

**TYPE APPROVAL CERTIFICATE****This is to certify:****That the Stern Tube Seal**

with type designation(s)

**SUPREME: Stern tube seal type; STA, STF, SVA, SG, SGV, LDA, LDF, SAA, SGA Thruster seal type; TS3, TS4, TS4-2, TSV4** ,,

Issued to

**Lagersmit Sealing Solutions B.V.**  
**ALBLASSERDAM, Netherlands**

is found to comply with

**DNV GL rules for classification – High speed and light craft**  
**DNV GL rules for classification – Ships****Application :****The stern tube and thruster seals are approved for oil lubricated propeller shafts. Type LD is approved for oil or grease lubricated shafts.****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.**This Certificate is valid until **2023-12-11**.Issued at **Høvik** on **2018-12-12**DNV GL local station: **Rotterdam**for **DNV GL**Approval Engineer: **Nadine Grace Mosteiro Halvorsen**.....  
**Oddvar Deinboll**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Job Id: **262.1-015913-3**  
Certificate No: **TAM0000018**  
Revision No: **2**

## Product description

Seal for oil lubricated propeller shafts.

Seal types Supreme LD for oil or grease lubricated shafts

## Application/Limitation

The sealing boxes type STA, SVA, SG, SGV, STF, SAA and SGA satisfies the requirements to sealing boxes for TMON (Tailshaft Condition Monitoring Survey Arrangement).

Shaft survey interval as specified in the Rules Pt.7 Ch.1 Sec.1 [1.6.6].

The Stern Tube seal is approved for mineral oils.

Environmentally Acceptable Lubricants (EALs) may only be applied according to manufacturer's list. Manufacturer's confirmation should be obtained separately.


## Type Approval documentation

The following drawings :

TA-SUP-X01, rev.B	(STA)	Arrangement SUPREME standard aft seal
TA-SUP-X05, rev.D	(SVA)	Arrangement SUPREME stern tube aft seal Ventus
TA-SUP-X10, rev.B	(SG)	Arrangement SUPREME Seaguard
TA-SUP-X15, rev.B	(SGV)	Arrangement SUPREME Seaguard Ventus
TA-SUP-X20, rev.B	(STF)	Arrangement SUPREME standard forward seal
TA-SUP-X30, rev.C	(LDA)	Arrangement SUPREME stern tube aft seal - low duty
TA-SUP-X31, rev.C	(LDF)	Arrangement SUPREME stern tube forward seal - low duty
TA-SUP-X40, rev.A	(TS3)	Arrangement SUPREME Thruster seal 3 lips execution
TA-SUP-X41, rev.C	(TS4)	Arrangement SUPREME Thruster seal 4 lips execution
TA-SUP-X46, rev.A	(TS4-2)	Arrangement SUPREME Thruster seal 4 lips execution, split type
TA-SUP-X43, rev.C	(TSV4)	Arrangement SUPREME Thruster seal Ventus, 4 lips execution
TA-SUP-X60, rev.C	(SAA)	Arrangement SUPREME aft seal Athmos
TA-SUP-OPT, rev.B		Optional extras
TA-SUP-X65, rev A	(SGA)	Arrangement SUPREME Seaguard Athmos

Lagersmit information letter – "Heading towards VGP compliance", version 20160502-1

Supreme Athmos sealing verification letter – "Verification of non oil-to-sea sealing systems: SUPREME Athmos sealing solution", dated 2015-01-12



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### **Other conditions**

Material test report for sealing rings to be presented to DNV GL per installation, ref. Pt.4 Ch.4 Sec.1 [3.1.1] Table 8 (applicable from January 2019).

### **Marking of product**

The product to be marked with manufacturer's name or trademark and type number identification.

### **Periodical assessment**

For retention of the type approval, a DNV GL surveyor shall perform an assessment after 2 years and after 3.5 years, to verify that the conditions of the type approval are complied with. A renewal assessment will be performed at renewal of the certificate.

In cases where the type approved product is manufactured at other companies, the periodical assessment shall verify that the type approval applicant has a quality control system for consistent production at their licensees/subcontractors. Furthermore, periodical assessment shall be carried out randomly at these companies.

- END OF CERTIFICATE -