



Corporate Office and Strip Mill Plant: DP-70, SIDCO Industrial Estate, Ambattur, Chennai-600 098 INDIA

Broad range of bearing material with good antifriction properties for various application are used in the manufacture of Plain Sleeve Bearings, Bushings and Thrust Washers. The components are normally produced from steel-backed and solid bronze strip stock. It is important to consider the operating conditions and characteristics of the available alloys. The factors to be considered in selecting a bearing material are resistance to fatigue, foreign particles, misalignment, imperfect lubrication and operating temperatures.

Pertinent Data relating to Bearing material, Characteristics, Operating conditions and application.

ALLOY FORM	SAE NUMBER	RGB CODE	Alloy Composition (Nominal %)	Characteristics	Operating Conditions			Alloy Hardness	TYPICAL APPLICATIONS	
					Temperature °C	Speed Max M/Sec. Sliding Velocity	Load Max. Kg/cm2			
BABBITT ALLOY	CAST TIN BASE	12	R-18	Sn: 89.0 Sb: 7.5 Cu: 3.25	Very good antifriction properties and conformability. Excellent corrosion resistance due to high tin content. Soft alloy with low wear and good embedability.	135	~	140	20-31 HB	Mainly used in refrigeration engineering, FHP electric motor, main and connecting rod big end bearings as well as thrust washers in low load engines and air compressors.
	CAST LEAD BASE	13	R-27	Pb: 84.0 Sn: 6.0 Sb: 10	Very good antifriction properties and conformability. Less corrosion resistance. Soft alloy with good embedability. Cost advantage over tin base Babbitt and has similar performance characteristics.	135	~	160	11-20 HB	Generally used in camshaft, automatic transmission, pump and connecting rod applications for low load engines and air compressors.
SINTERED ALLOY	LEADED BRONZE	792	R-36	Cu: 80.0 Pb: 10.0 Sn: 10.0	Superior alloy with high physical strength and excellent resistance to pounding & shock loads. It exhibits high load carrying capacity. R-36 is hard and corrosion resistant.	260	15	700	60-130 HB	Piston pin, steering gear, track roller, rocker lever, axle and other applications such as high impact thrust washers and wear plates.
	LEADED BRONZE	794	R-45	Cu: 74.0 Pb: 23.0 Sn: 3.0	Due to high lead content, it gives improved surface action for higher speed. Generally used for medium load and high speed applications.	204	46	350	35-70 HB	Oil pump, transmission, cam shaft, electric motor, balancer, hydraulic pump and other applications intended for thrust washers and wear plates.
	TRIMETAL COPPER LEAD	49+19	R-54	Cu: 75.0 Pb: 24.0 Sn: 0.25 Overlay Cu: 2.5 Sn: 10.0 Pb: Bal.	A Tri-Metal sintered copper-lead with 0.025 mm overlay is used for highest load-speed combinations. Application of overlay considerably increases sliding properties of the Engine Bearings and Bushings.	150	~	560	40-70 HB	R-54 is a Tri-Metal bearing used as main and crankpin bearings in truck and other heavy duty engines.
	PHOSPHOR BRONZE (Lead Free)	-	R-126	Cu: Bal. Sn: 6.0 P: 0.20	Superior lead free bimetal with highest physical strength and load carrying capacity.	240	~	~	90-115 HB	Piston pin, rocker lever, axle and bushings & washers intended for general applications.

PHOSPHOR BRONZE (SOLID)	CONTINUOUS CAST AND ROLLED	SAE CA 510		Sn: 6.0 P: 0.2 Zn: 0.2 Cu: Bal.	High load carrying capacity with superior wear resistance properties.	~	~	~	HV 240 max	Generally used as bushings and washers for steering gear, track roller, rocker lever, transmission, wear plates and other applications.
CLADED ALUMINIUM ALLOY	ALUMINIUM TIN	783	R-72	Sn: 20.0 Cu: 1.0 Al: Bal.	Good seizure/wear resistance. Excellent corrosion resistance.	120	16	320	HV 30-45	Generally used as main and big end bearings for medium load and speed applications. Also used in automatic transmissions and oil pump applications.
	ALUMINIUM SILICON	781	R-81	Al: 95.0 Si: 4.0 Cd: 1.0	Lead/ Tin free aluminium with good load carrying and antifriction properties. Excellent corrosion resistance	120	~	350	HV 28 min	Generally used as connecting rod bearings, bushing and washer in low load engines and air compressors.
		788	R-108	Al: Balance Sn: 10.0 Si: 3.0 Cu: 1.0	Superior conformability and corrosion resistance properties.	120	~	350	HV 35 min	Generally used as bushings for automatic transmission, crank case bushing and oil pump applications.