

11.1 Pre-Use / Daily Inspections

All operators of mobile plant must undertake a pre-start / daily inspection of their machines, including a comprehensive walk around inspection of their tyres. Where any operator regards the condition of a tyre as a hazardous tyre, or suspects that such a condition may occur, they must inform their supervisor immediately. The supervisor must arrange for tyre bay personnel to conduct an inspection to review the condition and advise accordingly.

Document Reference - MAC-ENG-STD-006

Appendix 1: Hazardous Tyre TARP

Category 1 Initial Response: Activate Emergency Response, follow Emergency Management Requirements Park in safe area, evacuate and implement > 300m exclusion zone Stand affected mobile equipment down for 24hrs before inspection by Tyre Bay Personnel	
<p>Electrification Power line contact, electrical services contact (including metal contact with high voltage trailing cable) or lightning strike.</p>	<p>Post stand-down action:</p> <ul style="list-style-type: none"> Assessment by authorised tyre service personnel after stand-down Remove affected tyre/s and perform inspection Refer Hazardous Tyre Process Workflow for further information regarding outcomes and deliverables in each case <p>Inspection Process</p> <ul style="list-style-type: none"> Tyre Fitter to complete Hazardous Tyre Inspection Checklist with OCE Determine if the vehicle is safe to approach If safe, inspect the vehicle If not safe, quarantine for a further 24 hours Remove any affected tyres from the vehicle for inspection.
<p>Tyre / Wheel Assembly or Brake Fire Flames from tyre and/or; Brake fire from locked and hot brakes.</p>	
<p>Extensive flames Tyres and rims exposed to extensive flames and heat during equipment fire</p>	
<p>Major Hot Spot / Smoke Tyre visibly smoking while mobile equipment is stationary and smoke is not being expelled under pressure and/or; Smoke expelled from hot spot under pressure (flames may or may not be visible).</p>	
<p>Applying Heat to Rim with tyre fitted E.g. Welding or other hot work to rim / wheel components or fasteners with tyre fitted. Welding on Rims with tyres fitted is BANNED at MAC.</p>	
<p>Dragging brakes - Major Overheated brakes from dragging, overuse or other event and there is a strong smell of hot rubber</p>	
<p>Known or suspected debris in tyre cavity Wood, packing material or other debris accidentally left in the tyre during fitment can result in Pyrolysis / explosion.</p>	
Category 2 Initial Response: Notify area supervisor / OCE Asset to park in safe area delegated by OCE, Operator to evacuate and implement > 300m exclusion zone Stand down affected mobile plant for 12hrs before inspection by Tyre Bay Personnel	
<p>Minor Hot Spot / Hot Tyre Tread detachment caused by heat separation, Tyre has strong smell of hot rubber but is not visibly smoking</p>	<p>Post stand-down action:</p> <ul style="list-style-type: none"> Assessment by authorised tyre service personnel If shape of tyre is maintained, check pressure and belt temperature manually. If pressure is greater than 30% above cold inflation pressure or belt temperature is >105°C stand down for an additional 12 hours before rechecking. If hot spot is confirmed to be minor, mobile equipment should go directly to the Tyre Bay and have the tyre changed out. If hot spot is deemed to be major, maintain quarantine for 12 hours and re-assess.
<p>Low Tyre Pressure Tyre found to be operating flat or under inflated (<80% of Cold inflation Pressure) AND there is a strong smell of rubber.</p>	<p>Post stand-down action:</p> <ul style="list-style-type: none"> Assessment by authorised tyre service personnel If evidence of major hot spot or strong smell of hot rubber is present, maintain quarantine for 12 hours and re-assess. If no evidence of a major hot spot is present, equipment should go directly to the Tyre Bay and have the tyre changed out.
<p>Major Bubble Tyre has a bubble larger than 15 cm in height or visibly growing.</p>	<p>Post stand-down action:</p> <ul style="list-style-type: none"> Assessment by authorised tyre service personnel Hold quarantine until confident bubble is not growing Deflate the tyre using safest method. Use spike if necessary.

