



TYPE APPROVAL CERTIFICATE
No. **MAC084922XG/005**

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

<i>Description</i>	Non metallic expansion joints
<i>Type</i>	ERV.GS
	ERV.RS
<i>Applicant</i>	HKS GMBH
	SCHONENFAHRERSTR 1
	18057 Rostock
	GERMANY
<i>Manufacturer</i>	HKS GMBH
<i>Place of manufacture</i>	SCHONENFAHRERSTR 1
	18057 Rostock
	GERMANY
<i>Reference standards</i>	Part C, Chapter 1, Section 10 of RINA Rules for the Classification of Naval Ships

Issued in **HAMBURG** on **July 10, 2022**. This Certificate is valid until **July 10, 2027**



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

ERV.GS

ERV.RS

Reference documents

Drawing Approved HMMC-8629 with letter HMMC/2017/00186/CRLVA

Type Test Report

HKS Pressure Test Record 2016-1 , 2016-2 , 2016-3

Dr. -Ing T.Bäumer Flame Resistance Test Report IBB1246 and 1530

IHA Fire Resistance Test N° 020-14

Components/Materials

As per above mentioned approved drawings

Design Conditions

Medium	Design Pressure [bar]	Design Temperature [°C]
Fresh Water / Sea Water	6	90
Lubricating Oil	10	80
Air	10	130

Fields of application

As per above mentioned approved drawings

Alternative Manufacturer

HKS-CZ s.r.o.
Meldkojedska 1994/7
41201 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 flanges shall be suitable for the actual design pressure and temperature of on board system
- Expansion Joints are to be marked with type designation manufacturer's name and maximum working pressure.
- For applications with flammable lubricating oil on board of vessels with European flag, a MED Certificate is required.

HAMBURG July 10, 2022

