

AFT PTFE Slide Bearings

AFT Fluorotec - your complete source for PTFE sliding systems.

AFT Fluorotec design and manufacture PTFE slide bearings and skidway plates. We offer a specialist service based on many years experience in the use of PTFE slide bearings and skidway plates.

AFT Fluorotec PTFE slide bearings and skidway plates are manufactured in house using our many years experience working with PTFE since its introduction into the UK industrial market.

PTFE is a fluoroplastic, and is manufactured and sold under various trade names, such as Teflon® and Fluon®. The team at AFT Fluorotec has over 40 years experience in fluoropolymer technology, and has in-house capabilities to manufacture and chemically etch PTFE. Machining, hot cure bonding and finishing work are all done in our factory.



AFT Fluorotec PTFE slide bearings are used to solve the problems of movement caused by temperature change and differential material thermal expansion, settlement and natural forces encountered by high winds and even seismic activity.

Typical applications include pipe lines, heat exchangers, pressure vessels, storage tanks, industrial machinery, buildings and bridges.

An AFT Fluorotec PTFE slide bearing normally comprises of an upper element and a lower element, which operate by sliding against one another. The upper element is generally larger than the lower element by the amount of the anticipated movement. This ensures that the lower element is subjected to uniform load throughout motion and excludes foreign matter from the sliding interface.

AFT Fluorotec manufactures a range of slide bearings configurations although each is designed to suit the specific application. A typical slide bearing element consists of 2.5mm thick AF001 or AF115 PTFE materials hot cure factory bonded under controlled conditions of temperature and pressure to a 3mm thick steel backing plate for welding to the installation. Alternative material thicknesses can be supplied.

Substantial deviations from parallel or rotational movement of the structure can be accommodated by incorporating an elastomeric element within the PTFE slide bearing. For special considerations or difficult conditions, please contact AFT for assistance.



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Different adhesives can be used in the manufacture of PTFE slide bearings which means they are able to operate through temperature ranges from -195°C (-320°F) to 287°C (550°F).

AFT Fluorotec PTFE slide bearings employ either AF001 (virgin PTFE) or AF115 (a specially compounded reinforced PTFE) at the operating surface. AF001 and AF115 are capable of accommodating loads of 70 kg/cm^2 and 140 kg/cm^2 respectively. The load bearing capacity of these materials can be increased by containing them in a recessed steel backing plate.

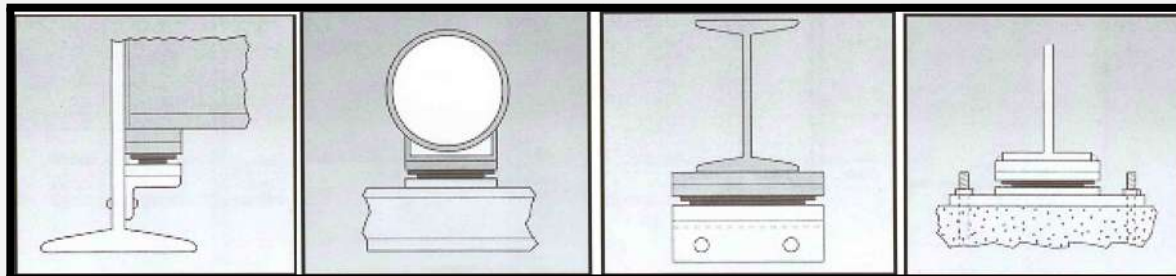
Installation of AFT Fluorotec PTFE Slide Bearings:

AFT Fluorotec PTFE slide bearings can be fixed to the installation by full welding, tack welding, mortar embedment or bolting. The appropriate slide bearing configuration should be selected to suit the method of installation. Care should be taken to adequately protect the surface of the PTFE during installation.

AFT Fluorotec PTFE Slide Bearings Selection Guide:

- Calculate the overall load of the structure as this will indicate the total area of the slide bearing required at an appropriate temperature and pressure.
- Consider the function and rigidity of the structure to determine the quantity and positions of the slide bearings.
- Take account of any unusual conditions that will affect the slide bearings during operation, such as the temperature at the sliding interface, angular misalignment and the need for acoustic or vibration damping.
- The type of adhesive used is determined by the temperature range at which the slide bearings will be operating. We ask therefore that this information is specified on all enquiries.
- Determine the most suitable method of fixing the slide bearings to the installation.
- Consider the operating environment and select the type of steel for the backing plates accordingly.

If you have any difficulty in specifying your PTFE slide bearing please contact AFT for assistance.



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Benefits of AFT Fluorotec PTFE Slide Bearings

- PTFE has the lowest coefficient of friction of any solid material and there is no stick / slip action.
- Operating temperature ranges from -195°C (-320°F) to 287°C (550°F).
- The life of PTFE is indefinite as it is unaffected by chemicals and weather.
- Maintenance is not required. Capable of operating completely dry as PTFE will never cold weld to itself.
- Ease of installation.
- Shear value of the bond exceeds that of the PTFE.
- Far less bulky than alternative assemblies.
- PTFE is unaffected by water as the moisture absorption is less than 0.01%.
- Not subject to fatigue failure.
- Provides electrical and thermal insulation thereby preventing galvanic corrosion and reducing heat loss.
- Vibration dampening.
- Able to absorb small particles without increasing the coefficient of friction.
- PTFE is chemically inert.
- Able to accommodate some misalignment.



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All information is based on typical test results performed under specific conditions and limited sample size. This does not represent a legally binding guarantee of certain properties or the suitability for specific applications. All information is provided in good faith at time of print.

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