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Polyurethane vs Rubber Casters: Which Wheel Material

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Quick answer. Polyurethane wins on load and lifespan: 800 to 2,000+ lb per wheel, oil and solvent resistance, and 3 to 5× longer wear than rubber. Rubber tops out near 500 lb per wheel but runs 5 to 8 dB quieter and is gentler on tile, hardwood, and polished concrete. Spec polyurethane for industrial duty, rubber for hospitals, offices, and noise-sensitive fleets.

Head-to-Head Comparison Chart

Feature	Polyurethane	Rubber
Load Capacity (per caster)	Up to 2,000+ lbs	Up to 500 lbs
Rolling Resistance	Low, easier to push	Moderate to high
Durometer (ASTM D2240)	Shore A 80 to 95, Shore D up to 75	Shore A 55 to 85
Rebound Resilience	Moderate (better wear)	High (better shock absorption)
Floor Protection	Good, non-marking	Excellent, softest contact
Noise Level	Quiet	Very quiet
Shock Absorption	Moderate	Excellent
Abrasion Resistance	Excellent	Moderate

Other Wheel Materials to Consider

Material	Best For	Load Range
Phenolic	High heat, ovens, dry environments	Up to 1,200 lbs
Nylon	Chemical resistance, lowest rolling resistance	Up to 2,000 lbs
Steel	Extreme loads, metal-debris environments	Up to 10,000+ lbs
Cast Iron	High temperature, heavy-duty industrial	Up to 5,000 lbs
TPR / Thermoplastic Rubber	Quiet cleanroom carts, light duty	Up to 400 lbs



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