

NLGI Grease Specifications – GC-LB and HPM

GC-LB Comparison

Test Name	Units	Test Method	GC-LB (ASTM D4950)	High Performance Multiuse (HPM)				
				HPM Core	+ Water Resistance (WR)	+ Corrosion Resistance (CR)	+ High Load (HL)	+ Low Temp (LT)
Worked-60 Pen	dmm	D217	220 - 340	220 -340				
*Bearing rust (DI)	rating	D1743	Pass	Pass				
Bearing rust (10% SSW)	rating	D5969				Pass		
Emcor rust test (distilled water), max	rating	D6138		0,1				
Emcor rust (100% SSW), max	rating	D6138				1, 2		
Emcor rust (0.5 N NaCl solution), max	rating	D6138				2, 3		
Four-Ball wear, max	mm	D2266	0.6	0.60			0.50	
Four-Ball weld point, min	kgf	D2596	200	250			400	
Four-Ball LWI, min	kgf	D2596	30					
SRV step load, (Proc. B at 80 °C), min	N	D5706					800	
Fretting wear (wt loss), max	mg	D4170	10				5	
Fretting wear scar by SRV, max	mm	D7594					0.500	
Dropping point, min	°C (°F)	D2265	220 (428)					
High temp grease life, min	hrs	D3527	80					
Oxidation stability, 100 hrs, 100 °C, pressure drop, max	ΔkPa (psi)	D942		35 (5.1)				
Copper corrosion, 24 hrs, 100 °C, max	rating	D4048		1b				

*Either NTN or Timken bearings are acceptable for use

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CR (SAE AMS 3217/3C) 70 hrs at 100 °C	Δ Vol %	D4289	0 to 40					
	ΔHardness	D4289	-15 to 0					
NBR (SAE AMS 3217/2C) 70 hrs at 150 °C	Δ Vol %	D4289	-5 to 30					
	ΔHardness	D4289	-15 to 2					
NBR (ISO 13226), 168 hrs at 125 °C	ΔHardness	D4289		-15 to +2				
	Δ Vol %	D4289		-5 to +30				
Prolonged worked pen (Δ100k)	dmm change	D217		+/- 30				
Water washout, % loss, max	wt%	D1264	15	10	5			
Water spray off, max	wt%	D4049			40			
*Wet roll stability (pen change)	% change	D8022			+/- 15			
High temp bleed (30 hr, 100 °C), max	wt%	D6184		7				
*Roll stability (2 hrs, RT)	% change	D1831		+/-10				
Oil sep (24 hrs @ 25 °C), max	wt%	D1742	6	5				
Leakage, max	g	D4290	10					

*Use 1/2 scale only; ASTM update underway

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Low temp torque ball bearing, -20 °C		ASTM D1478						
Starting torque, max	mNm(g·cm)			1000(10,200)				
Running torque, max	mNm(g·cm)			100(1,020)				
Low temp torque @ -40 °C, max	N-m	ASTM D4693	15.5					
Low temp torque ball bearing, -30 °C		ASTM D1478						
Starting torque, max	mNm (g·cm)							1000(10,200)
Running torque, max	mNm (g·cm)							100(1,020)
U. S. Steel mobility, -20 °C, min	g/min	LT-37						10
Low temp flow pressure (Kesternich), -30 °C, max	mbar	DIN 51805-2						1400

