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Polyurethane Railroad Wheels: Industrial Rail Spec

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Quick answer. Polyurethane is usually the wrong choice for railroad and in-plant rail service. Cast iron V-groove wheels, rated 800 to 7,000 lb per wheel, are the correct spec for rail-guided die carts, transfer cars, and dollies; polyurethane cold-flows and flat-spots on rail crowns within 30 to 90 days. Reserve poly for light guide-rail duty under 500 lb per wheel.

Why Cast Iron V-Groove Is the Right Answer for Most Rail Applications

Wheel Size	Material	Load (per wheel)	Best For
4 x 2 in V-groove	Cast iron	800 lbs	Light shop carts, tow-line dollies
5 x 2 in V-groove	Cast iron	800 to 1,200 lbs	Medium transfer carts, platform dollies
6 x 2 in V-groove	Cast iron	1,200 to 1,500 lbs	Die carts, tool carts on rail
8 x 2 in V-groove	Ductile iron	2,500 to 3,000 lbs	Foundry transfer, mold carts
10 x 3 in V-groove	Ductile iron	7,000 lbs	Steel-mill transfer cars, heavy rail

Load Sizing for Rail Wheels

Cart Loaded Weight	Wheels	Per-Wheel Load	Recommended Wheel
2,400 lbs	4	1,040 lbs	6 x 2 in cast iron V-groove
4,800 lbs	4	2,080 lbs	8 x 2 in ductile V-groove
9,000 lbs	4	3,900 lbs	10 x 3 in ductile V-groove (7,000 lbs rated)
1,500 lbs light rail	4	650 lbs	8 x 2-1/2 in poly-on-steel (flat tread, 1,500 lbs rated)



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