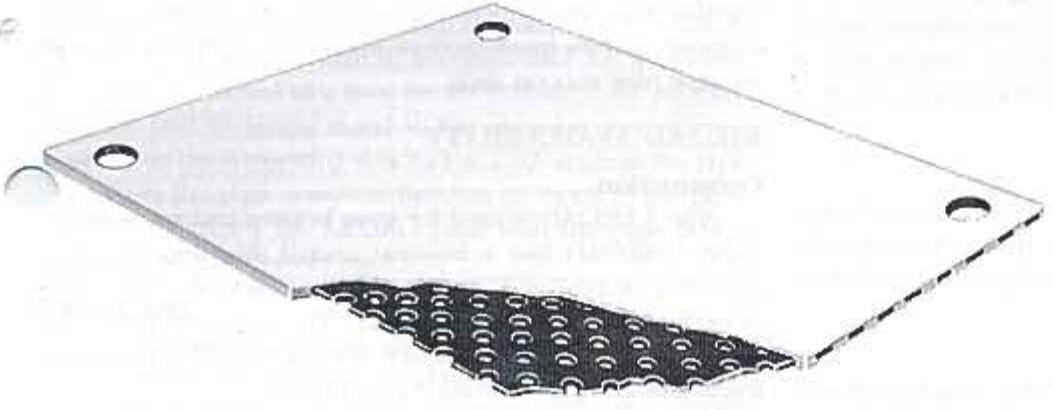
Riload®

PTFE Bearing Pads

for Pipe Slides, Equipment Supports, Architectural and Bridge Applications



Riload Bearing Pads Provide These Distinct Benefits:

- Excellent sliding properties with high strength and rigidity.
- Reliability in virtually any environment to 400°F.
- Non-weathering, non-aging, corrosion resistance.
- Simple, easy installation requiring no adhesives or bonding agents.
- Long life with little deterioration and freedom from lubricant washout.
- Economical.

PureFlex

RILOAD

RILOAD[1] is a bearing material which is made by molding TFE on each side and completely through a sheet of perforated stainless steel. Riload combines the sliding properties of TFE with the strength and rigidity of steel.

ADVANTAGES

Low Friction–High Load

The RILOAD surface provides a coefficient of friction as low as 0.02. The stainless steel core provides rigidity and uniform strength in all directions resisting "cold flow" and stretch of the TFE to the point that RILOAD bearing pads can carry loading in excess of 5,000 psi.

No Lubrication

RILOAD bearing pads are non-lubricated. Unlike "permanently lubricated" or "prelubricated" bearing materials, RILOAD cannot suffer deterioration, contamination, or washout of lubricant.

Almost Indestructible

RILOAD is unaffected by corrosives, solvents, temperature, (up to +400°F) moisture, sunlight, icing conditions and physical shock. The complete interlocking of the TFE to its metal reinforcement eliminates the use of any adhesive in the construction of RILOAD and makes RILOAD independent of the quality variables and the environmental limitations of a cemented construction.

Positive Fastening

RILOAD can be positioned positively by conventional mechanical means such as screws, bolts, rivets, masonry nails or tack welds. This eliminates the potential problems inherent in cemented bearing pads.

Economical

RILOAD'S initial cost is low because it is a molded sheet, requiring no machining; its installation cost is low due to the ease with which it can be fastened; and RILOAD maintenance costs are nil, because it requires no lubricant and is almost indestructible.

RILOAD APPLICATIONS

Structural Bearing Pads

RILOAD bearing pads are used to accommodate horizontal movement due to expansion, contraction and vibration in many types of buildings, bridges, and other structure RILOAD'S low and unvarying friction minimizes the forces imposed on support members, while its positive fastening and permanence provide assurance of satisfactory service for the life of the structure.

Equipment Supports

Storage tanks, heat exchangers, pumps, compressors, and many other types of chemical refinery and general industrial equipment rest on RILOAD equipment supports. In these applications, RILOAD accommodates equipment movement in the most adverse environments with no maintenance and no diminishing of its bearing abilities.

Pipe Slides

Slides are used to support process, steam, refrigeration, natural gas and other types of piping which must move due to expansion or vibration. In this application, RILOAD bearings allow the piping system to be designed for unlimited horizontal movement against minimum restraining force. This, together with its temperature tolerance, its resistance to the elements and its freedom from maintenance, makes RILOAD an ideal pipe support slide.

RILOAD AVAILABILITY

Construction

Type 3 RILOAD is used for most bearing pad applications. Type 3 RILOAD has a nominal overall thickness of 3/32", consisting of 1/32" of TFE molded on each side of a .030" sheet of perforated type 304 stainless steel. The composition used for type 3 RILOAD is black in color and contains 15% glass-reinforcement for optimum bearing properties.

RECOMMENDED ALLOWABLE MAXIMUM LOAD

The adjacent curve illustrates the recommended maximum allowable load, based on a maximum of .002" allowable deformation. It should be noted that the configuration of the Riload pad permits these limits to be temporarily exceeded by a factor of as much as four without failure, whereas competitive designs may suffer catastrophic failure at such loads.

Sizes and Shapes

RILOAD is available in 3"x30" strips, commonly used for pipe slides, and 15"x19" sheets, used mainly for structural and equipment bearings. These RILOAD sheets can be sheared to size and formed into curved plates or bushings as required.

RILOAD pads can be furnished with any size of fastening hole. The standard location for the corner holes in rectangular pads is 1" from each edge.

RILOAD strips 3" and narrower are usually supplied with a single row of holes down the centerline, on 8" or shorter centers.

