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Operating Temperature for Casters Spec Guide

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Quick answer. Caster operating temperature limits depend on wheel material: polyurethane covers roughly -40 to 180 degrees F, glass-filled nylon -40 to 250 F, phenolic -50 to 475 F, and cast iron or forged steel -60 to 800 F. Bearing grease grade must match the same envelope. Spec by both temperature extremes, not the nominal ambient.

Wheel Material Temperature Envelopes

Wheel Material	Min Continuous	Max Continuous	Notes
Standard polyurethane (TDI)	-40F	180F	Chunks above 180F, fractures below -40F
MDI polyurethane	-50F	200F	Higher-temp poly variant
Phenolic (macerated fabric)	-50F	475F	Oven, autoclave, bakery default
Cast iron	-60F	800F	Foundry, forging, steel mill
Forged steel	-60F	800F	Shock-duty, high temperature
Glass-filled nylon	-40F	250F	Chemical + mid-heat
Thermoset rubber	-50F	150F	Quiet, low-heat only
Thermoplastic rubber (TPR)	-40F	160F	Institutional, not industrial heat

High-Heat Applications

Application	Temperature	Wheel	Bearing/Grease
Bakery proofing	180-220F	Phenolic or MDI poly	High-heat polyurea
Autoclave	250-350F	Phenolic / glass-filled nylon	Food-grade H1 high-temp
Industrial oven	350-475F	Phenolic	Clay-thickened high-temp
Forging dolly	475-800F	Cast iron or forged steel	Sealed precision + solid-film
Foundry skip	600-800F	Forged steel	Graphite or solid-film



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