<p>Dragging brakes - Minor Overheated brakes from dragging, overuse or other event but no noticeable affect to rim or tyre</p>	<p>Post stand-down action:</p> <ul style="list-style-type: none"> • Assessment by authorised tyre service personnel • Use temperature gun or thermographic camera to assess temperature of rim and tyre around brake. • If shape of tyre is maintained, check pressure and belt temperature manually. If pressure is greater than 30% above cold inflation pressure or belt temperature is >105°C stand down for an additional 12 hours before rechecking.
<p>Hub and wheel involvement with flame (not extensive) (If during an equipment fire response, it is identified that tyres and rims may have been exposed to flame, this should be initiated after equipment fire emergency is contained)</p>	

Category 3
Initial Response: Notify area supervisor / OCE.
Park in safe area, evacuate and implement > 100m exclusion zone
Stand down until inspection by authorised tyre service personnel

<p>Tread separation with erosion down to the body ply</p>	<ul style="list-style-type: none"> • Assessment by authorised tyre service personnel • If bubble is deemed to be minor, bubble should be marked at its extreme edges, dated, and periodically checked (daily until safety level determined). • If bubble is deemed to be major, upgrade to Category 2.
<p>Smoke or flash involving wheel motor, hub or brakes.</p>	<ul style="list-style-type: none"> • Assessment by authorised tyre service personnel • Inspect severity of tread detachment. Continue to monitor if cords damaged & plan tyre c/out
<p>Bubble on sidewall including bulging repair</p>	<ul style="list-style-type: none"> • Assessment by authorised tyre service personnel • Inspect tyre for location of deformation. • If tyre generating cracking / popping upgrade to Category 2 • Upper sidewall – remove & inspect for damage • Lower side wall – drill & vent bubble to prevent hydraulic spread. Monitor
<p>Tyre is making a cracking or popping sound</p>	<ul style="list-style-type: none"> • Assessment by authorised tyre service personnel • Inspect severity of cut. Continue to monitor if cords undamaged. Plan c/out of tyre if cut has damaged cords beyond midpoint of tyre
<p>Bead erosion with damage to casing chords</p>	<ul style="list-style-type: none"> • Assessment by authorised tyre service personnel • Inspect for belt exposure and/or damage. Continue to monitor if belts undamaged. Plan c/out of tyre if belts damaged.
<p>Cracked or damaged rim base or components e.g. locking ring, bead seat band</p>	<ul style="list-style-type: none"> • Assessment by authorised tyre service personnel

Category 4
Initial Response: Notify area supervisor / Authorised Tyre Service Person

<p>Minor Bubble Tyre has a bubble smaller than 15 cm in height and not visibly growing.</p>	<ul style="list-style-type: none"> • Assessment by authorised tyre service personnel • If bubble is deemed to be minor, bubble should be marked at its extreme edges, dated, and periodically checked (daily until safety level determined). • If bubble is deemed to be major, upgrade to Category 2.
<p>Tread detachment - Mechanical</p>	<ul style="list-style-type: none"> • Assessment by authorised tyre service personnel • Inspect severity of tread detachment. Continue to monitor if cords damaged & plan tyre c/out
<p>Side wall deformation (upper / lower)</p>	<ul style="list-style-type: none"> • Assessment by authorised tyre service personnel • Inspect tyre for location of deformation. • If tyre generating cracking / popping upgrade to Category 2 • Upper sidewall – remove & inspect for damage • Lower side wall – drill & vent bubble to prevent hydraulic spread. Monitor
<p>Side wall cut</p>	<ul style="list-style-type: none"> • Assessment by authorised tyre service personnel • Inspect severity of cut. Continue to monitor if cords undamaged. Plan c/out of tyre if cut has damaged cords beyond midpoint of tyre
<p>Belt exposure</p>	<ul style="list-style-type: none"> • Assessment by authorised tyre service personnel • Inspect for belt exposure and/or damage. Continue to monitor if belts undamaged. Plan c/out of tyre if belts damaged.
<p>Mechanical Failure (resulting to damage / heating tyres)</p>	<ul style="list-style-type: none"> • Assessment by authorised tyre service personnel • Inspect tyre for damage. If damage to belts side walls treads see relevant section above for a guide. Check pressure and temperature • If temperature or pressure checks are out side of specs, upgrade to Category 2.

