



FLUOROCARBON

Technical Advantages of Fluoroglide® PTFE Slide Bearings

- PTFE has the lowest coefficient of friction of any known solid 'engineering material' including lubricated metal
- There is no stick-slip action
- Fluoroglide® bearings have near infinite life, since chemicals and weather have no effect on PTFE - moisture absorption is less than 0.01% even under icing conditions or immersion and the material is chemically inert
- No maintenance is required. Fluorinoid® PTFE will never cold weld to itself and therefore requires no lubrication
- Fluoroglide® bearings are easily installed, either pre-assembled or on-site
- Fluoroglide® PTFE bearings are less bulky than alternative assemblies
- There is no possibility of fatigue failure
- Electrical and thermal insulation minimise galvanic corrosion and heat loss
- Vibrations are dampened
- Small particles which may become embedded do not cause binding of the surfaces
- Fluoroglide® slide bearings can accommodate some misalignment in construction without setting up stress corrosion along a leading edge, as can occur in conventional bearings



Fluoroglide® PTFE Slide Bearings and Pipe Supports

Fluoroglide® slide bearings are superior to conventional expansion plates, rollers and rocker arms, accommodating expansion, contraction and other reciprocating motions of any structure that moves as a result of thermal, seismic or differential forces.

Such bearings operate at high loads and low speeds, and it is under these conditions, together with its no stick-slip and anti weathering characteristics, that the self lubricating properties of Fluorinoid® PTFE are at a maximum.

Fluorocarbon Company Ltd designs and manufactures Fluoroglide® slide bearings in a range of configurations using either virgin or glass filled Fluorinoid® PTFE as the bearing material. Each bearing is designed specifically to suit the application.

Applications

- Expansion movement in pipelines, heat exchangers, concrete decks or pipes
- Cryogenic, vibration and acoustic affects on pipelines
- Steam heated pipelines on North Sea oil production modules
- Oil, water & gas transportation above ground pipe mains
- Buildings and bridges
- Pedestrian walkways

Fluorinoid® PTFE is manufactured and etched within the Fluorocarbon Group. Surface preparation of steel, machining, controlled bonding and painting are all Fluorocarbon proprietary processes ensuring a quality product.



The Slide Bearing

Normally, a slide bearing consists simply of two pads of PTFE sliding against each other. The basic element is usually 2.5mm Fluorinoid® FL100 PTFE or FL129 reinforced PTFE sheet, factory bonded onto a 3mm carbon steel backing plate for straightforward field installation by welding or bolting.







For very high pressure applications, a single pad may be used to counter face a polished stainless steel plate. The assembly is designed so that one pad (generally the top pad) is larger than the other by an amount in excess of the expected movement, so keeping the contact area constant throughout the cycle of motion.

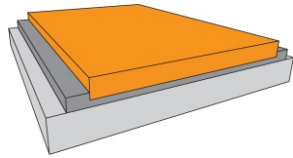
For more information click here

Typical Recommended Configurations (Other designs available on request)

- Specialised bonding systems are available for temperature outside the below ranges
- Other fabrications are available on request
- Backing plates - generally carbon steel but any rigid structural material or free issue material
- Surface sliding plate - mirror polished stainless steel grade 304 and 316

Material Key

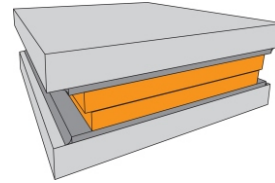
	Existing Substrate		Fluorinoid® FL100 PTFE/FL129 PTFE
	Carbon / Stainless Steel		Thermal Insulator
	Elastomer		Concrete Substrate



FC65-MS125T Recessed Bearing

6.0mm PTFE pad contained in a recessed backing plate, finished for tack welding, full welding or bolting. Counterfaced by a larger, mirror finished stainless steel plate.

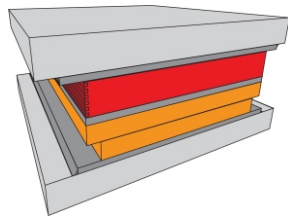
Load capacity: up to 280kg/cm²



FC 2530-MST Tack Weld Bearing

2.5mm PTFE pad bonded to 3mm backing plate for tack welding. Welding lip surrounding PTFE.

