
Aluminum Core Polyurethane Wheels

Title	Aluminum Core Polyurethane Wheels
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Description

Aluminum core polyurethane wheels are a high-performance solution for industrial and automated equipment requiring a balance between strength, durability, and weight reduction. By combining a lightweight aluminum hub with a resilient polyurethane tread, these wheels offer exceptional performance in demanding environments where both load-bearing capacity and smooth operation are essential.



Key features of aluminum core polyurethane wheels

- High load capacity

The aluminum core provides a rigid and stable structure capable of supporting medium to heavy loads without deformation.

- Lightweight design

Aluminum offers significant weight savings compared to steel or cast iron cores, making it ideal for mobile systems and battery-powered equipment.

- Durable polyurethane tread

The outer layer of high-grade polyurethane is wear-resistant, non-marking, and provides excellent grip on various floor surfaces.

- Corrosion resistance

Aluminum is naturally resistant to rust, making these wheels suitable for humid or chemically exposed environments.

- Low noise and vibration

The polyurethane layer absorbs shocks and vibrations, reducing operating noise and protecting delicate equipment.

- Precision machining

Aluminum cores can be CNC-machined with high accuracy, ensuring excellent wheel balance and concentricity for smooth rolling.

Common equipment and applications

Aluminum core polyurethane wheels are widely used in industries that demand clean operation, medium-to-heavy loading, and frequent mobility, including:

AGVs (automated guided vehicles) □ smart warehouses, logistics automation

RGVs (rail-guided vehicles) □ assembly line shuttles, automotive plants

Semiconductor industry: clean room stocker, trolleys

Industrial transport carts □ heavy component transport in factories

Medical & lab equipment □ cleanroom-friendly, non-marking wheels

Material handling systems □ conveyor platforms, trolleys, lifters

Aerospace & electronics □ precision equipment requiring smooth, controlled motion



Why use aluminum core wheels?

Compared to other core materials, aluminum strikes the ideal balance between strength, weight, and corrosion resistance.

Aluminum cores are perfect for:

Equipment requiring frequent acceleration/deceleration

Applications sensitive to vibration or contamination

Environments where weight reduction improves energy efficiency (e.g., battery-powered systems)

Customization options

These wheels are often available with customization to suit different application needs:

Different tread hardness (Shore A 80–95)

Anti-static or ESD-safe polyurethane formulations

Special hub designs for keyed shafts or precision bearings

Color-coded treads for easy identification and usage zones

Aluminum core polyurethane wheels are an excellent choice for businesses seeking high-performance wheels that combine strength, lightness, and long-term reliability. Whether you're designing AGVs, improving logistics platforms, or upgrading industrial carts, these wheels offer the versatility and performance your operation demands.