE CODES

ANYTHING THAT DOES NOT SUIT THE CURRENTLY DEFINED FAILURE CODES

H02: DESIGN FAILURE

Appearance
Visually this product could appear fine, but performance would be compromised

Possible cause
- Human error in drawing, calculation or product to purpose

Actions
- None

Warranty
Yes, and the product would likely be recalled
H08: BEAD LEAKS

Appearance
Tire leaking air from the bead area, this may be realized visually or audibly

Possible cause
- Inconsistencies in the bead area

Actions
- None

Warranty
Yes, provided the leak is caused by a manufacturing issue and not the consequence of mounting or a wheel issue
H09: VIBRATIONS

Appearance
There may not be any visual indication of a vibration issue

Possible cause
- Flat spots or inconsistencies on the tread face

Actions
- Educate operator about flat spotting tires

Warranty
Condition related, provided the vibration is caused by a manufacturing issue and not the consequence of mounting or a wheel issue
H10: WEATHER CHECKING

Appearance
Small cracks at sidewalls or between the lugs

Possible cause
- Too long exposed to sun light and/or ozone

Actions
- Store tires in a protected environment: dark and dry place, away from ozone. If equipment is idle for long periods, place it on blocks, cover the tires with a dark covering and reduce the internal air pressure

Warranty
None
I: WHEEL RELATED CLAIMS

I01: OFFSET

Appearance
Nave plate attached in wrong position in wheel

Possible cause
- Improper installation distance of nave plate, caused by miscommunication or human error

Actions
- None

Warranty
Yes
I02: RIM WIDTH

Appearance
Rim width is incorrect, and doesn’t meet ETRTO, Tire & Rim Association specifications

Possible cause
- Incorrect metal width used to form rim

Actions
- None

Warranty
Yes
I03: RIM DIAMETER

Appearance
Rim diameter is incorrect, and doesn’t meet ETRTO, Tire & Rim Association specifications

Possible cause
- Incorrect metal width used to form rim or joint related issue at time of welding

Actions
- None

Warranty
Yes
I04: PILOT DIAMETER

Appearance
Pilot hole is incorrect size, and does not fit the hub, or is sloppy on the hub

Possible cause
- Incorrect diameter machined on pilot hole, human error or miscommunication

Actions
- None

Warranty
Yes
I05: NAVE THICKNESS

Appearance
Incorrect nave plate thickness used against drawing

Possible cause
- Incorrect nave thickness due to human error or miscommunication

Actions
- None

Warranty
Yes
I06: HOLE PCD

Appearance
Bolt circle dimension is out of specification.

Possible cause
- Error in machining process

Action
- None

Warranty
Yes
I07: HOLE DIAMETER

Appearance
Incorrect mounting hole diameter

Possible cause
- Human error, wrong boring bit used

Actions
- None

Warranty
Yes, possible rework if originally made too small
108: COUNTERSINK DIAMETER

Appearance
Countersink too deep or too shallow affects o.d.

Possible cause
- Human error

Actions
- None

Warranty
Yes, possible rework if originally made too shallow
I09: SKIMMING DIAMETER

Appearance
Skimming diameter wrong o.d. or depth

Possible cause
- Human error, or miscommunication with OE

Actions
- None

Warranty
Yes, possible rework in some cases
I10: TYPE OF CHAMFER

Appearance
Wrong chamfer, or no chamfer used

Possible cause
- Human error, or miscommunication with OE

Actions
- None

Warranty
Yes, situation related, possible to rework in some cases
I11: PAINT THICKNESS

Appearance
Paint appears too thick or too thin in coverage

Possible cause
- Spray gun malfunction or operator error/training

Actions
- None

Warranty
Situation related
**I12: OVALITY**

**Appearance**
Rim is not round, but shaped like an egg

**Possible cause**
- Rim not sized properly

**Actions**
- None

**Warranty**
Yes
I14: ECCENTRICITY OF HOLE TO PILOT

Appearance
Bolt circle or hole not concentric to pilot hole

Possible cause
- Human error

Actions
- None

Warranty
Yes
I15: ECCENTRICITY PILOT PCD TO RIM

Appearance
Pilot hole is not centered within the rim

Possible cause
- Pilot not drilled in center of nave, or nave not welded concentric to rim

Actions
- None

Warranty
Yes
Z: OTHER CHARGES

ACTIONS: COMPENSATION IS SITUATION RELATED
NOT CLAIMABLE

ENVIRONMENTAL CONDITIONS

Chemical Exposure

- Solvents, Oils
- Cleaning Chemicals
- Steam
- Animal Fats
- Salt

Good housekeeping and floor maintenance programs are a must!
NOT CLAIMABLE

MARKING THE FLOOR

- Tires that contain carbon black can mark floors.
- Recommend non-marking tires and a static strap (or other method of discharging static electricity)
- Non-Marking tires will not mark the floor, but dirt that collects on them will
- Good housekeeping and floor maintenance programs are a MUST!
NOT CLAIMABLE

FLAT SPOTTING

- Occurs when a truck has been kept idle for a while
- The tire shows a flat spot, causing a vibration when starting to roll again
- Disappears when the tire has reached its normal running temperature
- Avoid/minimize stand still of trucks under load
- If there is repetitive bouncing on one tire only, it may be due to a manufacturing defect (porosity, bad distribution of rubber layers, etc.) or an "out of round" condition as a result of spinning the tires
- Flat spots may also be the result of skid-braking, hot shifting, and towing or dragging the machine