AFT Fluorotec

Incorporating SW Plastics

PTFE Slide Bearings Selection Guide

What We Need to Know

Our PTFE slide bearings are custom designed and manufactured to suit each specific project.

The projects we have been involved in just over the last 12 months is vast, including the Olympic stadium and village, Edinburgh's new Haymarket train station, Ashton Gate Stadium in Bristol, The National Performance Centre for Sport at Heriot Watt University (pictured below) and dozens of less high profile supermarkets, schools and car parks.

As a basis for quoting for PTFE slide bearings, the following information should be supplied to us.

Structural load

The loadings in each joint and location of the slide pad are critical considerations. Reinforced PTFE can accommodate loads of 510 kg/cm2 and virgin PTFE can accommodate loads of 142 kg/cm2.

Quantity and placement

How many slide bearings does your application need and where should these be placed to ensure the ongoing optimum function?

Temperature conditions

What temperature extremes will your application have to cope with? PTFE is used in the manufacture of slide bearings due to its wide range of operating temperatures -250°C to +260°C. The operating temperature range determines the type of adhesive to be used.

Configuration

Slide bearings come in many different configurations which are dependent on a number of factors in each individual construction project (more about this on page 3).

Getting the dimensions right first time is critical to the successful installation and ongoing reliability and stability of the structure they've been fitted to.

Fixing method

PTFE slide bearings can be fixed to the installation by full welding, tack welding, mortar embedment or bolting.

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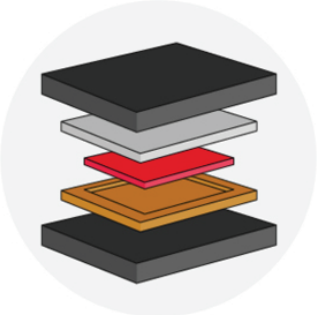
Other considerations

Factors such as acoustic/vibration damping, angular misalignment, protection from the elements and selecting the right steel type for the backing plates are other important points to take into account.

If you don't have all of this to hand, don't worry. Our experience in designing and manufacturing PTFE slide bearings means we will be able to help you if you let us know what application your bearings are for.

Typical Slide Bearing Configuration

While many slide bearing features such as size and load bearing capacity will be bespoke, we do have a number of typical configurations. See example is below:



CONFIGURATION KEY

- Reinforced PTFE / Virgin PTFE
- Polished stainless steel plate
- Recessed carbon steel plate / stainless steel plate
- Existing substrate

PTFE SLIDE BEARING – RECESSED

TYPICAL CONFIGURATION

- **Top Sliding Plate** - 3mm thick polished stainless steel plate.
- **Bottom Sliding Plate** - 4mm thick Reinforced PTFE / Virgin PTFE bonded into a 2mm deep recess in a 6mm thick carbon steel plate / stainless steel plate.
- **Method of Installation** - Tack welding, full welding, bolting, mortar embedment.
- **Load Capacity** - Reinforced PTFE: 50 MPa (510 kg/cm2), Virgin PTFE: 14 MPa (142 kg/cm2).

View more of our typical slide bearing configurations
www.fluorotec.com/products/ptfe-slide-bearings/typical-configurations

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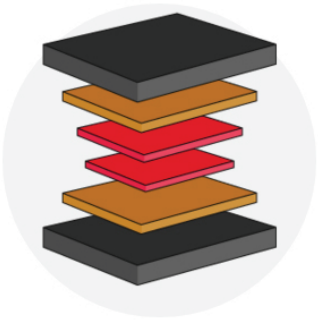

CONFIGURATION KEY

- Reinforced PTFE / Virgin PTFE
- Carbon steel plate / stainless steel plate
- Existing substrate

PTFE SLIDE BEARING

TYPICAL CONFIGURATION

- **Top Sliding Plate** - 2.5mm thick Reinforced PTFE / Virgin PTFE bonded to a 3mm thick carbon steel plate / stainless steel plate.
- **Bottom Sliding Plate** - 2.5mm thick Reinforced PTFE / Virgin PTFE bonded to a 3mm thick carbon steel plate / stainless steel plate.
- **Method of Installation** - Tack welding, full welding, bolting, mortar embedment.
- **Load Capacity** - Reinforced PTFE: 18 MPa (184 kg/cm2), Virgin PTFE: 7 MPa (71 kg/cm2).

View more of our typical slide bearing configurations
www.fluorotec.com/products/ptfe-slide-bearings/typical-configurations

When it comes to PTFE slide bearings, our technical expertise in creating custom bearings is what sets us apart.

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Technical Data

If you're looking for technical advice or a quote for PTFE slide bearings, call us on 01992 515880.

REINFORCED PTFE		VIRGIN PTFE	
PRODUCT DESCRIPTION:			
A reinforced PTFE material that has a low coefficient of friction, high creep resistance, high load bearing capacity and high wear resistance. Specifically developed for slide bearing and skidway applications.		A PTFE material that has a low coefficient of friction and high chemical inertness. Suitable for a very wide range of applications that require these characteristics.	
MATERIALS OF CONSTRUCTION:			
Polytetrafluoroethylene Functional Reinforcing Agents		Polytetrafluoroethylene	
COLOUR:			
Black		White	
OPERATING TEMPERATURE RANGE (CONTINUOUS SERVICE):			
-250°C to +260°C		-250°C to +260°C	
DEFORMATION UNDER LOAD, CD (BASED ON ASTM D621A):			
24 hr @ 230C, 14 MPa 1 hr @ 1500C, 5 MPa Permanent	1.0% 2.1% 0.8%	24 hr @ 230C, 14 MPa 1 hr @ 1500C, 5 MPa Permanent	5.1% 11.1% 7.0%
COMPRESSIVE STRENGTH (ASTM D695):			
1% Strain 5% Strain 0.2% Offset	10.8 MPa (1560 psi) 30.0 MPa (4350 psi) 18.2 MPa (2640 psi)	1% Strain 5% Strain 0.2% Offset	4.0 MPa (580 psi) 11.5 MPa (1670 psi) 9.0 MPa (1300 psi)
MAXIMUM PRESSURE (P) NON-RECESSED DESIGN:			
Up to 18 MPa		Up to 6.9 MPa	
MAXIMUM PRESSURE (P) RECESSED DESIGN:			
Up to 50 MPa		Up to 13.7 MPa	
DRY COEFFICIENT OF FRICTION:			
0.03 - 0.07		0.04 - 0.07	
FLAMMABILITY (ASTM D635):			
Self - Extinguishing		Self - Extinguishing	
WATER ABSORPTION (ASTM D570):			
0.0%		0.0%	

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