

TYPE APPROVAL CERTIFICATE

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 GL rules for classification – Ships Pt.4 Ch.6 Piping systems**DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018****DNV GL class programme DNVGL-CP-0183 – Type approval – Flexible hoses****Application :****Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV GL.**

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 **2019-02-08**This Certificate is valid until **2023-12-31**.for **DNV GL**DNV GL local station: **Milan**Approval Engineer: **Adel Samiei**

Marianne Spæren Marveng
Head of Section

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.



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 10087, UNI EN 10277-3, 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

Job Id: **262.1-016836-2**
Certificate No: **TAP00001NF**

All hose assemblies delivered under the DNV GL 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

Tests carried out

Dimensional Check Test, Change in Length Test, Burst Test, Cold Flexibility Test, Ozone Resistance Test, Impulse Test, Oil Resistance Test, 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 GL 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 DNVGL-CP-0338.