



## *Certificate of Type Approval*

This is to certify that Slade, Inc.  
has met the requirements of ABS Product Type Approval for  
Patented Carbon Fiber Reinforced Vermiculated Graphite Braided Yarn  
Model Name(s): 3300-G Packing

**Presented to:**

Slade, Inc.  
735 S. Broad St.  
P.O.Box 920  
Mooresville  
North Carolina  
28115

**Available for military and marine use from:**

**DELAMAR**  
The DELAMAR Company  
Rte. 4, Box 190 • Dillwyn, VA 23936  
434-983-6104 Ph. 434-983-3582 FAX  
info@delamar.net • www.delamar.net

**Intended Service:**

Seals tail shaft, stabilizer fin stock, rudder stock, pump shaft, reduction gearbox shaft, other rotating equipment shaft, and valve-stem packing glands.

**Description:**

Patented carbon fiber reinforced vermiculated graphite braided yarns (made in North Carolina, USA). Yarns are interlock-braided into packing with reinforced corners for added strength and high-pressure resistance. Sizes range from 0.125" x 0.125" to 2.0" x 2.0".

**Ratings:**

Non-oxidizers: -400 degrees F to 5400 degrees F, Mild oxidizers: -400 degrees F to 1800 degrees F. Valve pressures up to 5000 psi. pH range: 1 - 14. Seals flush-free in many rotating shaft applications up to 4800 feet per minute shaft surface speed. Low chloride version available for nuclear power plant applications.

**Service Restrictions:**

Unit Certification is not required for this product.

**Comments:**

The use of Slade's carbon fiber reinforced vermiculated graphite packing in stuffing boxes will not result in

galvanic corrosion of tail shafts when properly installed. By virtually eliminating leakage, no electrolyte is present to promote galvanic corrosion.

**ABS Rules:**

2001 Steel Vessel Rules Under 90 Meters 4-4-7/1.3; 2002 SVR Rules 5-1-7/ 3.3.1(d), 7.3.1,

**National Standards:**

None

**International Standards:**

None

**Government Authority:**

None

**Others:**

Manufacturer's Standards, MIL-P-24583B (SH)



Manager, ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.

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