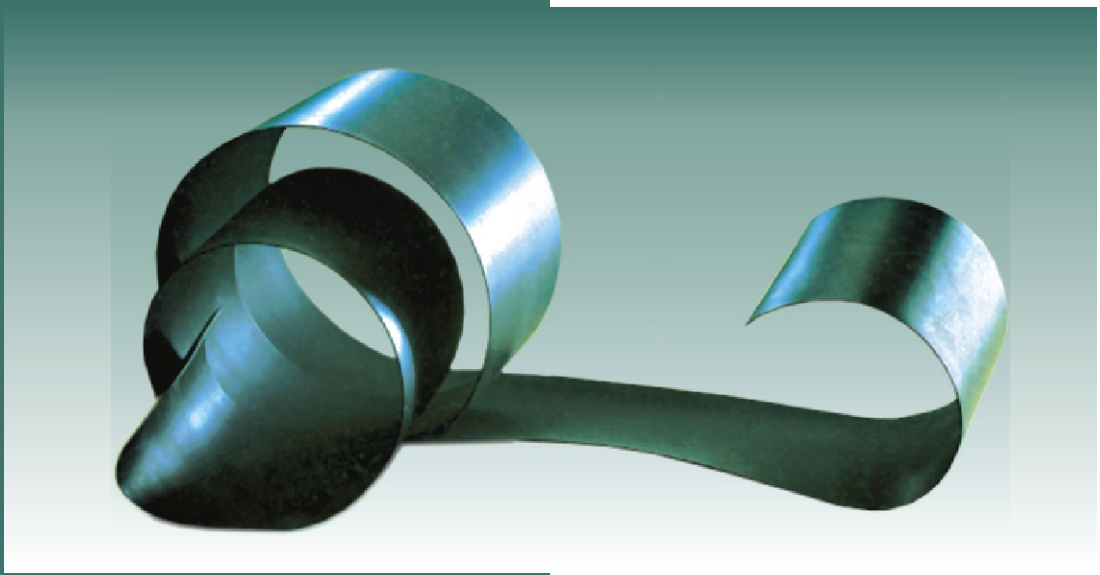
ISO 9001 : 2000 Company

TÜV SÜD

NABCB QM011



LUBRING

The Linear Surface Bearing Material

POLY FLUORO LTD

Machine Tool Bearing Division

What is a LUBRING Slideway?

Slideway is a proprietary formulation of PTFE material impregnated with bronze and friction reducing additives.

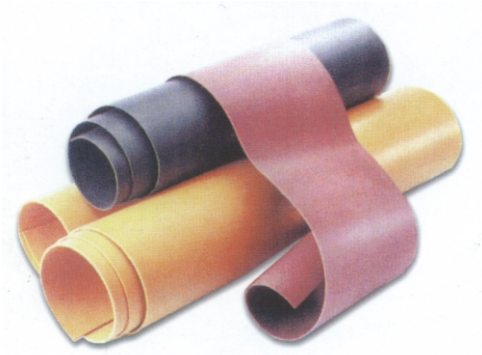
What does a LUBRING Slideway do?

- Reduces friction and wear
- Reduces damage caused by mechanical problems
- Increases accuracy
- Extends machine life
- Saves energy

How does a LUBRING Slideway linear bearing system work?

By providing self-lubricating, low coefficient of friction linear bearing surface between two metal interfaces, LUBRING is normally attached to the moving surface by a bonding method.

The Slideway bearing moves with the work table or tool holder along the steel or cast iron mating of the tool way. The static and dynamic friction of LUBRING is nearly the same on both cast and hardened or soft steel ways.



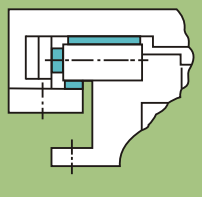
Applications

Planers, milling machines, SPMs, sharpers, horizontal & vertical boring machines, hydraulic & pneumatic power presses, press brakes, all types of grinders, radial drills, automatic screw machines, gear hobbers, gear shapers, multi-spindle automats, broaching machines, CNC machines and machining centres.

