Common Reasons for Solid Tire Replacement

Solid rubber forklift tires (also known as solid resilient or cushion tires) are designed for durability, but they are not indestructible. Understanding why they fail can help you extend their life and maintain warehouse safety.

Here is an explanation of the primary causes of solid tire failure and wear:

1. Heat Build-Up (The "Silent Killer")

The most common cause of internal failure in solid tires is excessive heat. Unlike pneumatic tires, which use air to dissipate heat, solid rubber acts as an insulator.

- **The Cause:** Long runs at high speeds or carrying heavy loads without "cooling off" periods causes the internal rubber to soften and turn into a gel-like substance.
- **The Result:** This can lead to internal delamination or even a blowout (often called a "sidewall explosion"), where the internal pressure causes the rubber to rupture outward.

2. Chunking and Tearing

This is a visible type of damage where large pieces of rubber break away from the tire's tread or sidewall.

- **The Cause:** Driving over sharp debris (nails, glass, metal scrap), hitting dock plates at the wrong angle, or aggressive driving (spinning tires and sharp turns).
- **The Result:** Chunking reduces traction, creates a bumpy and unstable ride for the operator, and eventually leads to the tire needing immediate replacement.

3. Flat Spotting

A flat spot is a worn area on only one section of the tire's circumference.

- **The Cause:** Abrupt braking (locking the wheels), spinning tires during rapid acceleration, or leaving a fully loaded forklift parked in the same spot for an extended period, especially in hot environments.

- **The Result:** You will feel a "thump-thump" vibration while driving, which can damage the forklift's axle and cause operator fatigue.

4. Uneven Wear and Misalignment

Tires that wear down faster on one side or in the center indicate mechanical or operational issues.

- **The Cause:** Worn suspension components, misaligned axles, or consistently driving over uneven warehouse floors.
- **The Result:** Rapid balding on one side reduces the tire's effective lifespan and can compromise the stability of the mast when lifting heavy loads.

5. Normal Wear (The 2-Inch Rule)

Even with perfect use, tires eventually wear out simply through friction with the floor.

- **The Guide:** Most solid tires have a **safety line** or "60-J line" molded into the sidewall. Once the wear reaches this line, or once you have lost approximately 2 inches of the original tire height, the tire must be replaced to prevent damage to the forklift's undercarriage.