

## Product Information

| <b>3300C – Slade’s Cost Effective Pump and Valve Packing</b>   |  |
|--|--|
| <b>Reinforcement:</b>  | Each yarn of graphite foil is reinforced with high strength structural carbon fiber                    |
| <b>Temp:</b>   | Mild Oxidizers to 1800°F/1000°C (for high temperatures, e.g., over 1000°F/540°C, consult the factory)* |
| <b>Pressures:</b>  | Valves to 1000 PSI/70 BAR (for higher pressures, consult factory)*                                     |
| <b>pH Range:</b>   | 1-14   |
| <b>3300W:</b>  | Inconel wire reinforced for higher pressures: 5000 PSI/350 BAR   |
| <b>3300LC:</b>   | Low chloride, high purity for nuclear service  |
| <b>3300LS:</b>   | Low sulfur, high purity for nuclear service  |
| <b>3300G – Slade’s Best All Purpose Pump and Valve Packing</b> |  |
| <b>Reinforcement:</b>  | Corners and yarns of graphite foil reinforced with high strength structural carbon fiber               |
| <b>Temp:</b>   | Mild Oxidizers to 1800°F/1000°C (for high temperatures, e.g., over 1000°F/540°C, consult the factory)* |
| <b>Pressures:</b>  | Valves to 5000 PSI/350 BAR without end-rings*  |
| <b>Pumps:</b>  | Flush-free in many services to 4800 FPM (1400 m/min)   |
| <b>pH Range:</b>   | 1-14   |
| <b>Applications:</b>   | Chemicals, steam, hydrocarbons, etc.   |
| <b>Advantages</b>  | <a href="#">3300G Advantages</a>   |
| <b>Installation:</b>   | 1. Check clearances and dimensions   |

|   |  |
|---|--|
|   | <ol style="list-style-type: none"> <li>2. Best to use no more than 5 rings in stuffing box (use <i>Slade</i> spacer bushings to reduce rings)</li> <li>3. Cut rings on the bias (45° angle), stagger joints</li> <li>4. Compress each sealing ring at least 25% (especially the first ring). Do not compress spacer bushings.</li> <li>5. Loosen gland to allow it to relax</li> <li>6. Snug the gland bolts and start the pump</li> </ol> |
| <b>3300GLC:</b>   | Low chloride for nuclear service   |
| <b>3300GLS:</b>   | Low sulfur for nuclear service   |
| <b>3300W – Slade’s Best Valve Packing</b>                   |  |
| <b>Reinforcement:</b>                                       | Each yarn of graphite foil is reinforced with Inconel™ Foil shrouded in high strength carbon fiber   |
| <b>Temp:</b>  | Mild oxidizers to 1800°F/1000°C (for high temperatures, e.g., over 1000°F/540°C, consult the factory)*   |
| <b>Pressures:</b>   | Up to 5,000 psi/345 psi*   |
| <b>3300CJ – Slade’s Anti-Extrusion Carbon Fiber Packing</b> |  |
| <b>Description:</b>   | Carbon jacketed 3300C  |
| <b>Pressures:</b>   | Valves to 1000 psi/ 70 bar (for higher pressures, consult factory)*  |
| <b>Application:</b>   | Used as anti-extrusion end ring  |

**\*As the operating temperature increases, the pressure limit of the packing decreases.**

#### ***Advantages of 3300 Products***

#### *Applications*

- *Gate Valves*
- *Globe Valves*
- *Pinch Valves*
- *Diaphragm Valves*
- *Needle Valves*
- *Plug Valves*

- *Butterfly Valves*
- *Ball Valves*
- *Check Valves*
- *Relief Valves*
- *Control Valves*
- *Knife Valves*

#### *Fire Safe*

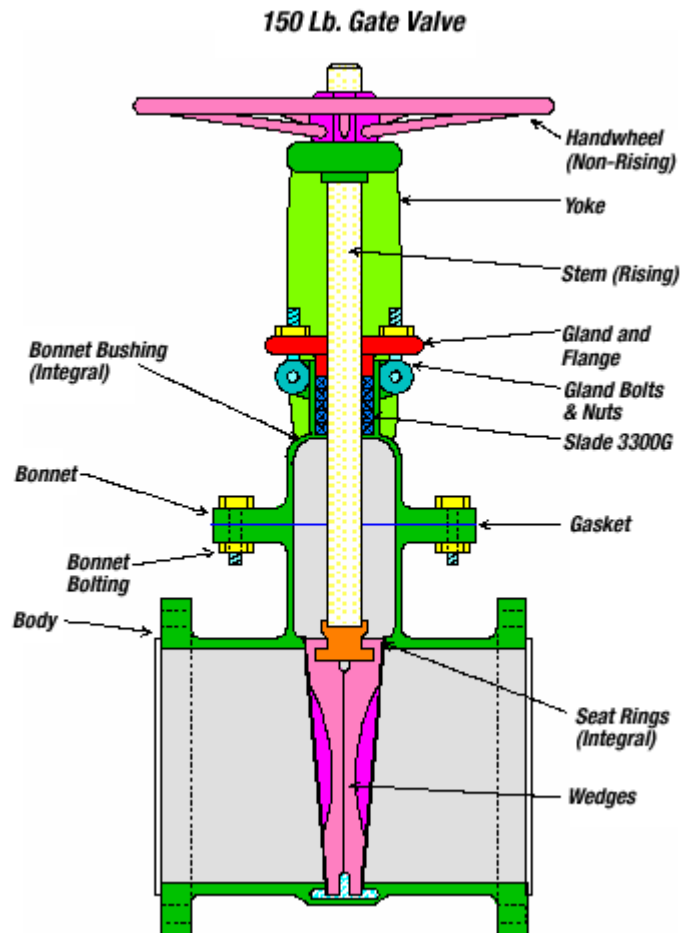
- *Slade braided graphite foil is API Fire Test Certified*
- *API 589 First Edition*
- *API 607 Fourth Edition (modified by EXXON Specs)*
- *Tested by Southwest Research Institute*
- *Witnessed by 3 EXXON Engineers*
- *Temperatures to 1800°F/1000°C*
- *Tested at 5% of allowable standard*
- *Performed under a grant from the American Petroleum Institute*
- ***Warning:*** *Valves sealed with packings containing lubricants or blocking agents (PTFE) may cause secondary fires when exposed to the intense heat of a fire in another unit, which would cause packing shrinkage and leakage of flammable fluids causing a secondary fire.*
- ***SLADE Patented Packings: rated FIRE SAFE***

