



Certificate number: 23490/C0 BV

File number: ACM 135/1201/3

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

LORO-X ANCHOR CLIP

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 is a renewal of certificate N° 23490/B0 BV expiring on 01/06/2026

This certificate will expire on: 01 Jun 2031

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 11 May 2026,

Heiko Lange

This certificate was created electronically and is valid without signature



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. 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.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

LORO-X anchor clip

1.1 Design:

Pipe system composed of LORO-X pipes, LORO-X push-fit socket with sealing elements and LORO-X anchor clip.

1.2 Identification and technical data:

File number	Size	Maximum working pressure [bar]	Test pressure [bar]	Wall thickness [mm]	
				Steel (LX)	Stainless steel (XCL)
ACM 135/1201/3/1	DN50	12	18	1.5	1.0
ACM 135/1201/3/2	DN70	12	18	1.6	1.2
ACM 135/1201/3/3	DN80	12	18	1.6	1.2
ACM 135/1201/3/4	DN100	12	18	2.0	1.2
ACM 135/1201/3/5	DN125	12	18	2.5	1.5

1.3 Material specification:

Pipes	Hot dip galvanized steel with an additional inside coating (LX) Stainless steel 1.4301/1.4404 (XCL)
Sealing element	NBR/SBR/VQM/EPDM

2. DOCUMENTS AND DRAWINGS:

According to the following drawings:

File number	Designation	Drawing number	Rev.
ACM 135/1201/3/1	Druckrohrschele DN50	08070050W	-
ACM 135/1201/3/2	Druckrohrschele DN70	08070070W	-
ACM 135/1201/3/3	Druckrohrschele DN80	08070080W	-
ACM 135/1201/3/4	Druckrohrschele DN10	08070100W	-
ACM 135/1201/3/5	Druckrohrschele DN125	080700125W	-

3. TEST REPORTS:

- 3.1 Test report no.: 7381218-01: tightness test, burst pressure test, pull-out test and vacuum test performed on 13.02.2008 at LGA QualiTest GmbH in Würzburg / GERMANY.
- 3.2 Test report no.: WTA 72011: fire endurance test performed on 16.01.2008 at WDT 71 in Kiel / GERMANY.
- 3.3 Test report no.: 07-1665: vibration test performed on 04.02.2008 till 11.02.2008 at LOROWERK Premises in Bad Gandersheim / GERMANY.

4. APPLICATION / LIMITATION:

- 4.1 The LORO-X anchor clips are intended to be used for the following services on board:
 - Fire main and deck-wash
 - Water spray systems
 - Sprinkler and foam firefighting systems.
- 4.2 On board installation is to be as per BUREAU VERITAS Rules requirements and manufacturer's recommendations.
- 4.3 The piping with their connections is to be at any time accessible.
- 4.4 For bulkhead unions, the requirements given in BUREAU VERITAS Rules have to be complied with.

- 4.5 When soft seals are used for bulkhead unions, it must be ensured that water or fire cannot penetrate through the watertight bulkheads or decks.
- 4.6 In all cases, the associated pipes are to be suitably adjusted, aligned and anchored.
- 4.7 The manufacturer's assembly instructions are to be complied with.
- 4.8 The nature of materials, joints included, should be suitable for the intended service.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 The LORO-X anchor clips 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:

Each LORO-X anchor clip shall be marked with at least:

- Manufacturer's name or logo
- Model
- Size
- Nominal diameter
- Nominal pressure

The permanent label for the product shall remain legible under normal handling and installation practices.

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 N° 23490/B0 BV issued on 01 Jun 2021 by the Society.

*** END OF CERTIFICATE ***