



Marine &amp; Offshore

Certificate number: 56386/A1 BV

File number: ACM 135/2792/01

Product code: 2104I

*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*

**CAST SpA**

Volpiano (TO) - ITALY

*for the type of product*

### NON-METALLIC HOSES (FLEXIBLE PIPES) ASSEMBLIES

Flexible Hose Assemblies Types 1SN, 2SN, 4SP, 4SH, 1SC, 2SC, R13, Power (2SC or 2SN-K) & Diamante (2SC).

#### Requirements:

Bureau Veritas Rules for the Classification of Steel Ships  
Bureau Veritas Rules for the Classification of Offshore Units  
Bureau Veritas Rules for the Classification of Naval Ships  
Bureau Veritas Rules for the Classification of Yachts

*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: 11 May 2024**

**For Bureau Veritas Marine & Offshore,**

At BV NAPOLI, on 08 Feb 2023,

Sandro BRUSEGAN

***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 4 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION

**Flexible Hose Assemblies Types 1SN, 2SN, 4SP, 4SH, 1SC, 2SC, R13, Power (2SC or 2SN-K) & Diamante (2SC).**

#### 1.1 Ratings

- 1SN according to EN 853

DN	6	8	10	12	16	19	25	31	38	51
Internal Diameter (mm)	6,6	8,3	9,9	13,0	16,4	19,5	26,0	32,5	38,7	51,1
Max. Working Pressure (bar)	225	215	180	160	130	105	88	63	50	40

Temperature range: - 40°C to + 100°C

The maximum working pressure is not to exceed one quarter of the burst pressure at the service temperature.

- 2SN according to EN 853

DN	6	8	10	12	16	19	25	31	38	51
Internal Diameter (mm)	6,6	8,3	9,9	13,0	16,4	19,5	26,0	32,5	38,7	51,1
Max. Working Pressure (bar)	400	350	330	275	250	215	165	125	90	80

Temperature range: - 40°C to + 100°C

The maximum working pressure is not to exceed one quarter of the burst pressure at the service temperature.

- 4SP according to EN 856

DN	10	12	16	19	25
Internal Diameter (mm)	9,9	13,0	16,4	19,5	26,0
Max. Working Pressure (bar)	445	415	350	350	280

Temperature range: - 40°C to + 100°C

The maximum working pressure is not to exceed one quarter of the burst pressure at the service temperature.

- 4SH according to EN 856

DN	19	25	31	38	51
Internal Diameter (mm)	19,5	26	32,5	38,7	51,1
Max. Working Pressure (bar)	420	380	325	290	250

Temperature range: - 40°C to + 100°C

The maximum working pressure is not to exceed one quarter of the burst pressure at the service temperature.

- 1SC according to EN 857

DN	6	8	10	12
Internal Diameter (mm)	6,6	8,3	9,9	13,0
Max. Working Pressure (bar)	225	215	180	160

Temperature range: - 40°C to + 100°C

The maximum working pressure is not to exceed one quarter of the burst pressure at the service temperature.

- 2SC according to EN 857

DN	6	8	10	12	16	19	25
Internal Diameter (mm)	6,6	8,3	9,9	13,0	16,4	19,5	26
Max. Working Pressure (bar)	400	350	330	275	250	215	165

Temperature range: - 40°C to + 100°C

The maximum working pressure is not to exceed one quarter of the burst pressure at the service temperature.

- R13 according to EN 856

DN	19	25	31	38	51
Internal Diameter (mm)	19,5	26	32,5	38,7	51,1
Max. Working Pressure (bar)	345	345	345	345	345

Temperature range: - 40°C to + 120°C

The maximum working pressure is not to exceed one quarter of the burst pressure at the service temperature.

- Power (2SC or 2SN-K)

DN	6	8	10	12
Internal Diameter (mm)	6,6	8,3	9,9	13,0
Max. Working Pressure (bar)	450	420	385	345

Temperature range: - 40°C to + 100°C

The maximum working pressure is not to exceed one quarter of the burst pressure at the service temperature.

- Diamante (2SC)

DN	6	8	10	12
Internal Diameter (mm)	6,6	8,3	9,9	13,0
Max. Working Pressure (bar)	400	350	330	275

Temperature range: - 40°C to + 100°C

The maximum working pressure is not to exceed one quarter of the burst pressure at the service temperature.