LUBRING is the solution you have been looking for to reduce the effects of friction on your machine tool accuracy. It is applicable both for new designs and while rebuilding guideways.

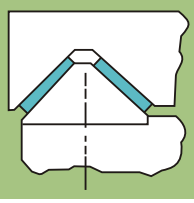
The results conform to the machine tool manufactures' re-builders' specifications.

Combined Linear Guidance



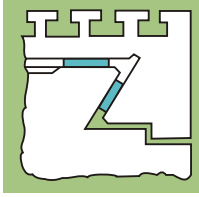
Non-enclosed LUBRING linear bearing material

Prism Guidance



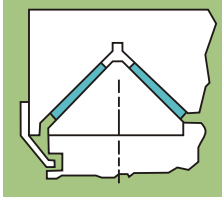
Semi-enclosed LUBRING linear bearing material

Dovetail Guidance



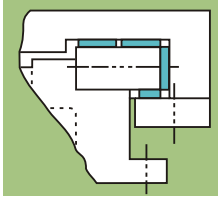
Enclosed LUBRING linear bearing material

Prism Guidance



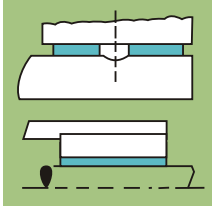
Enclosed LUBRING linear bearing material

Linear Guidance



Enclosed LUBRING linear bearing material

Bearing



Split non-enclosed LUBRING linear bearing material

Non-enclosed LUBRING linear bearing material

Advantages

The advantages of Poly Fluoro LUBRING Slideway tape bearings in comparison with traditional solutions are:

Coefficient of Friction: LUBRING Slideway has the lowest coefficient of friction as compared to other guiding materials. It is self-lubricating with an unlimited shelf life

Wear: LUBRING Slideway has outstanding wear resistance and is recommended for mating with surfaces having a Hardness (BHN) of 180-220 with a Roughness (mm) of Ra<0.6

Contact Pressure: At contact pressures up to 11 N/mm² it is comparable to other guiding materials and additionally has excellent vibration and damping properties

Stability of Dimensions: LUBRING Slideway will not swell or shrink. Its inert property assures stability of dimensions

Mounting: LUBRING Slideway is secured to the metallic guide elements by bonding. The etched side of the tape is easily bondable with a conventional 2-pack industrial adhesive

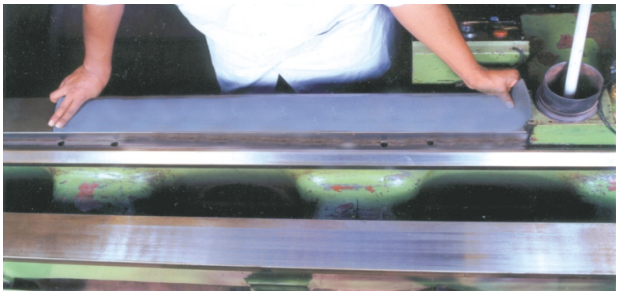
SPECIFICATIONS

PROPERTY	ASTM TEST METHOD	UNITS OF MEASURE	VALUE	
			Metric	English
Tensile Strength to break at 73° F	D 1457	MPa (PSI)	13.7	(2,000)
Elongation to break at 73° F	D 1457	%	168	(168)
Specific Gravity at 73° F	D 792	-	3.1	(3.1)
Deformation under load (73° F, 2000 PSI, 24 hrs.)	Refer to Deformation Graph			
Flexural Strength	D 790	Mpa (PSI)	96.5 (14,000)	
Water Absorption	D 570	%	0	(0)
Coefficient of Linear Thermal Expansion	D 696	m / m °C (in / in / °F)	10.8×10^{-5}	(6×10^{-5})
Working Temperature Range		°C (°F)	-218 +260	(-360 +500)
Limiting PV		MPa-m/min (PSI-FPM)	53	(25,000)
Colour			Blue / Grey	