BEARING DESIGN

Configuration

A RILOAD bearing set consists of two RILOAD pads sliding against one another. This provides complete inertness of bearing surface, thereby assuring constant bearing properties for the life of the installation.

In structural and equipment support bearings where the movement is relatively small, it is common practice to use rectangular pads dimensioned to provide adequate bearing area.

In pipe slide applications, where the movement may involve appreciable sidewise as well as lengthwise movement, a RILOAD pad large enough to accommodate the lengthwise movement is attached to a shoe on the bottom of the pipe and a second pad of length equal to the sidewise movement is mounted on the supporting structure at a 90° angle to the pipe. This allows the pipe complete freedom to move in the plane of contact between the RILOAD pads with the pipe weight supported by the area of contact.

Bearing Area

To determine the bearing area for installations where the bearing surface temperature is below 300°F, a design load in the range of 100 to 500 psi is recommended. This usually results in an economical bearing size and yet is sufficiently conservative to handle any unanticipated load. Where unusually heavy loads must be supported or where higher temperatures are encountered, RILOAD bearings can be designed to support loading in excess of 5000 psi or to operate at temperatures up to 400°F.

Friction

The average RILOAD bearing pad installation has a coefficient of friction falling between 0.02 and 0.08 depending on the unit load, temperature, flatness and alignment of the bearing surfaces. We recommend that for design calculations a coefficient of 0.1 be used.

Fastening Methods

RILOAD pads are usually held in position by flat-head machine screws. Self-tapping screws, pull or drive rivets, Ramset fasteners and many other mechanical fastening devices can also be used.

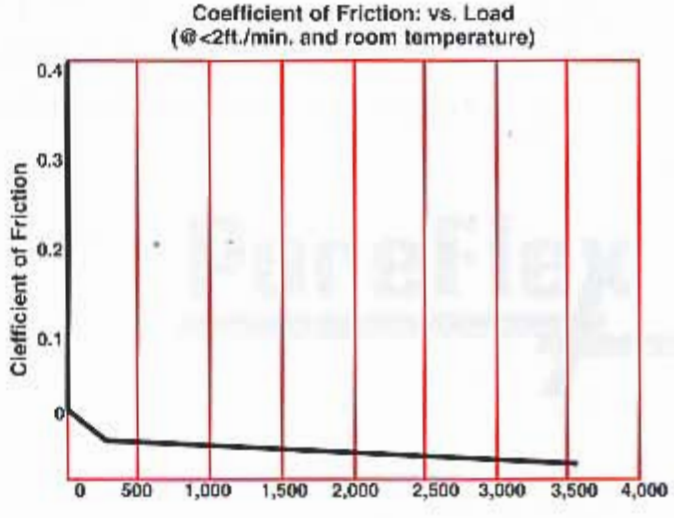
Rectangular pads are usually held down at the four corners. Very large pads or long strip pads should have intermediate fasteners spaced on approximately 8 inch centers.

Where the fastener is within the area of sliding, the head must be recessed. This can be done by mounting the RILOAD pad on a support member provided with countersunk holes and pulling the RILOAD down into each countersink by means of a flat head fastener.

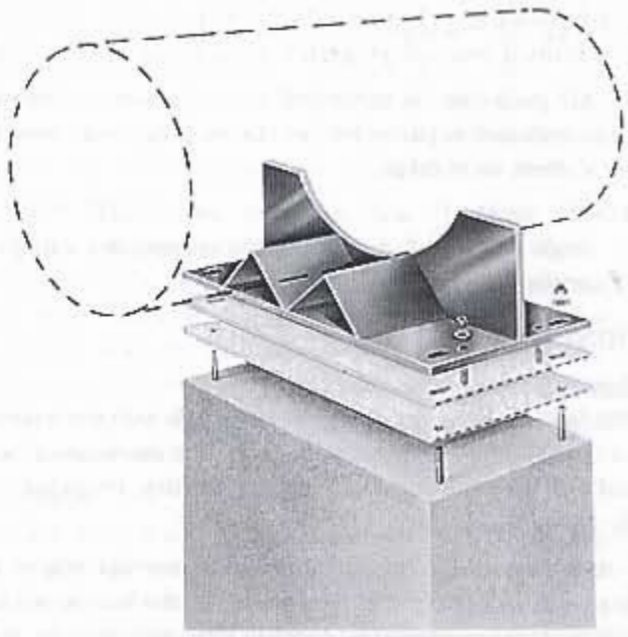
[1] PATENT 2,975,093

*Riload® is a registered trademark of PureFlex

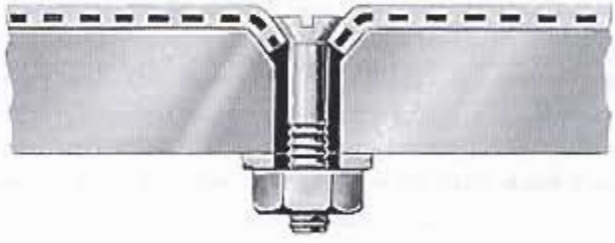
Mechanical Properties of Riload TFE		
Property	**Mold Direction**	**Cross Direction**
Min. Tensile Strength (psi)	1,800	2,000
Tensile Elongation (%)	180	200
Compressive Strength (psi) @ 0.2 Yield Stress	1,600	1,150
Compressive Modulus (psi)	118,000	100,000
Flexural Strength (psi) @ 0.2 Yield Stress	–	1,000
Flexural Modulus	–	99,000
Hardnes (Shore D)	60-70	58-68
Physical Properties of Riload TFE		
Thermal Conductivity	2.52	
Specific Gravity	2.18	
Wear Factor	11	



TYPICAL USAGE



FASTENING METHODS



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