Heavy-Duty Cast Iron Polyurethane Wheels

Title	Heavy-Duty Cast Iron Polyurethane Wheels			
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Description

Introduction

In modern industrial environments, the choice of wheel material plays a critical role in equipment performance, durability, and safety. Heavy-duty cast iron polyurethane wheels combine the robust structural integrity of cast iron with the versatility of polyurethane treads, making them the ideal solution for applications that demand high load capacity, low rolling resistance, and floor protection.



What are cast iron polyurethane wheels?

These wheels feature a solid cast iron core bonded to a durable polyurethane tread, resulting in a dual-material structure that offers the best of both worlds: Strength and shock absorption. They are designed to operate in harsh, high-impact conditions while protecting floor surfaces and reducing noise, unlike all-metal wheels that can damage flooring or all-polyurethane wheels that may lack sufficient load support in some applications.

Key features

High load-bearing capacity: Supports heavy loads without deformation.

Abrasion resistance: Polyurethane tread resists cuts, chips, and wear.

Shock absorption: Damps vibration during transport or handling.

Chemical resistance: Resists oils, greases, solvents, and mild acids.

Wide temperature range: Suitable for use in cold storage or heated facilities.

Advantages of cast iron core

Cast iron offers excellent structural strength, making it the core material of choice for load-intensive industrial operations. Its rigidity ensures consistent performance under prolonged use, especially on transfer carts, AGVs, or factory trolleys operating on uneven floors or rough terrain.

Exceptional strength and durability

Resistance to deformation and fatigue

Ideal for continuous operation and heavy-duty usage

Benefits of polyurethane tread

The polyurethane outer layer significantly enhances the wheel's performance in delicate environments. It's engineered to deliver a smooth, quiet ride while protecting sensitive flooring surfaces.

Non-marking and floor-friendly

Excellent traction and slip resistance

Customizable hardness levels (shore A or D) for different working conditions

Low rolling resistance for energy-efficient movement

Common applications

Heavy-duty cast iron polyurethane wheels are widely used across industries that require strong yet flexible transport solutions:

Forklifts and stackers

Automated guided vehicles (AGVs) and rail guided vehicles (RGVs)

Transfer carts and trolleys

Assembly line carriers in automotive and aerospace

Warehouse and logistics platforms

Mining, steel, and heavy equipment factories

Customization options

To meet the unique needs of different working conditions, these wheels can be custommanufactured with:

Various diameters and widths

Load capacities from hundreds to thousands of kilograms

Tread hardness (70A-95A or 80D)

Different bearing types (ball, roller, or plain)

Mounting styles: Flanged, flangeless, top plate, side mount, or pin connection

Anti-static or electrically conductive versions for ESD-sensitive areas

Performance	Hardness	Tensile strength	Elongation at break	Abrasion	Density	Resilience	Compression permanent	Permanen deformatio	t Poisson's on ratio	Elastic modulus	Friction coefficient /steel
Product and parameters	Shore	MPa	%	kN/m	mm ³	g/ cm ³	%	%	1	MPa	/
	75A	18	600	50	45	1.14	50	25	0.5	5	0.8
	80A	26	580	60	40	1.14	55	23	0.48	20	0.75
	85A	35	550	73	30	1.15	50	22	0.46	40	0.6
	90A	38	530	105	30	1.16	48	20	0.44	60	0.5
	95A	45	500	120	30	1.17	40	18	0.39	80	0.45

Why choose Philson heavy-duty cast iron polyurethane wheels?

As a leading manufacturer of industrial polyurethane wheel systems, Philson delivers:

Precision-engineered wheels for high-performance operation

Custom wheel designs tailored to your application

Premium-grade materials ensure long-lasting durability

Responsive technical support and fast lead times

Our wheels have been widely adopted in industries like logistics, metallurgy, cleanroom environments, and heavy machinery manufacturing, with proven results in safety and efficiency.

Contact us today for custom specifications, pricing, and expert technical support.