



Q: *“Does PolySlide™ Cylinder Tubing Delaminate Like Gel-Coated Tubing?”*

Polygon Company’s PolySlide composite cylinder tubing uses a Patent-Pending (2002) “Liner-Less™” manufacturing process and material composition.

Liner-Less technology means that Polygon’s composite cylinder tubing completely eliminates the brittle gel-coat common in legacy era composite cylinder barrel materials. This technology entirely eliminates any potential of the liner separating due to thermal variations, cylinder impingement, or repeated stress / strain due to innate cyclic conditions.

To be more specific, when comparing the Tg's (glass transition temperature—the temperature at which point the polymer begins to soften or degrade with respect to mechanical performance) of a competitive gel-coated cylinder versus the PolySlide system, the results are surprisingly in Polygon’s favor! The legacy-era gel-coat Tg's tested in the low 80's C, whereas the PolySlide matrix tested at 138 C. PolySlide tubing has a 50 C temperature advantage over the competition which is a real selling advantage where temperature rating is a concern. The testing was done on a model PYRIS 1 DSC (Perkin Elmer, Differential Scanning Calorimeter).

The key advantages of the PolySlide cylinder over gel-coated cylinders are:

- Lower adhesion friction.
- Harder bore surface—at least 10 times harder on the Brinell hardness scale than gel-coated surfaces.
- Has better wear resistance properties.
- No need to be concerned about de-bonding problems.
- Higher impact resistance



The picture above shows a typical delamination condition prevalent in legacy-era composite cylinder materials that use gel-coats. This problem is eliminated entirely with PolySlide Liner-Less tubing.

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