

## P54 WEAR STRIP

### MATERIALS PROPERTY DATA SHEET

**Description:**

Kamatrics P54 Wear Strip material is a thin sheet self-lubricating bearing material engineered to provide exceptional wear and abrasion resistance. P54 is comprised of a resilient thermoset resin matrix with synthetic fibers in a laminate construction for strength and durability. As a wear strip, it is designed to be bonded onto surfaces which are subjected to light to medium duty rubbing pressure, or as a fretting resistant barrier.

**Typical Applications:**

P54 Wear Strip is designed for applications where standard off-the-shelf wear resistant plastics fall short in performance. It can eliminate metal-to-metal wear and fretting damage on surfaces exposed to excessive rubbing or scuffing. Use the material where impact resistance is required, under edge loading, in heavy abrasion applications, and where gross amounts of contaminants can be expected.

**Dimensional Constraints:**

Standard P54 Wear Strip material is available in cut sheets, strips, washers and custom cut shapes – **contact Kamatrics for size limitations**. The material is offered in standard grades as follows:

P54 Wear Strip Grade	Thickness, inches (mm)
Light Duty <sup>1</sup>	.020 (.5) <sup>3</sup> ◇
Medium Duty <sup>2</sup>	.032 (.8) <sup>3</sup> ◇
Heavy Duty	.060 (1.5) ◆
Plate Stock‡	.120 (3.0) ◆

**Physical Properties:**

Operating Temperature: -65°F to 250°F (-54°C to 120°C)  
 Density: .0466 lb/in<sup>3</sup> (1.29 g/cc)  
 Hardness: 80 Shore D  
 Maximum Static Bearing Load: 50,000 psi (345 MPa)  
 Compressive Modulus: 150,000 psi (1,034 MPa)  
 Maximum Dynamic Bearing Load: 20,000 psi (138 MPa)  
 Material Color: Gray

<sup>1</sup>Minimum bend radii = 1/8 ref.  
<sup>2</sup>Minimum bend radii = 1/4 ref.  
<sup>3</sup>Can be cut with shop shears/utility knife to desired shapes  
 ‡Can be mechanically retained by bolting/rivets, etc.  
 – contact Kamatrics Engineering  
 †Custom shapes and sizes available upon request  
 – contact Kamatrics Marketing.  
 ◇ Approximate Tolerance = +.006/- .006  
 ◆ Approximate Tolerance = +.008/- .008  
 \*Peel ply = Approximately .003 in. thick

**Wear Properties:**

A smooth stainless steel button, 1/2" diameter, was rubbed back and forth over a .200" long path against a sample of P54 Wear Strip. Travel speed was 8"/min for 180,000 cycles. Wear and friction were measured at various loads. Test values for UHMWPE and unfilled acetal are shown for comparison.

**Chemical Resistance:**

P54 Wear Strip is not affected by the following chemicals: Phosphate Ester Hydraulic Fluid (Skydrol), MIL-T-5624 Turbine Fuel Grade JP-4, MIL-L-7808 Lubricating Oil, MIL-H-5606 Hydraulic Oil, MIL-A-8243 Anti-Icing Fluid, MIL-H-83282 Hydraulic Fluid, Fresh Water, Salt Water.

**Bonding Procedures:**

P54 Wear Strip comes with a removable woven nylon peel-ply on one surface to protect the bonding surface from dirt and debris. With the peel-ply removed and the back surface exposed, the P54 Wear Strip is prepared for bonding onto a suitable surface. A room-temperature curing structural epoxy adhesive is recommended for bonding. The following adhesives show good compatibility with the chemicals listed above: Hysol EA9460, EA9309, EA9394, and EA9396 (Loctite), Scotchweld 460 (3M Co.), Araldite 2011 (Huntsman). Follow the manufacturer's suggested procedures for maximum adhesion to the mating surface.

**Product Qualification:**

P54 wear strip conforms with various customer specific self-lubricating wear strip material specifications. Please inquire with Kamatrics engineering regarding other customer-specific requirements.

