

TYPE APPROVAL CERTIFICATE

Certificate no.:
TAP00001NF
Revision No:
2

This is to certify:

that the **Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings**

with type designation(s)

4SP (EN856), 4SH (EN856), R13 (EN856)

issued to

CAST S.p.A.

Volpiano, TO, Italy

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems

DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021

DNV class programme DNV-CP-0183 – Type approval – Flexible non-metallic hoses

Application:

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.

Type:	Temperature range:	Max. working press.:	Sizes:
4SP (EN856)	-40°C to +100°C	280 to 445 bar	DN10,12,16,19,25
4SH (EN856)	-40°C to +100°C	250 to 420 bar	DN19,25,31,38,51
R13 (EN856)	-40°C to +120°C	345 bar	DN19,25,31,38,51

Issued at **Høvik** on **2024-02-21**

for **DNV**

This Certificate is valid until **2028-12-31**.

DNV local unit: **Italy/Malta CMC**

Approval Engineer: **Tobias Berntsen**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Three types of hose assemblies constructed according to EN856:

Designation	4SP	4SH	R13
Code	7308	7309	7310
Tube	Oil resistant synthetic rubber		
Reinforcement:	High Tensile Steel Wire		
Spirals	4	4	4-6
Cover	Black synthetic rubber resistant to abrasion, oils, fuels and ozone.		

Hose Manufacturer: SEMPERIT Technische Produkte Gesellschaft G.m.b.H, Austria

Coupling designation:

4SP

Standard couplings: Sizes DN10, DN12, DN16, DN19, DN25 (series 70/71/80/81)

Interlock coupling: Sizes DN19, DN25 (series 80/81)

4SH

Standard couplings: Sizes DN19, DN25, DN31, DN38, DN51 (series 70/71/80/81)

Interlock couplings: Sizes DN19, DN25, DN31, DN38, DN51 (series 80/81)

R13

Interlock couplings: Sizes DN19, DN25, DN31, DN38, DN51 (series 80/81)

Couplings Material: Carbon steel UNI EN ISO 683-4, UNI EN 10277, UNI EN 10025-1 /-2
 Stainless steel UNI EN 10088-3, UNI EN 10263-5

Coupling manufacturer: CAST S.P.A., Italy

Application/Limitation

This certificate is valid for the specific assembly of hose and coupling type as specified, assembled and delivered by the holder (named as manufacturer) of this certificate.

Hose assemblies covered by this certificate may be used in:

- Petroleum based fluids (Mineral oils) and Biological Oils (temperature as stated on the front page);
- Water Based Fluids and compressed air (-40°C to +70 °C);
- Water (0°C to 70°C).

Maximum working pressure in bar:

Hose Size			4SP	4SH	R13
DASH	DN	inch			
-06	10	3/8"	445	-	-
-08	12	1/2"	415	-	-
-10	16	5/8"	350	-	-
-12	19	3/4"	350	420	345
-16	25	1"	280	380	345
-20	31	1 1/4"	-	325	345
-24	38	1 1/2"	-	290	345
-32	51	2"	-	250	345

Flexible hoses are only to be used in short lengths where it is necessary due to vibrations or flexible mounting of the machinery. The hoses shall not replace/be used where permanent piping is possible/required.

The hose assemblies must only be fitted in places where they are always accessible. Flexible hoses of these types are not to be used on boiler fronts.

The cover of hoses for gaseous applications shall be pin-pricked.

The hoses shall not be used in systems subject to pressure below atmospheric or vacuum conditions.

Production testing

All hose assemblies delivered under the DNV type approval scheme shall be subject to a pressure test at 1.5 times the maximum working pressure and shall be delivered with the pressure test report with reference to this type approval certificate.

Type Approval documentation

Cast catalogue Issued: 1/C - Printed: June 2016

Data sheets for couplings series 70/71 and 80/81

Test reports on rubber hoses R13 dated 2019-01-24

Burst pressure test reports numbers V.d.P. n°05/14 dated 2014-04-07 & V.d.P. n°18/18 dated 2018-11-29 & V. d. P. n°20/23 dated 2023-10-23

LAPI fire test report numbers: 202,203,204,205,206,207,208,210,211,212,213,214,215.0IS0110/14

Impulse test report numbers V.d.P. N° 16/12 on 4SH, 4SP and R13 hoses

Authorization letter from Semperit dated 2019-01-14 with reference to TAP0000164

Tests carried out

Dimensional Check Test, Change in Length Test, Burst Test, Cold Flexibility Test, Ozone Resistance Test, Impulse Test, Oil Resistance Test, and fire resistance test.

Marking of product

For traceability to this Type Approval, the products are at least to be marked with:

- Hose manufacturer's name or trademark;
- Date of manufacture (month/year);
- Designation type reference;
- Nominal diameter;
- Pressure rating;
- Temperature rating

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNV-CP-0338.