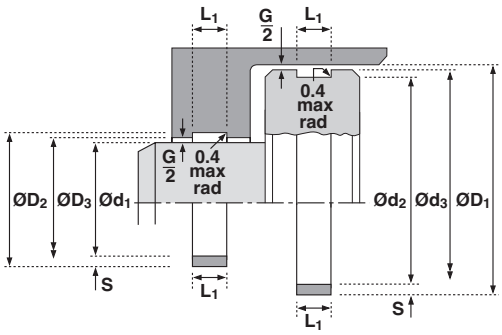
Design

Hallite 506 bearing strip is available in three forms: cut rings, spiral lengths and flat coils. Hallite 506 provides an extremely effective, hard wearing and easy to use bearing material.

Manufactured to very tight tolerances and providing bearing solutions for reciprocating, oscillating and slow rotary movement applications, Hallite 506 bearing strip is used in many of today's most arduous hydraulic applications around the world. Commonly fitted in reciprocating cylinders as rod and piston bearings, Hallite 506 is capable of withstanding extreme side-loads preventing metal to metal contact. The material's design incorporates micro indentations on the bearing strip's surface to trap fluid and provide built-in lubrication to the bearing. The 506 bearing strip is manufactured by a patented process, using a woven fabric reinforced polyester resin material and is proven to be compatible with a wide range of fluids, including mineral oils, water based fluids and phosphate esters, to produce a rectangular section strip which is available in a wide range of inch and metric sizes including cross sections specified in ISO 10766.

* Please note that for reciprocating applications, the compressive stress at yield should be used for design calculations. For rotary shafts use the limiting P.V. values. It is suggested that a 2:1 factor of safety is applied.



Technical details

	Metric		Inch	
Operating Conditions				
Temperature Range	-40°C +120°C		-40°F +250°F	
Limiting PV Values Lubricated*	Speed m/sec	Pressure MN/m^2	Speed ft/sec	Pressure p.s.i.
	0.1	10.0	0.3	1500
	1.0	6.0	3.0	900
	5.0	0.8	16.0	120
Typical Physical Properties				
Specific Gravity		1.27		1.27
Compression Stress at Failure	(Temp 23°C)	450 MN/m^2	(Temp 73°F)	65,000 p.s.i.
Compression Stress at Yield*	(Temp 23°C)	115 MN/m^2	(Temp 73°F)	16,500 p.s.i.
Compression Stress at Yield*	(Temp 80°C)	58 MN/m^2	(Temp 176°F)	8,500 p.s.i.
Coefficient of Thermal Conductivity		0.27 W/mK		0.16 Btu/hft °F
Coefficient of Thermal Expansion	Length	Thickness	Length	Thickness
	9 X 10^{-5}	13 X 10^{-5}	5 X 10^{-5}	7.3 X 10^{-5}
	per °C	per °C	per °F	per °F
Coefficient of Dynamic Friction on	Dry	Lubricated	Dry	Lubricated
steel surface (0.2 µm Ra) / (8 µin CLA)	0.50	0.06	0.50	0.06
Surface Roughness	µm Ra	µm Rt	µin CLA	µin RMS
Dynamic Sealing Face Ød$_1$,ØD$_1$	0.4	4 max	16	18
Static Sealing Face Ød$_2$,ØD$_2$, L$_1$	3.2 max	16 max	125 max	140 max
Bearing Strip Tolerances	L$_1$	S	L$_1$	S
	-0.1 to -0.6	-0.02 to -0.08	-0.005 to -0.025	-0.001 to -0.003
Width of Bearing Split – W	Ød$_1$ / ØD$_1$	W	Ød$_1$ / ØD$_1$	W
	Up to 50	3.00 - 1.50	Up to 2"	0.12 - 0.06
	Up to 120	5.00 - 3.50	Up to 5"	0.19 - 0.14
	Up to 250	9.00 - 7.25	Up to 10"	0.35 - 0.29
	Up to 550	17.00 - 15.00	Up to 22"	0.67 - 0.59
Housing Details & Tolerances				
Rod	Ød$_1$	f9	Ød$_1$	f9
	ØD$_2$ = Ød$_1$+2S	up to : Ø80 H10	ØD$_2$ = Ød$_1$ + 2S	up to : Ø3in H10
		above : Ø80 H9		above : Ø3in H9
	ØD$_3$ = Ød$_1$+G	G min / max	ØD$_3$ = Ød$_1$ + G	G min / max
	L$_1$	+ 0.2 -0 mm		+ 0.008 -0 in
Piston	ØD$_1$	H11	ØD$_1$	H11
	Ød$_2$=ØD$_1$-2S	f9	Ød$_2$=ØD$_1$ -2S	f9
	Ød$_3$ = ØD$_1$- G	G min / max	Ød$_3$ = ØD$_1$ - G	G min / max
	L$_1$	+ 0.2 -0 mm	L1	+ 0.008 -0 in