CHARACTERISTICS

CHARACTERISTICS	DESCRIPTION UNITS	VALUES
1. Coefficient of Friction		
(a) Trace Lubrication	Static	0.073
	Dynamic	0.068
(b) Flooded Lubrication	Static	0.062
	Dynamic	0.059
2. Allowable Bearing Pressure	kgf / cm^2	up to 115
3. Self Lubricity	Yes	
4. Min. Sliding Speed without Stick-slip	mm / min	0.01
5. Vibration Damping Property	Yes	
6. Machinability of Material	Can be milled or ground or scraped	
7. Mating Surface Requirements	Hardness (BHN), Surface Roughness (mm)	180 - 220, Ra < 0.6
8. Availibility of the Material	Thickness (mm)	0.8,1.0,1.6,2.5,3.2 and 4.0
9. Shelf Life	No Limit	
10. Engineering Costs	Extremely Low	

Operating conditions for LUBRING Slideway gibs and other sliding applications	
PV factor	up to 1.7 N/mm^2 x m/s
Specified Load	up to 20 N/mm^2
Sliding Speed	up to 2 m/s
Operating Temperature	from -260° to +260° C



LUBRING SLIDEWAY - Design Parameters and Technical Data

Fig. 1 : Friction as Function of Unit Load
Lubrication Friction : Velocity 2 m/min (6.6 ft/min)
Materials : LUBRING (Scraped)
Cast Iron (Scraped)

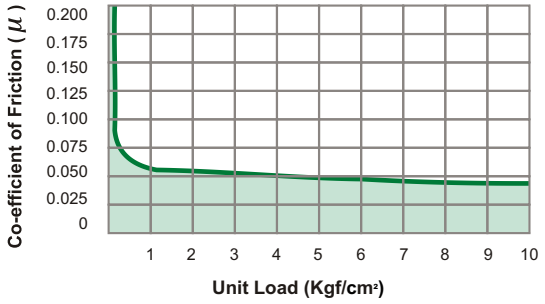


Fig. 2 : Friction as Function of Velocity
Dry Friction : Loading 3.5 kgf/cm² (50 PSI)
Materials : LUBRING (Fresh)
Cast Iron G.S. 55, 264 HB (Ra = 0.47) (19 CLA)

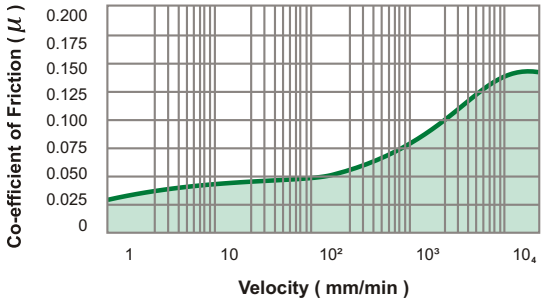


Fig. 3 : Friction as Function of Velocity after 0 Km
Travel : Lubricated with Oil 50 E
Materials : LUBRING (Scraped)
Cast Iron G26, (Ra = 0.8) (32 CLA)

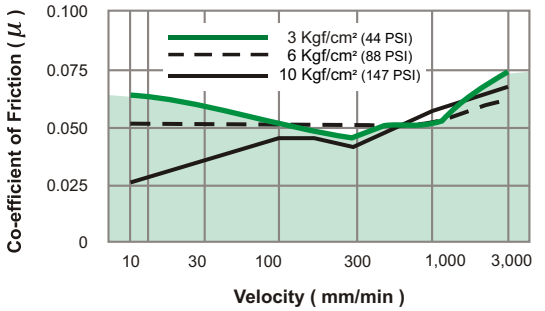


Fig. 4 : Friction as Function of Velocity after 40 Km
Travel : Lubricated with Oil 50 E
Materials : LUBRING (Scraped)
Cast Iron G26, (Ra = 0.8) (32 CLA)

