

# Vibra-Seal® Pre-Applied Thread Seal

- -65°F to +300°F
- Non-Curing — Stays Flexible
- Reusable Up to 5 Times
- Inhibits Corrosion — Excellent Solvent Resistance
- 503, 516, 517, 503HV



Vibra Seal® Preapplied Thread Sealant is a tough, non-hardening sealant engineered to be preapplied to parts. Vibra-Seal is designed to provide an instant seal on tapered pipe threads against most fluids, fuels and lubricants but can also be used on straight threads. Vibra-Seal performs to the demanding requirements of the automotive, truck and agricultural equipment manufacturers. It provides lubricity superior to Teflon®—at a lower cost!

Available in white or burnt orange colors, Vibra-Seal coatings are highly filled water based liquids that are non-toxic and non-sagging. When dried, they become a resilient, tight clinging and non-curing sealant. Vibra-Seal coated parts also resist loosening because of the prevailing torque created by the coating. Long-Lok can coat entire parts (frequently done on smaller fasteners) or can apply Vibra-Seal sealant to a limited band of

threads, which is typical of larger fasteners and fluid fittings.

### Typical Applications

- Rear Axle Filler Plugs
- Brake Fittings
- Bearing Adjuster Nuts
- Compressor Pipe Plugs
- Overhead Fire Sprinklers
- Shower Heads
- Pressure Gauges/Sensors
- Pipe Fittings of all Kinds
- Cable Connectors
- Adjustment Screws
- Door Closure Hardware
- Screws for Plastic Assembly

### Specifications

Resin Coating	Acrylic
Colors	White or Burnt Orange
On-Part Life	4 Years, Minimum
Toxicity	None

### Torque Tension

The tension in the fastener can be reasonably controlled by controlling the torque. For any given fastener the torque tension relationship can be stated as follows:

$$T = KDF$$

where T = Torque, lb.-in. (N•m)

D = Nominal bolt diameter, in. (m)

F = Tension or clamping force, lbs. (N)

K is a universal constant for all sizes which can be established empirically.

(You can find safe stresses for bolts in manufacturers' fasteners specifications or tool engineers handbooks).

### K Values for Vibra-Seal® Sealants\*

	K Value
Dry Zinc Phosphate	0.13
Zinc Phosphate/Oil	0.11
Vibra-Seal on dry Zinc Phosphate	0.11
Vibra-Seal on Zinc Phosphate/Oil	0.09

\*3/8"-16 Grade 5 bolts with Grade 2 as received nuts.

(Example: Vibra-Seal on 3/8"-16, Grade 5, zinc phosphate bolt:  
T = .11 X 375 X 5000 = 206 lb.-in.)

**Performance**

**Pressure Resistance**

**1. Pipe Threads**

Pipe Size	Burst Rating	Test Pressure	Test Results (Test Fluid –10 wt. Motor Oil)
1/2" NPT	10,400 psi (72 MPa)	10,000 psi (69 MPa)	Test discontinued with no sign of leakage
2" NPT	5,200 psi (36 MPa)	4,000 psi (28 MPa)	Test discontinued with no sign of leakage
3" NPT	5,000 psi (35 MPa)	3,000 psi (21 MPa)	Test discontinued with no sign of leakage

**2. Straight Threads**

In addition to NPT joints, Vibra-Seal products can also be used to seal straight threads. Test performed on 3/8-16 straight threads, torqued up snug, exhibited excellent sealing characteristics at oil pressures up to 600 PSIG (4.14 MPa).

**Steam Pressure Resistance**

Tests performed on 1/2" cast iron National Pipe Threads (NPT) assembled with 24 lb.-in. (2.7 N•m) seating torque yielded the following results.

Steam Pressure	Steam Temperature	Test Results
12 psi (.014 MPa)	200°F (93°C)	Test discontinued after 1,000 hours with no sign of leakage
30 psi (.207 MPa)	250°F (121°C)	Test discontinued after 1,000 hours with no sign of leakage

**Solvent Resistance**

Tests performed on 1/2" cast iron National Pipe Threads (NPT) at 100 PSIG (.69 MPa) hydrostatic pressure after 30 days immersion in solvents indicated.

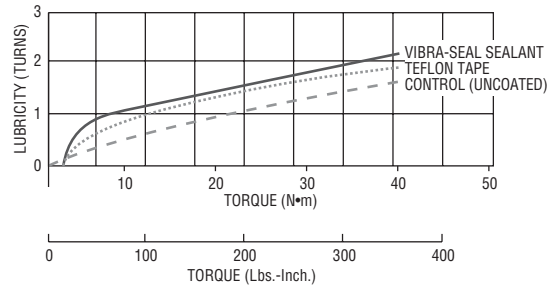
Solvent	Solvent Temperature	Test Result
10 Weight Motor Oil	300°F (149°C)	No Leakage
Water	200°F (93°C)	No Leakage
Gasoline	77°F (25°C)	No Leakage
Air @ 98% Relative Humidity	100°F (38°C)	No Leakage
50% Glycol and Water	188°F (87°C)	No Leakage

**Design Notes:**

- Vibra-Seal coatings are slightly basic and may stain or discolor some metals, especially those containing copper. However, the effect on performance of the sealant and staining of the metals is inconsequential.

**Lubricity**

NPT joint assembly is made quicker and easier because of the lubricating ingredients in Vibra-Seal products which resist thread galling. Line-up adjustments can be made several hours after assembly without loss of sealing quality. Joints can be easily disassembled with regular tools even after years of service.



**Reuse**

Vibra-Seal products have exhibited the ability to be re-used five times on 1/2" NPT fittings which are torqued up snugly. After five uses, these fittings still maintain 300 psi (2.0 MPa) hydraulic pressure without recoating.

**Breakloose and Prevailing Torque Characteristics**

Vibra-Seal coated parts will resist loosening because of the prevailing torque characteristics shown below:

**Specimens:**

- Bolts - Grade 5, 3/8"-16 x 1-1/2" zinc phosphate and oil finish.
- Nuts - Grade 2, 3/8"-16 zinc phosphate and oil finish.

Typical Strength Values @ Room Temperature Test Specimen	Seating Torque	Breakloose Torque	Prevailing Torque – 180°
Control (No Coating)	360 lb-ins (40.7 N•m)	243 lb-ins (27.5 N•m)	0 lb-ins (0 N•m)
Vibra-Seal Products Coating	360 lb-ins (40.7 N•m)	175 lb-ins (19.8 N•m)	21 lb-ins (2.4 N•m)

**How to Specify**

Vibra-Seal coated fasteners and components are produced to order by Long-Lok Fasteners Corp. Long-Lok processes your supplied parts, or we can supply complete products, including the basic fasteners or fluid fittings. To order Vibra-Seal coated fasteners or components, or to request a quote, please call Long-Lok and speak directly with one of our Sales Engineers.

SELF SEALING FASTENERS