## 1.2 Material specification

Part	Material
Tube	oil resistant synthetic rubber
Reinforcement	1 steel wire braid (1SC/1SN) 2 steel wire braids (2SC/2SN/Diamante/Power) 4 steel spiral layers (4SP/4SH) 4-6 high resistance steel (R13)
Cover	oil resistant synthetic rubber
End fittings	Stainless steel, Carbon Steel

*When other choices of materials are used per manufacturer's recommendations, the BV agreement is to be obtained.*

## 2. DOCUMENTS AND DRAWINGS

- CAST SpA catalogue dated June 2016 Rev 1/C
- "Hoses range extension" catalogue dated November 2013

*No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.*

## 3. TEST REPORTS

### 3.1 Burst test reports:

- N° 11/17 dated 24/07/2017, N° 05/14 dated 07/04/2014, N° 06/14 dated 07/04/2014, N° 12/12 dated 19/11/2012, N° 18/18 dated 29/11/2018.

### 3.2 Fire resistance test reports (according to ISO 15540):

- N° 1554.0IS0110/12, 1555.0IS0110/12, 1556.0IS0110/12 dated 03/12/2012 (1SN)
- N° 1560.0IS0110/12, 1561.0IS0110/12, 1562.0IS0110/12 dated 03/12/2012 (2SN)
- N° 202.0IS0110/14, 203.0IS0110/14, 204.0IS0110/14, 208.0IS0110/14 dated 03/03/2014 (4SP)
- N° 205.0IS0110/14, 206.0IS0110/14, 207.0IS0110/14, 210.0IS0110/14, 211.0IS0110/14, 212.0IS0110/14 dated 03/03/2014 (4SH)
- N° 1565.0IS0110/12, 1566.0IS0110/12 dated 04/12/2012 (1SC)
- N° 1570.0IS0110/12, 1571.0IS0110/12, 1572.0IS0110/12 dated 04/12/2012 (2SC)
- N° 218.0IS0110/14, 218.0IS0110/14 dated 03/03/2014 (Diamante)
- N° 216.0IS0110/14, 217.0IS0110/14 dated 03/03/2014 (Power)
- N° 213.0IS0110/14, 214.0IS0110/14, 215.0IS0110/14 dated 03/03/2014 (R13)

### 3.3 Impulse test reports N° 19/13, 16/12 & 16/11

### 3.4 Cold flexibility, Oil resistance, Ozone & change in length test reports dated 19/07/2012, 07/02/2014 & 12/02/2014

### 3.5 Change in length test reports dated 30/01/2014 & 31/01/2014

#### **4. APPLICATION / LIMITATION**

4.1 - May be used on the following services:

- Sea water and fresh water, compressed air, fuel oil, lubricating oil, hydraulic oil (except HFD-R, HFD-S, HFD-T).

4.2 - End fittings as per manufacturer's catalogue. The hoses are to be entirely assembled in the manufacturer's workshop, by authorized sub-contractors or by authorized customers.

4.3 - 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.

4.4 - The use of stainless steel is restricted as per Bureau Veritas rules.

4.5 - Taper threaded end connections are not to be used for oil circuits in engine rooms nor any place containing an ignition source unless otherwise suitably screened at the Society's Surveyor satisfaction.

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

5.1 - The products are to be supplied by **CAST SpA** in compliance with the type 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 - BV product certificate is required.

5.4 - Each hose with end fittings is to be hydraulically pressure tested to 1.5 times the maximum working pressure and provided with the manufacturer's pressure test report and conformity of production.

5.5 - For information, **CAST SpA** has declared to Bureau Veritas the following production site:

- **CAST SpA: Strada Brandizzo 404/408 bis, 10088 Volpiano (TO), ITALY**

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

Each hose with end fittings is to be clearly and indelibly marked with at least:

- Manufacturer name or logo
- Type designation
- Date of manufacture
- Nominal Diameter
- Society's brand as relevant
- Design pressure
- Temperature range

#### **7. OTHERS**

It is **CAST SpA**'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.

*This certificate supersedes the Type Approval Certificate N° 56386/A0 BV issued by the Society.*

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