

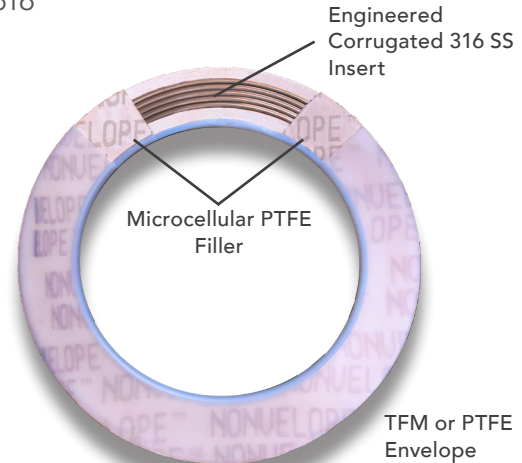


# VSP NonVelope™

for Corrosive & High Purity Services on  
Glass-Lined Steel Equipment  
U.S. Patent No. 11,268,616

## NonVelope™

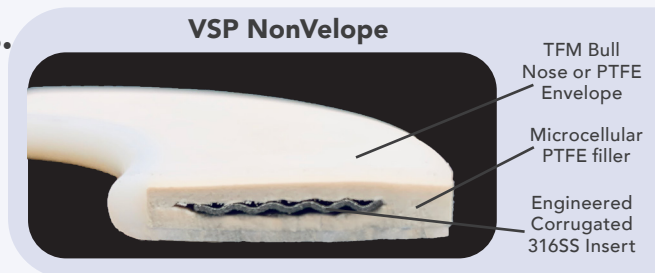
Builds on the strengths of the standard envelope gasket while eliminating common weaknesses. NonVelope is constructed using an engineered corrugated stainless steel insert fully encapsulated within microcellular PTFE fillers and bonded to a PTFE envelope for the best available chemical resistance, compressibility, ease of installation, and performance.



## NonVelope Improves upon the Conventional Envelope Gasket



Vs.



- ▶ Envelope's loose, flared leaves often "fold back," making installation difficult and potentially leaving filler and insert open to chemical attack and causing gasket failure.
- ▶ Fillers often do not provide the compressibility necessary for wavy GLS flange surfaces.
- ▶ Filler materials often become brittle above 250°F, causing a loss of physical properties.
- ▶ Fillers are not chemically inert and can be corroded/degraded by ambient atmospheres.
- ▶ Metal insert exposed at the gasket OD and subject to external corrosion

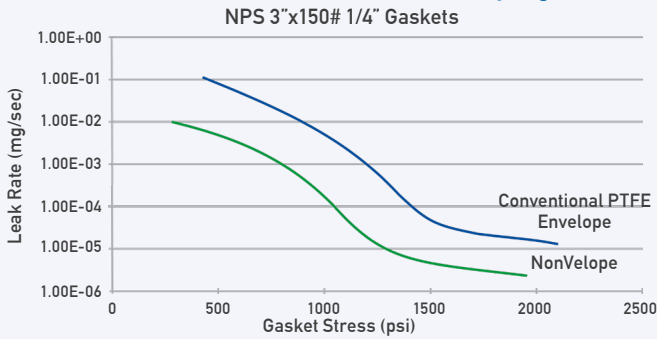
- ▶ PTFE envelope bonded to microcellular PTFE filler, providing a unitary construction eliminating envelope flaring
- ▶ Fully encapsulated corrugated 316SS insert is engineered to enhance sealability & recovery and protects against glass to glass contact
- ▶ Adapts and conforms easier to wavy GLS surfaces due to enhanced compressibility of the microcellular PTFE filler
- ▶ Microcellular PTFE filler encapsulates the insert and provides complete chemical resistance of the gasket at ID & OD
- ▶ NonVelopes >NPS 20 are unbonded to allow the gasket to be shimmed to account for flange irregularities.

VSP Technologies deploys a team of Engineers and Fluid Sealing Specialists who provide engineered solutions for your unique sealing requirements.