11 Operator Evacuation from Mobile Equipment

To minimise the risk to the Operator during retreat from a vehicle with a hazardous tyre, they are required to avoid the Extreme Danger zone (Shown for Pos 1 tyre as an example below). The extreme danger zone is the likely path of air blast and projectiles from a tyre burst or/ explosion.

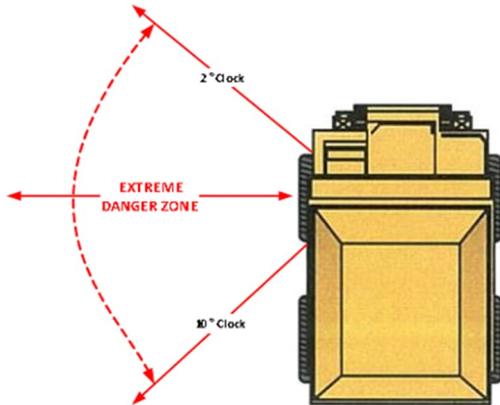
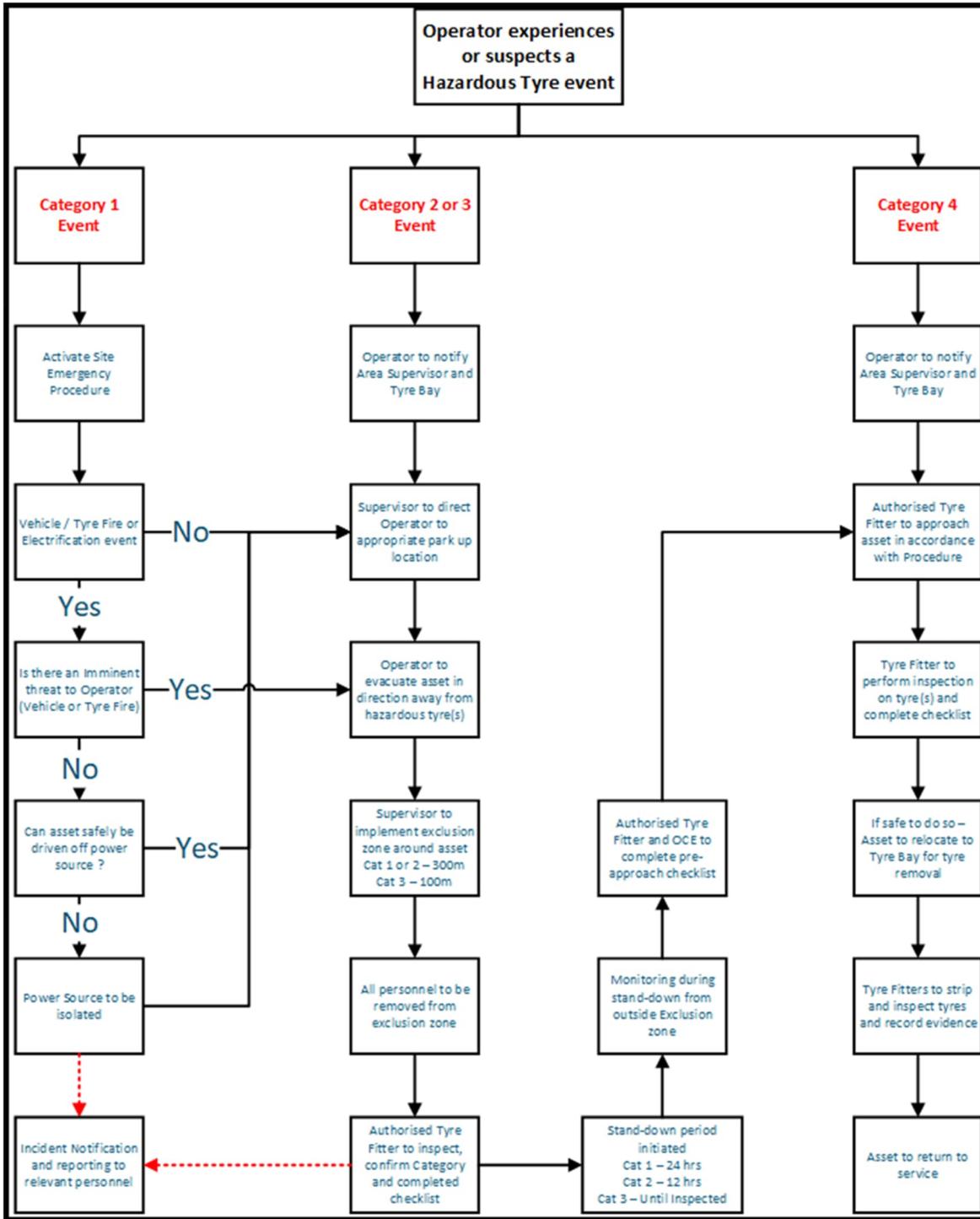


