

Specific Gravity

Science has found it necessary to give every material a *specific gravity*. For solids and liquids, specific gravity is the ratio of the density of a material to the density of water. (with water being 1)

Since water is the standard, materials with a specific gravity GREATER than 1, **SINK** in water. Materials with a specific gravity LESS than (or equal to) 1 **FLOAT** in water.

WEAR Properties

There are some properties that affect most of our products more than the previous structural properties. Wear properties are indicators of how a material will wear, or how they will perform under a load (stress).

Once you have made the determination that an application requires “WEAR PROPERTIES”, you need to concern yourself with wear performance.

Wear performance is expressed as:

PV – Pressure and Velocity

K – Wear factor

To understand why PV is important, try this:

Rub your hands together. Notice how they have gotten warm?

Press your hands together HARDER. Did they get warmer when you increased the pressure?

Rub FASTER. Are they hotter now that you have increased the velocity? Did you remove any skin in the process?

Bearing operating temperature and wear will be PROPORTIONAL to the pressure x velocity (PV). Using material above its PV capability can lead to bearing failure through melting, or excessive wear.

“K” is a “factor”.

K lets you compare materials to see which will wear more/faster. The higher the K factor the faster the material will wear under load and speed (PV).