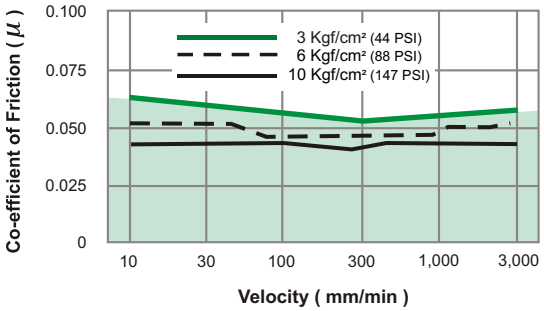


Fig. 5 : Wear as Function of Travel
Lubricated Friction : Loading 6 Kgf/cm² (88 PSI)
Materials : LUBRING (Scraped)
Cast Iron G26, (Ra = 0.8) (32 CLA)

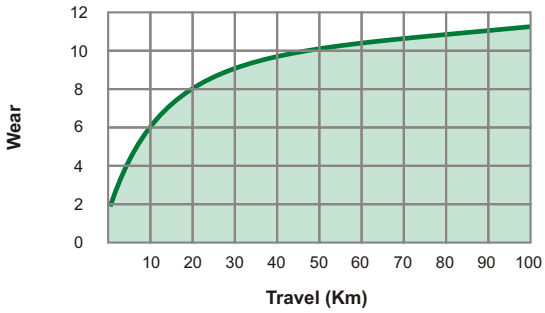


Fig. 6 : Wear as Function of Travel
Dry Friction : Loading 20 Kfg/cm² (293 PSI)
Materials : LUBRING Steel C 60 (Ra =0.8)
Cast Iron G26, (Ra = 0.8) (32 CLA)

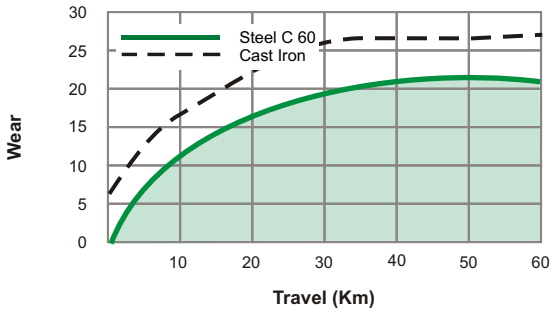


Fig. 7 : Deformation under load (Mpa)

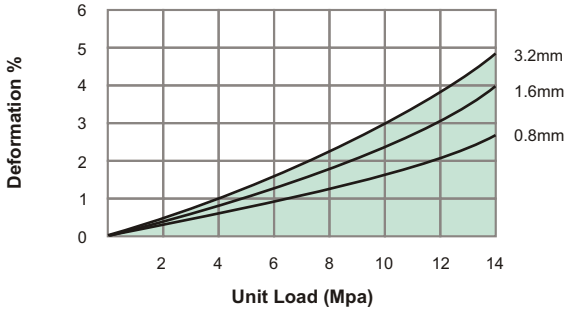
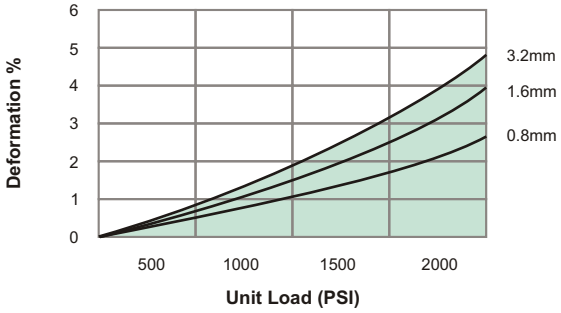


Fig. 8 : Deformation under load (PSI)



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