

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Flexible hoses of non-metallic material without permanently fitted couplings**with type designation(s)
Sil-G1GS3R3Li3

Issued to

MST Matzen Schlauch-Technik GmbH & Co. KG
Boizenburg, Germany

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems**DNV GL rules for classification – High speed and light craft****DNV GL rules for classification – Yachts****DNV GL rules for classification – Inland navigation vessels****Application :****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.****Temperature range:** up to 150°C
Max. working press.: up to 5 bar
Sizes: 38 mm up to 60 mmThis Certificate is valid until **2021-10-19**.Issued at **Hamburg** on **2016-10-20**for **DNV GL**DNV GL local station: **Rostock**Approval Engineer: **Peter Gierhan**

Olaf Drews
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.

Production Place

Hose manufacturer:

MST Matzen Schlauch-Technik GmbH & Co. KG 19258 Boizenburg GERMANY

Product description

Construction: 10 multi-layers of silicone according to specification
PV-963-00 dated 09.08.2016

Reinforcement: Heavy glass fabric, Ceramic fabric, Glass fabric

Hose I.D.: 38 mm up to 60 mm

M.A.W.P.: 5 bar

M.A.W.T.: 150°C

End Connections: Clamps (Hinge bolt clamp, 2-piece, double hose clamps on each side)
(Ships and HSLC) Torque clamping screw = 15 Nm

End Connections: Clamps (Hinge bolt clamp, 2-piece)
(All other vessel types) Torque clamping screw = 15 Nm

Application/Limitation

RANGE OF APPLICATION

For seagoing Ships and High speed and light crafts (specified in the Rules):

- Fresh water cooling systems

For Yachts and Inland navigation vessels (specified in the Rules):

- Fresh water cooling systems
- Seawater cooling systems

Vessel Type	Ships	High speed and light crafts	Yachts	Inland navigation vessels
Double hose clamps on each side	X	X	-	-
One hose clamps on each side	-	-	X	X

Flexible hoses are only to be used where it is necessary due to vibrations or flexible mounting of the machinery. The hoses shall not replace/be used where permanent piping is possible/required.

The hoses must only be fitted in places where they are always accessible.

The hoses are not to be used for suction.

Flexible hoses of these types are not to be used in boiler fronts and other hot surfaces.

The hoses are to be mounted in accordance with the manufacturer's instructions.

Production Testing

One hose of each manufacturing batch has to be hydrostatic pressure tested of 1.5 times the maximum working pressure and has to be delivered with manufacturer's pressure test report.

Type Approval documentation

- Test acc to ISO 1817, dated: 25.10.2010
- Test Report: IHA 053-16, dated: 14.09.2016
- Test Report: MST, dated: 21.09.2016
- DNV GL-Ref.-Nr.: 10-084515

Tests carried out

-Proof pressure test, Burst test, Fire test, Dimensional Check test.

Marking of product

For traceability to this type approval the products are to be marked with:

- Manufacturers name or trade mark
- Type designation

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform a survey every second year, to verify that the conditions for the type approval are complied with and to witness the following tests on a selection of sizes:

- Dimensional check.
- Burst test

The tests shall be performed in accordance with procedures given in DNV Type Approval Program "Type Approval of Flexible Hoses of Non-Metallic Material" or another recognized standard.

The tests are to be performed with the type of clamps fitted that are Type Approved with the hoses.

END OF CERTIFICATE