



Marine & Offshore

Certificate number: 11264/D0 BV

File number: ACM 135/1201/1

Product code: 2060H

*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*

**LOROWERK K.H. VAHLBRAUK GmbH + Co. KG**

Bad Gandersheim - GERMANY

*for the type of product*

**PIPES & FITTINGS**

DISCHARGE PIPES and FITTINGS

LORO-X, LORO-X/VAC, LORO-VAC, LORO-XC, LORO-XC/VAC, LORO-XCL, LORO-XCL/VAC and LORO-VAC/CuNiFe

### Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships

BUREAU VERITAS Rules for the Classification of Offshore units

*This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 06 Jan 2025**

**For Bureau Veritas Marine & Offshore,**

At BV HAMBURG, on 06 Jan 2020,

Adama Diene



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 Marine & Offshore. 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 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 Marine & Offshore 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 electronic version is available at: <http://www.veristarnb.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=9a3cdjnim9>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION

**Discharge pipes and fittings, types: LORO-X, LORO-X/VAC, LORO-VAC, LORO-XC, LORO-XC/VAC, LORO-XCL, LORO-XCL/VAC and LORO-VAC/CuNiFe**

1.1 Technical data:

<b>Size range [mm]</b>	DN 40 to DN 250 (LORO-X, LORO-XC) DN 40 to DN 150 (LORO-XCL) DN 40 to DN 70 (LORO-X/VAC, LORO-VAC, LORO-XC/VAC, LORO-XCL/VAC) DN 40 to DN 50 (LORO-VAC/CuNiFe)
<b>Maximum working pressure [bar]</b>	0,5 bar over pressure: LORO-X, LORO-XC, LORO-XCL 0,2 bar absolute, 80% vacuum: LORO-X/VAC, LORO-VAC, LORO-XC/VAC, LORO-XCL/VAC, LORO-VAC/CuNiFe
<b>Maximum working temperature [°C]</b>	95

1.2 Material specification:

<b>Type</b>	<b>Pipe</b>	<b>Sealing element</b>
LORO-X, LORO-X/VAC, LORO-VAC	Carbon steel acc. to EN 1123, Hot dip galvanized and internal epoxy coating	SBR, NBR, EPDM, VMQ, FKM
LORO-XC, LORO-XC/VAC, LORO-XCL, LORO-XCL/VAC	Stainless steel 1.4301 / 1.4571 / 1.4404 acc. to EN 1124	SBR, NBR, EPDM, VMQ, FKM
LORO-VAC/CuNiFe	CuNi10Fe1Mn	SBR, NBR, EPDM, VMQ, FKM

### 2. DOCUMENTS AND DRAWINGS

According to following document:

<b>Designation</b>	<b>Number</b>	<b>Rev.</b>
Manufacturer's catalogue: PROSPEKT SCHIFFBAU.indd	4/LSB/2.7	30.5.18

### 3. TEST REPORTS

Not applicable.

### 4. APPLICATION / LIMITATION

- 4.1 May be used for grey and black water drainage systems and scuppers on board ships:
- above the freeboard deck,
  - below the freeboard deck in enclosed spaces and machinery compartments without direct overboard connection.
- 4.2 Penetration in watertight and fire class divisions is not covered by this approval. The drawing examination is subject to the Society's approval in each case.
- 4.3 Assembly instructions given by the manufacturer are to be complied with.
- 4.4 The pipes are to be properly secured and protected from mechanical damages.

### 5. PRODUCTION SURVEY REQUIREMENTS

- 5.1 The pipes and fittings are to be supplied by **LOROWERK K. H. Vahlbrauk GmbH & Co. KG.** in compliance with the type described in this certificate.
- 5.2 This type of product is within the category HBV of BUREAU VERITAS Rule Note NR320 and as such does not require a BUREAU VERITAS product certificate.

5.3 **LOROWERK K. H. Vahlbrauk GmbH & Co. KG** has to make the necessary arrangements to have its works recognised by BUREAU VERITAS in compliance with the requirements of NR320 for HBV products.

5.4 For information, **LOROWERK K. H. Vahlbrauk GmbH & Co. KG** has declared to BUREAU VERITAS the following production site:

**LOROWERK K. H. Vahlbrauk GmbH & Co. KG, Bad Gandersheim / GERMANY**

## **6. MARKING OF PRODUCT**

The product is to be at least marked with:

- Manufacturer's name or logo
- Type designation
- Pipe standard

## **7. OTHERS**

7.1 It is **LOROWERK K. H. Vahlbrauk GmbH & Co. KG.**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 This certificate supersedes the Type Approval Certificate No. 11264/C0 BV issued on 30 Jan 2014 by the Society.

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