ENGINEERED COMPOSITES FOR YOUR WORLD

POLYGON® COMPANY

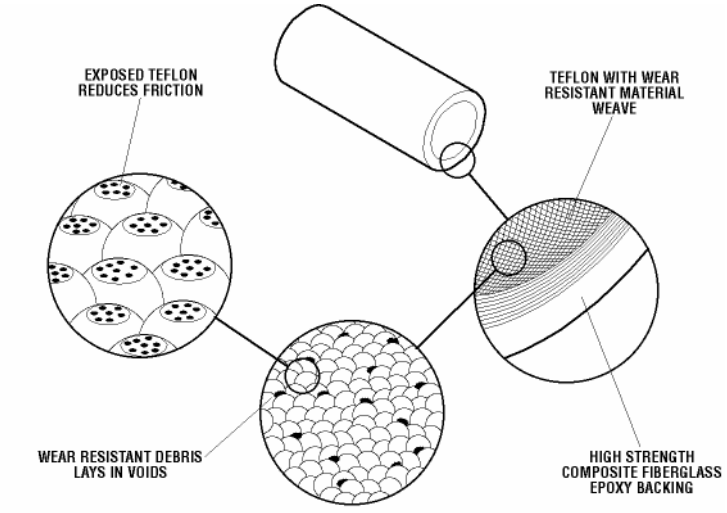
Q: *"What Does Self-Lubrication Mean?*

A: For Polygon's PolyLube™ fiber-series self-lubricating bearing, a proprietary form of PTFE is used. In the form PTFE is used in the PolyLube™ fiber series bearings, lubrication occurs via the film transfer process.

As the shaft rotates under normal cycling conditions, the PTFE is sheared and compacted in the surface texture of the shaft. This happens because the PTFE molecular "strands" are very stringy and as a result can fill the macroscopic voids in the shaft.

Since PTFE has a melting temperature of 612°F, a "smearing" action of the PTFE around the shaft and the bearing wear surface can take place. This transition temperature (the temperature at which physical—not mechanical— performance changes take place) is high enough to allow high surface operating temperatures under dry conditions. Due to the high thermal expansion of PTFE, it is "drawn" out of the wear liner and repeatedly smeared and re-smeared during bearing rotation or oscillation.

On a slightly larger scale, the following schematic illustrates what the Polygon PolyLube™ wear surface looks like during natural cycling conditions.



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