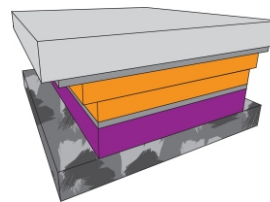
Load capacity: up to 140kg/cm²
Temperature range: -30°C to +120°C



FC 2530-MS250TI Thermal Insulation Bearing

Used when the PTFE temperature could exceed +180°C. 2.5mm PTFE top pad bonded to 3mm backing plate, 25mm thermal insulator (Fluorex®) and 3mm mounting plate for tack welding or bolting. 2.5mm PTFE bottom pad bonded to 3mm backing plate for welding or bolting.

Load capacity: up to 140kg/cm²
Temperature range: -30°C to +120°C



FC 2530-SSVP125 Anti-Vibration Bearing

2.5mm PTFE pad bonded to 3mm backing plate for tack welding. 2.5mm PTFE bottom pad bonded to 12.5mm anti-vibration pad. Held in place by mechanical friction.

Load capacity: up to 70kg/cm²
Temperature range: -30°C to +120°C

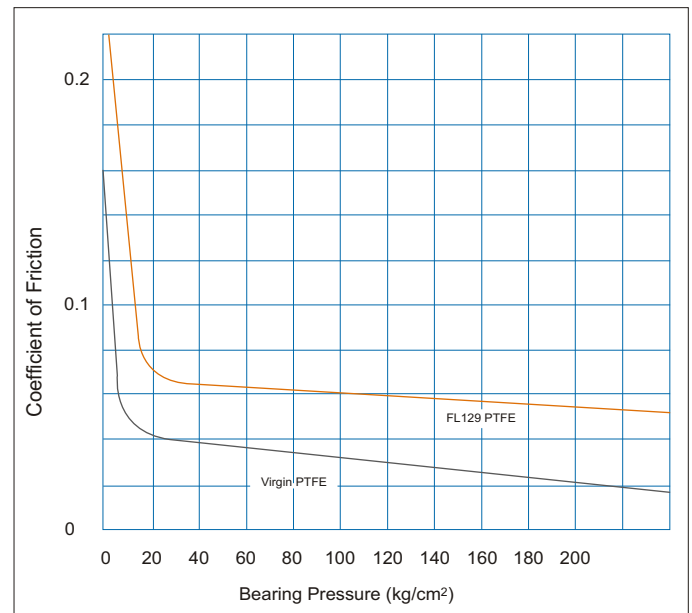
Typical Properties Of Fluorinoid® Materials

	FL100 Virgin PTFE	FL129 Reinforced PTFE
Specific Gravity	2.14 – 2.18	2.19 – 2.27
Tensile Strength MPa	20 – 28	14 – 20
Elongation %	200 – 350	160 – 300
Compressive Modulus MPa	415	770
Hardness Shore D	50 – 60	60 – 65

Coefficient of Friction: Effect of Load

The coefficient of friction of PTFE materials is dependent on many variables, including pressure, sliding velocity and temperature. A design coefficient of friction of 0.1 for unfilled PTFE or 0.12 for reinforced PTFE will give a significant margin of safety when all operating conditions cannot accurately be predicted, but the figures in practice will normally be considerably less.

NB: Fluorocarbon is an approved manufacturer of specific grades of PTFE to the standards required by EN1337 pt 2. All long term testing of Coefficient of Friction at a range of temperature and travel (11000mtrs) to check wear was under taken by Stuttgart Engineering



Contact Us

For more information on our Fluoroglide® slide bearings and pipe supports or for advice on your specific configurations please contact our **design & technical engineers** today.

Head Office

Fluorocarbon Company Ltd
Caxton Hill
Hertford
Herts
SG13 7NH
United Kingdom

Tel: +44 (0)1992 550731
Fax: +44 (0)1992 584697
Website: www.fluorocarbon.co.uk
Email: info@fluorocarbon.co.uk

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