Garlock
SEALING TECHNOLOGIES®

Memo

To: Distribution Date: May 23, 2005

From: Applications Engineering cc:

Subject: Glass-lined equipment and envelope gaskets

Did you know…

The most commonly used gasket for glass-lined equipment is an envelope gasket. Typically, the gasket is constructed of a slit or milled PTFE envelope that is then filled with a non-asbestos filler. In addition, it is not uncommon for the envelope manufacturers to incorporate a flat or corrugated metal ring between two layers of the non-asbestos filler to provide tensile or "hoop" strength.

Cross-section of a chemically attacked envelope gasket with a non-asbestos filler

Due to high temperatures used to manufacture the glass-lined flanges, the sealing surfaces are prone to unevenness or waviness. The gasket must conform to these uneven surfaces in order to obtain and maintain a proper seal. With envelope gaskets, users can "shim" the gasket by adding additional fillers to the areas where irregularities exist. However, the non-asbestos fillers have two major downfalls. The material is typically not very compressible (10-20%), and, if the envelope is damaged during installation or permeated by the service media, the filler may be subject to chemical attack. In addition, installers have to be careful that the envelope doesn't "fold over" during installation, thus exposing the filler material to chemical attack.

The GYLON 3545 helps reduce and/or eliminate these issues. GYLON 3545 is a highly compressible, pure PTFE gasketing material that excels in less than perfect flange conditions. The soft, microcellular outer layers allow the gasket to conform to surface irregularities as great as 20-25% of the gasket thickness, and the solid PTFE core gives the product the necessary rigidity for improved handling during installation. Style 3545 is a one-piece gasket that can not fold over like an envelope. Unlike many of the "low load" gasket solutions on the market, the GYLON 3545 is available up to ¼" thick to handle the most irregular of flange surfaces.

In addition to being chemically resistance to a wide range of chemicals ranging from strong caustics to strong acids, the GYLON 3545 is also FDA compliant.

Still considering using a PTFE envelope gasket? Then why not consider using the 3545 as the filler material? As a filler, the 3545 provides piece of mind by having the same chemical resistance as the envelope. It also provides outstanding compressibility that will help reduce the need for further shimming in uneven sealing surfaces. In fact, testing has shown that placing GYLON 3545 in a PTFE envelope gasket reduced the "y" factor (minimum seating stress) by nearly 50% (1500 psi down to 800 psi).