# *CrossFilm*™ Permeation Testing

## 100% PTFE Materials for Floating Roof Seal Applications

PTFE-coated fiberglass materials have been used for years in the floating roof seal industry. PTFE coatings, however, are prone to cracking. As the table shows below, a nonporous PTFE-coated fiberglass material is still permeable to vapors because of the inevitable cracks in a coated surface. Laminating a PTFE film onto the surface of a PTFE-coated fiberglass material will greatly diminish the permeation of a material.

A fiberglass material is brittle. Broken filaments of a fiberglass material will destroy coated and laminated PTFE surfaces very quickly when subjected to handling and movement. As you can see from the testing below, a standard PTFE-coated fiberglass material, viewed as a nonporous material in the industry, becomes porous after one hour of flexing. After movement, tiny holes have been created in a fiberglass material that allow the escape of vapor.

A CrossFilm™ material is mechanically-capable; it does not require a fiberglass reinforcement. Therefore, a CrossFilm™ material is 100% PTFE.

As shown in the table, CrossFilm™ 2105 and CrossFilm™ 2109 are nonporous and non-permeable to start. After one hour of flexing, fiberglass-reinforced materials become porous to vapors. The CrossFilm™ materials retain full vapor barrier capability, even in an extended 8 hour permeation test. This remains true even after another hour of flexing.

CrossFilm™ materials are simply the safest and most reliable materials for vapor containment in floating roof seal applications. In addition to excellent flexing properties, CrossFilm™ materials are guaranteed to be corrosion-free and compatible with any chemical environment.

| Material | Isobutylene Permeation Testing | Isobutylene Permeation Testing After One Hour of Flexing |
|---|---|---|
| **PTFE-coated fiberglass (0.010" thick)** | 0.5 to 17 ppm (20 minute test duration) | Sample became porous after flexing |
| **PTFE-coated fiberglass with 0.002" thick PTFE films laminated to both sides (0.010" thick)** | 0 to 1.0 ppm (20 minute test duration) | Sample became porous after flexing |
| **CrossFilm™ 2105 (0.005" thick)** | 0 ppm (20 minute test duration) | 0 ppm (8 hour test duration) |
| **CrossFilm™ 2109 (0.009" thick)** | 0 ppm (20 minute test duration) | 0 ppm (8 hour test duration) |





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