
Industrial Polyurethane-Tyred Iron Centred Wheels

Title	Industrial Polyurethane-Tyred Iron Centred Wheels
Thumb	
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Description

Industrial polyurethane-tyred wheels are widely used across material-handling, logistics, manufacturing and heavy industry because they combine excellent load capacity, abrasion resistance and ride quality with long service life. Below is a practical technical overview to help you understand performance, construction, selection and maintenance.



What is a polyurethane-tyred (PU-tyred) wheel? - A PU-tyred wheel consists of a metal core with a polyurethane tread bonded or cast around it. The tyre can be applied by casting in place, vulcanization, or adhesive bonding.

Why use Polyurethane for Heavy-duty Wheels?

1. Abrasion resistance: PU outlasts natural rubber and many plastics in abrasive environments.

2. Load capacity and resilience: Polyurethane supports high static and dynamic loads with lower deformation than rubber at comparable hardness.

3. Shock and noise reduction: Effective vibration damping and quieter operation than metal or nylon cores.

4. Floor protection & traction: PU treads reduce floor damage and provide good traction without marking (depending on formulation).

5. Chemical and heat resistance: Tailorable formulations resist oils, greases and some chemicals; high-temperature grades are available.

Typical Properties and Specs

Hardness: commonly 70A–95A Shore (softer for ride/floor protection, harder for abrasion and heavy loads). Choose hardness to balance floor protection versus load/abrasion needs.

1. Density: $\sim 1.1\text{--}1.3 \text{ g/cm}^3$ (varies by formulation).

2. Temperature range: standard -20°C to $+80^\circ\text{C}$; specialized grades up to $\sim 120^\circ\text{C}$.

3. Tensile/tear: varies by compound; heavy-duty grades optimized for high tear strength and low abrasion.

4. Load capacity: highly dependent on wheel diameter, tread width, hardness and design—industrial units range from a few hundred kilograms to several tonnes per wheel. Consult manufacturer load charts.

Conclusion and Recommendation

For heavy-duty industrial applications where abrasion resistance, load capacity, noise reduction and floor protection are required, polyurethane-tyred wheels, especially polyurethane bonded to cast-iron cores, are an excellent choice. Specify wheel diameter, tread width and hardness based on load and floor conditions; insist on proper surface prep and an adhesion-proven bonding system from the manufacturer. Regular inspections and maintenance will maximize service life and safety.