



**TYPE APPROVAL CERTIFICATE**  
No. **MAC084922XG/008**

**This is to certify** that the product identified below is in compliance with the regulations herewith specified.

<i>Description</i>	<b>Metallic flexible hoses</b>
<i>Type</i>	<b>SZ</b>
<i>Applicant</i>	<b>HKS GMBH SCHONENFAHRERSTR 1 18057 Rostock GERMANY</b>
<i>Manufacturer</i>	<b>HKS GMBH</b>
<i>Place of manufacture</i>	<b>SCHONENFAHRERSTR 1 18057 Rostock GERMANY</b>
<i>Reference standards</i>	<b>Part C, Chapter 1, Section 10 of RINA Rules for the Classification of Naval Ships</b>

*Issued in* **HAMBURG** on **November 14, 2022**. *This Certificate is valid until* **August 10, 2027**

  
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**RINA Services S.p.A.**  
**Giuseppe Russo**

This certificate consists of this page and 1 enclosure

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Enclosure - Page 1 of 1

SZ

### Reference documents

- Technical Drawings approved with HMMC-8638 and HMMC-8885 and dispatched with Letter HMMC/2017/00191/CRLVA

- Tests :

TUV Sud report : ar76245913\_02

DVGW Report NG-4602CL0260:

### Design Conditions

Type	Size	Design pressure [bar]	End fittings
SZ 32	DN 32	62	flanges, welded ends, approved pipe unions
SZ 40	DN 40	40	flanges, welded ends, approved pipe unions
SZ 50	DN 50	40	flanges, welded ends, approved pipe unions
SZ 65	DN 65	37	flanges, welded ends, approved pipe unions
SZ 80	DN 80	34	flanges, welded ends, approved pipe unions

Maximum working temperature: 550 °C depending on the used sealing

### Materials/Components

Hoses Stainless Steel 1.4541

Wire braid Stainless Steel 1.4301

End fittings S235JR

### Fields of application

May be used for the following services on board:

- Steam and condensate
- Compressed air
- Fresh water and sea water
- Methanol
- Ammonia
- Bio diesel
- Nitrogen

### Additional manufacturer site

HKS-CZ, s.r.o.

Mlekojedska 1994/97, 412 01 Litomerice, Czech Republic

### Acceptance Conditions

- The installation on board is to be made in accordance with the Manufacturer's instructions and provisions stated in Part C Chapter 1 Section 10 par. 2.6 of RINA Rules.
- The hoses are to be fitted with end couplings from the manufacturer.
- Each hose shall be tested as per Part C Chapter 1 Section 10 par. 20.4.6 of RINA Rules.
- Hoses are to be marked with the type designation, manufacturer's name and maximum foreseen working pressure.

**HAMBURG November 14, 2022**