Figure 1 - Extreme Danger Zone for Pos 1 Tyre

⚠ Under no circumstances must the operator walk to the side of the mobile plant to inspect the suspected tyre or attempt to extinguish a tyre fire with a portable fire extinguisher.

14 Hazardous Tyre Process Workflow



i Document Reference - MAC-STE-PRO-008

What to do if there is damage to the tyres of your truck

- **L1 (GREEN):** Assess the condition of your tyres. If there is no serious damage, if the damage has been previously inspected (and marked with paint) or if there is an information tag in the cab - return to work.
- **L2 (AMBER):** Less serious damage. Return to work and plan inspections for an opportune time (ie. when there is a crib, fuelling or blast delay).
- **L3 (RED):** Tyres require immediate attention - call Dispatch and arrange for Otraco inspection immediately.
 - Separation of the tyre
 - Sidewall bubbles
 - Wire exposed in tread or in the sidewall
 - Damaged or leaking valve stem
 - Wheel nuts or bolts missing

If in doubt, contact Otraco

Shoulder Separation

- Splits or cracks in the shoulder region are an indication of internal separation
- Shoulder separations can be serious
- If these signs are identified, the truck should not be operated and Otraco should be contacted for an immediate inspection.



L3 (RED): Immediate Otraco inspection required

Sidewall Bubbles

- Sidewall bubbles can be very **serious** and qualified personnel must be called to inspect the tyre. In the interim the equipment should not be operated, tagged 'out of service' and left isolated in a safe area.
- This type of damage is very rare and extreme cases are more rare.



L3 (RED): Immediate Otraco inspection required

Damaged Valve Stem



L3 (RED): Immediate Otraco inspection required



Sidewall Cuts on Steer Positions (Positions 1 & 2)

