LOW FRICTION SLIDE BEARINGS

WHY USE SLIDE BEARINGS
When pipe lines / structures are subjected to heat by external means due to difference in day & night temperatures or due to weather changes or due to temperatures of fluids carried in them in the case of pipe lines, they will expand and contract by an amount decided by the geometry / shape and co-eff of thermal expansion of the material used in building them.

By not allowing them to expand and contract freely, severe stresses get induced leading to failures or over loadings.

An sensible & cost effective way of accommodating such expansion is to allow one item to move with respect to another — and this can be achieved by using low friction slide bearings to separate the expanding item from the supporting structure.

It is imperative that slide bearing is designed to keep frictional force to a minimum, to prevent the development of high loads and stresses.

Slide Bearings supplied to Sonia Vihar Project, Delhi Jal Board for use in cross country piping.

WHY USE EASISLIDE BEARINGS?
- They incorporate PTFE — which has a coefficient of friction lower than any other solid material.
- The bearings are designed to achieve optimum performance, by carefully designing bearing pad dimensions to achieve ideal workable compressive stress.
- No routine maintenance required can work completely dry, require no lubrication.
- Designed to withstand a wide range of environmental conditions — operating at temperatures from minus 200°C to plus 150°C and are resistant to a wide range of organic and inorganic chemicals and vagaries of nature.
- Can tolerate some embedment of small particles in the bearing pad without causing failure.
- Compact design — fit into areas unsuitable for other types of bearing.
- Designed for easy on-site installation. No special tools or tackles required
- Long and maintenance free life.
- Operating successfully in a wide range of installations worldwide.
Low Friction Slide Bearings

THE RIGHT MATERIALS

The Slide Bearing standard range uses a PTFE pad (or pads) counterfaced by a larger polished stainless steel plate — the PTFE is bonded to a carbon steel backing plate for attachment to existing steelwork either by means of countersunk bolts or by welding. The stainless steel pad is similarly attached to a carbon steel backing plate. For corrosive environments, units can be supplied manufactured entirely in stainless steel with a PTFE slider pad.

Alternatively, other combinations of material. Different slider materials such as bronze based or Graphite based for High temperature applications are also available.

THE RIGHT CONDITIONS

PTFE is suitable for continuous operation at temperatures up to 150°C — at greater temperatures load bearing thermal insulation material can be used to reduce the temperature of the bearing.

SELECTING THE RIGHT LOW FRICTION SLIDE BEARING

- Decide the style of bearing required and check that the imposed load is within the recommended operating load range of the bearing assembly.
- The standard bearing may be used at loadings below the recommended minimum, but an increased coefficient of friction will result.
- For loadings in excess of the recommended maximum, please state the load capacity required, and we will design an assembly to suit.
- Select the appropriate axial and lateral movement ranges to accommodate the maximum anticipated movements.
- Where the bearing gives a choice of height dimensions, these should be specified.
- If no standard bearing suits your application, please contact our design service with your requirements.

THE RIGHT BEARING SIZE

The PTFE pad is sized based on allowable bearing pressure at the working temperature or ambient temperature. PTFE bearing pads will not function well at low bearing pressures and co-eff of friction may increase defeating the purpose of providing them. Bearing pressures can be read off the curve below, but as a thumb rule 60 kg / cm² at normal ambient is recommended.

The inputs for calculating will be the load, the movement in transverse and axial directions, the ambient temperature and the space available to accommodate the bearing. Sometimes filled PTFE slide bearings with a higher bearing pressure may be used in order to reduce size and operating at higher temperatures. Typical fillers are 25% Glass or 60% Bronze.

The size of the counterfacing stainless plate (AISI SS304 mirror finished on one side) is calculated by adding 2 x expected movements to the size of the bearing PTFE pad + 25 mm over travel.

THE RIGHT DESIGN

Low Friction Slide Bearings are designed and produced by Pipe Hangers & Supports Pvt Ltd. We have the expertise and experience to design bearings for larger loads or movements or those with special operating requirements (Whether you need a bearing for a larger load or movement than those covered by our standard range, or even to a totally different style, our experienced team can design a) to meet your needs exactly. So whatever your slide bearing requirements, call PHSPL and ask for Low Friction Slide Bearings.
The SL07 PTFE/Stainless Steel slide bearing is suitable for a wide range of sliding applications. If stability of the supported item is a consideration, a number of SL07 bearings may be used. Alternatively, larger bearings with split PTFE pads (either strips or discs) can be designed and made to suit particular requirements. PTFE partially embedded in steel substrate and bonded can also be supplied to counter harsh environments. The standard bearing thickness (C) should be suitable for most applications. 

**ES07**

**ES07DS**

Alternative thicknesses can be supplied to order. Care should be taken if reducing ‘C’ that the attached structure has sufficient local strength. The standard bearing is designed for attachment by welding. Bearings for attachment by bolting can also be supplied. SL07DS slide bearing design incorporates a dust seal for use where significant amounts of dust or other contaminants are present.

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<th>SIZE</th>
<th>RECOMMENDED LOADING AT 25°C (kgf)</th>
<th>A (Sq.)</th>
<th>C</th>
<th>B mm</th>
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**RANGE 1 = +/-12.5 mm MOVEMENT**

**RANGE 2 = +/-25 mm MOVEMENT**

**RANGE 3 = +/-37.5 mm MOVEMENT**

**FOR SIZE 16000 AND ABOVE, PARTICULAR CARE SHOULD BE TAKEN TO ENSURE THAT THE SLIDE BEARINGS ARE MOUNTED ON A BACKING STRUCTURE OF ADEQUATE STRENGTH. TYPICAL SELECTION:**

**ES07-8000 — RANGE 2 X RANGE 2.”**

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**Slide bearings can be used as stand alone or in conjunction with spring hangers or pipe shoes**

15NB — 150NB

175NB — 400NB

450NB — 1000NB