



Marine & Offshore  
Division

Certificate number: 26959/B0 BV

File number: ACM 135/2611/4

Product code: 2103I

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

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## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

**HKS GmbH - industrieller Hersteller von Kompensatoren und Schläuchen**  
Rostock - GERMANY

*for the type of product*

**METALLIC HOSES (FLEXIBLE PIPES) ASSEMBLIES**  
STAINLESS STEEL HOSES, type: SZ

**Requirements:**

BUREAU VERITAS Rules for the Classification of Steel Ships

*This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

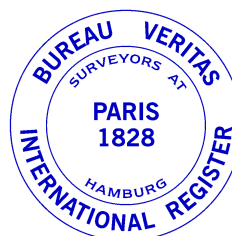
*This certificate is a renewal of certificate N° 26959/A0 BV expiring on 05/12/2016*

**This certificate will expire on: 05 Dec 2021**

**For BUREAU VERITAS,**

At BV HAMBURG, on 30 Nov 2016,

Udo Storm



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine & Offshore Division available on the internet site [www.veristar.com](http://www.veristar.com). Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION :

**Stainless steel hoses, type: SZ**

1.1 Design:

Double braid metallic hoses with annular corrugations

1.2 Identification and technical data:

File number	Size	Design pressure [bar]	End fittings
ACM 135/2611/4/1	DN 32	62	flanges, welded ends, approved pipe unions
ACM 135/2611/4/2	DN 40	40	
ACM 135/2611/4/3	DN 50	40	
ACM 135/2611/4/4	DN 65	37	
ACM 135/2611/4/5	DN 80	34	

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

1.3 Materials:

<b>Hoses</b>	Stainless Steel 1.4541
<b>Wire braid</b>	Stainless Steel 1.4301
<b>End fittings</b>	S235JR

### 2. DOCUMENTS AND DRAWINGS :

2.1 Drawings:

File number	Size	Drawing number	Rev.
ACM 135/2611/4/1	DN 32	SZ 32/40/975/FB	b
ACM 135/2611/4/2	DN 40	SZ 40/40/897/FB	b
ACM 135/2611/4/3	DN 50	SZ 50/40/897/FB	-
ACM 135/2611/4/4	DN 65	SZ 65/37/961/FB	-
ACM 135/2611/4/5	DN 80	SZ 80/34/1200/FB	-

2.2 Pressure test report

### 3. TEST REPORTS :

3.1 Type Test performed at TÜV SUD Automotive GmbH on Hoses SZ DN 40

- Burst pressure test
- Leakage test
- Flexibility test
- Vibration test
- U bend test
- Pliable test

3.2 Burst pressure tests performed at HKS GmbH in Rostock

### 4. APPLICATION / LIMITATION :

4.1 May be used for the following services on board:

- Bilge and ballast
- Steam and condensate
- Compressed air
- Fresh water and sea water
- Fuel oil
- Lub and hydraulic oil

- 4.2 End fittings as per manufacturer's catalogue. The hoses are to be entirely assembled in the manufacturer's workshop.
- 4.3 The used materials, sealing included, should be suitable for the intended services.
- 4.4 Tapered thread end connections are not to be used for liquid fuel or oil circuits in engine rooms nor any place containing an ignition source unless otherwise suitably screened at the Society's Surveyor satisfaction.
- 4.5 The hose assemblies are to be installed according to the Society's Rules requirements and the manufacturer's instructions.
- 4.6 The hoses are to be limited to a length necessary to provide for relative movement between fixed and flexibly mounted items of machine/equipment or systems and are only to be used in lengths up to 2 m. The hoses are to be installed in clearly visible and readily accessible locations at all times.

#### **5. PRODUCTION SURVEY REQUIREMENTS :**

- 5.1 The hoses are to be supplied by the manufacturer in compliance with the types and the requirements described in this certificate.
- 5.2 This type of product is within the category IBV of BUREAU VERITAS Rule Note NR320.
- 5.3 BUREAU VERITAS Product Certificate is required.
- 5.4 Arrangements shall be made for a Society's Surveyor to attend the tests and examinations at manufacturer's works or to perform the relevant audits when an alternative survey scheme, BV Mode I, has been arranged, in order to issue the BUREAU VERITAS certificate for the units to be fitted on board ships classed with BUREAU VERITAS.
- 5.5 **HKS GmbH** has declared to BUREAU VERITAS that the products detailed in this certificate are manufactured at the production site stated on the front page of this certificate.
- 5.6 Each hose with end fittings is to be hydraulic pressure tested to twice the maximum working pressure under witnessing of a Society's Surveyor.

#### **6. MARKING OF PRODUCT :**

Each hose with end fittings is to be clearly marked as follows to avoid any wrong utilization:

- Manufacturer's name or logo
- Type designation
- Maximum working pressure
- Maximum and minimum working temperature
- Date of manufacture
- BUREAU VERITAS' marks

#### **7. OTHERS :**

- 7.1 This approval is given on the understanding that the Society reserves the right to require check test to be carried out on the products at any time and that **HKS GmbH, Rostock / GERMANY** will accept full responsibility for informing shipbuilders, ship owners or their sub-contractors of the proper methods of use and general maintenance of the products and the conditions of this approval.
- 7.2 This certificate supersedes Type Approval Certificate N° 26959/A0 BV issued on 05 Dec 2011 by the Society.

\*\*\* END OF CERTIFICATE \*\*\*