L3 (RED): Immediate Otraco inspection required

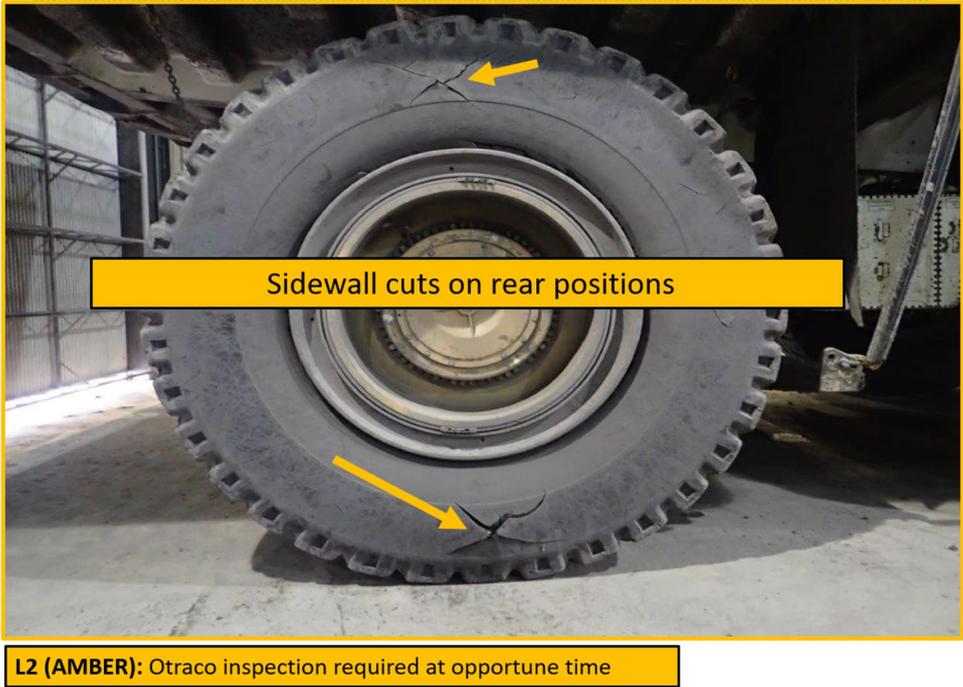
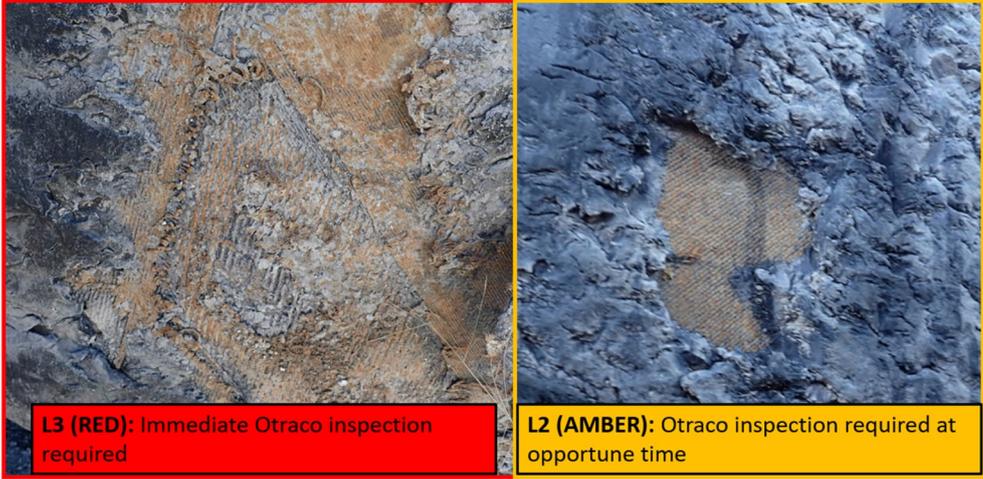


Sidewall Cuts on Steer Positions (Pos 1 & 2)

L3 (RED): Immediate Otraco inspection required

Worn out belts exposed in tread

This shows the different layers of a worn tyre with belts exposed. The tyre on the left has worn down to the third layer of belts call otraco immediately to inspect. The tyre on right has worn down were the first layer of wire belt is just showing call otraco to inspect. Tyre will be monitored and scheduled for replacement.





Tread damage

L2 (AMBER): Otraco inspection required at opportune time

Bead Bubbles

Bead Bubbles

- The separation occurs typically on the sidewall above the flange where a separation forms between the turn-up ply and the fill rubber of Casing Ply
- It is an internal separation with gasses trapped inside the sidewall and is not effected by the tyres internal pressure.
- These bubbles are very common and are safe to run.



L2 (AMBER): Otraco inspection required at opportune time



Tyre has been inspected and marked with paint okay to continue in service

L1 (GREEN): Assess for damage and return to work



Tyre has been inspected and marked with paint okay to continue in service

L1 (GREEN): Assess for damage and return to work

i Document Reference - MAC-STE-GDE-003