#### *Emission Safe*

- *PERF Emission Standards*
- *Contact Slade for documentation*
- *EXXON-Emission Report:*
  - *Emission tests, performed at a leading petroleum company's test facility in Florham Park, NJ (using PERF procedures and standards), show that Slade patented, reinforced braided graphite foil outperformed standard die-formed graphite sealing rings.*
  - *Slade reduced emissions by 74%.*
- *Corpus Report:*
  - *A major Gulf Coast, USA refinery reports that 96% of the 325 valves packed with slade reported zero ppm emissions. Most of these valves were packed in the field by inexperienced installers.*
- *Cambridge Report:*
  - *A major USA West Coast refinery reports that after 5 years, 96% of the 282 field installed valves were at zero emissions and that the 3,000 psi hydrogen control valves never went over 9 ppm during the 5 year test. Most of these valves were packed in the field.*

*All claims made herein are documented.*

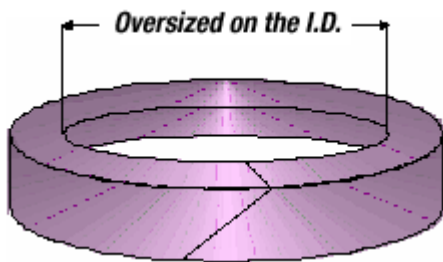
3300G Advantages in Particular



1. Seals Fugitive Emissions to **below 50 PPM!**
2. Puts **anti-extrusion into each ring** (as opposed to just top or bottom)
3. Puts the **tensile strength of graphite fiber** into the sealability of flexible graphite (see next slide)
4. **Reduces inventory** and cost:
  1. By **eliminating die-formed rings** for each size
  2. By having a few standard sizes for all valves and pumps
  3. By not ruining an entire packing set because of one ruined ring (sets not required)
  4. In many applications, no need to remove old packing, just add ring
5. **No End-Rings Required:** Puts **wiping action in each ring** to prevent build-up of graphite particles at top and bottom rings and the loss of volume in between
6. Extremely **high tensile strengths** achieved with carbon/graphite core and corners
7. **No risk of misplacement** of the anti-extrusion rings (each ring acts as an anti-extrusion device no matter where you put it). Fewer installation errors
8. **High operating temperatures** (typically: **1,800° F**)
9. Conforms to the geometry of the stuffing box and stem; **undersized or worn stems and shafts easily sealed**
10. **"Live-loading" not required** (no weight loss at temperatures up to 1,000 degrees F).
11. Seals **pressures to 5,000 PSI** in Valves, **without special rings**

12. Highly **polished surfaces are not required** since natural, exfoliated graphite fills in the interstices of rougher surfaces, providing a lubricated surface: graphite against graphite (recommendations are RMS. 16 to 32)
13. Handles media within **full 1-14 pH**

### **Enviro-Foil Spacer Bushings**



New Enviro-Foil spacer bushings replace carbon bushings for Slade's valve repair customers.

Slade's patented technology for metallic foil inserted braiding yarns eliminates the machined carbon bushings used as spacers in stuffing boxes.

**EPRI** (Electrical Power Research Institute) has proven that using more than five rings of packing reduces the sealing capability of all valve packings. Machined carbon bushings are used to act as space fillers to improve valve-sealing performance.

Slade's patented technology, has lead to the development of a simpler spacer system that is more user friendly.

**Available in pre-formed rings.**

Also excellent as an Anti-Extrusion Ring!!!

Vapor Depositioned 3300G Spacer Bushings



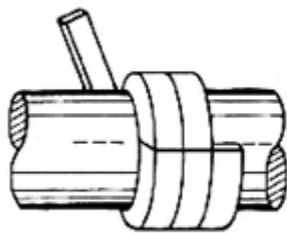
**Hinged for easy installation!**

The Vapor Depositioned 3300G Spacer Bushing (VDG-3300G) is a densely die-formed bushing of braided yarns of graphite foil reinforced with carbon fiber.

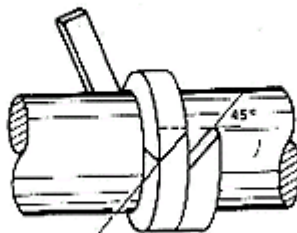
This **VDG-3300G** is a non-metallic bushing that may be used in automatic control valve applications. Contact the factory.

## General Installation

- **Please contact Slade for detailed Installation Instructions**
- Check clearances and dimensions
- Best to use no more than 5 sealing rings in stuffing box (use Slade's Enviro-Foil Spacer Bushings to reduce rings)
- Cut sealing rings on the bias (45° angle), stagger joints
- Compress each sealing ring 25%-30% (use packing compressors as needed). Do not compress spacer bushings.
- Loosen gland to allow it to relax
- Snug the gland bolts



**Incorrect**  
**Butt Joint**



**Correct**  
**Skive Joint**  
*(don't forget to stagger joints)*

