

TECHNICAL REFERENCE · PRINT & KEEP

Static Load Rating for Casters Sizing & Spec

One-page quick reference · Full engineering guide + live tools at the QR codes below

Quick answer. Static load rating is the maximum load a caster can support at rest without structural failure, tested to ICWM standards. It is not a working capacity: dynamic (rolling) rating is typically 30 to 50 percent lower. Design carts around dynamic rating plus a safety factor, never around the static number.

Static vs Dynamic Load Rating

Wheel Material	Static Rating	Dynamic Rating	Typical Ratio
Forged Steel	10,000 lb	7,500 lb	75%
Cast Iron	5,000 lb	3,750 lb	75%
Polyurethane on Iron	4,000 lb	2,400 lb	60%
Solid Polyurethane	2,500 lb	1,500 lb	60%
Phenolic	2,500 lb	1,500 lb	60%
Solid Rubber	1,000 lb	500 lb	50%
Pneumatic	500 lb	300 lb	60%

Safety Factor Math for Cart Design

Scenario	Factor	Reason
Powered tow, smooth floor	1.25x	Low shock loading
Manual push, smooth floor	1.5x	Moderate shock loading
Manual push, floor seams/thresholds	2.0x	High shock loading
Forklift assist, palletized	2.0x	Heavy impact on load
Dock loading (truck deck transfer)	2.5x	Very heavy impact



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