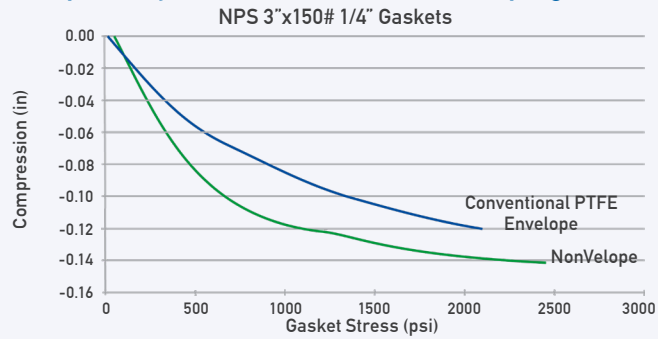
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**NONVELOPE PERFORMANCE**

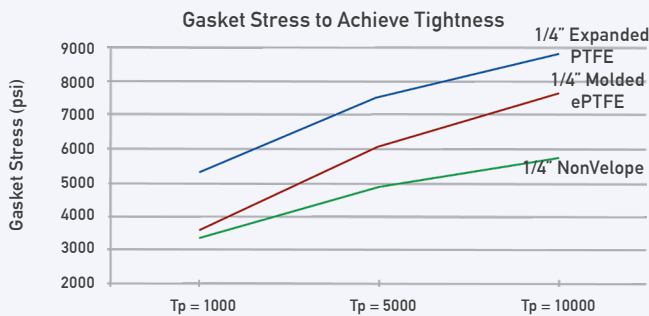
**NonVelope seals tighter and at lower stresses than conventional envelope gaskets**



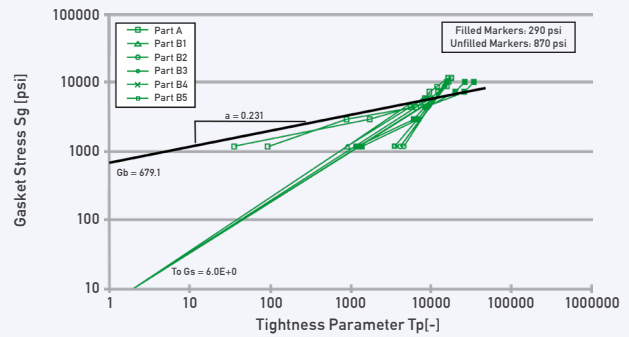
**NonVelope offers greater compressibility/adaptability than conventional envelope gaskets**



**NonVelope seals tighter and at lower stresses than other GLS Gaskets**



**NonVelope ROTT Tightness Performance**



**Product Specifications**

Temperature Range	Max= 500°F Min= -330°F
Pressure Resistance	Full vacuum to 16 Bar (230 psig)
Chemical Resistance	All chemical services (pH 0-14) except molten alkali metals, elemental fluorine and aggressive tri-fluoride compounds
PVRC Gasket Factors (PVRC, ROTT)	$G_b = 679$ psi $a = 0.231$ $G_s = 6$ psi
Materials of Construction (Other insert materials available upon request)	Virgin PTFE milled envelope* Virgin microcellular PTFE filler* 316SS Corrugated Insert*
Standard Sizing/Thickness (NPS 1-24, Class 150)	1/4" nominal thickness* Old standard NPS ID*
Purity	Meets FDA 21 CFR 177.1550

\*Other materials, thicknesses, or sizes available upon request.

**Ensure complete mechanical and specifications compliance with VSP's NonVelope Torq-Kit™**



All flange rework components in one box with assembly instructions to ensure reliable performance

Contact VSP for ordering information

**NonVelope in GLS Flanges**

Molded or sheet ePTFE gaskets are sometimes used in glass-lined steel flanges but:

- ▶ offer little recovery and poor cycling performance
- ▶ easily cut or sheared which can cause damage to the glass flanges
- ▶ require high assembly torques to fully densify the fibrous matrix

**NonVelope offers:**

- ▶ Greater recovery/resiliency than traditional envelope or ePTFE gaskets
- ▶ Protection from cut-through
- ▶ Lower assembly torques
- ▶ Higher Tightness/Lower Emissions
- ▶ Enhanced GLS surface conformability