



Certificate no.:
TAP0000347

TYPE APPROVAL CERTIFICATE

This is to certify:

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

with type designation(s)

INTERPUMP HYSOPRESS 3K, INTERPUMP HYSOPRESS 4K, INTERPUMP HYSOPRESS 5K, INTERPUMP HYSOPRESS 6K

issued to

I.M.M. Hydraulics S.p.A.

Atessa, CH, 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.

Issued at **Høvik** on **2026-02-11**

This Certificate is valid until **2031-02-10**.

for **DNV**

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

Approval Engineer: **Marc Avice**

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 USD 300 000.

Product description

Four different types of non-metallic hoses with permanently attached couplings constructed according to ISO 18752.

INTERPUMP HySopress 3K (according to ISO 18752 Type CC)

Tube : Synthetic rubber, extruded whole without joints, of uniform thickness
Reinforcement : 4 steel wire spirals
Cover : Anti-abrasive synthetic rubber, resistant to oils, fuels and atmospheric conditions, MSHA.
Fitting : N Series

INTERPUMP HySopress 4K (according to ISO 18752 Type CC)

Tube : Synthetic rubber, extruded whole without joints, of uniform thickness
Reinforcement : 4 steel wire spirals
Cover : Anti-abrasive synthetic rubber, resistant to oils, fuels and atmospheric conditions, MSHA.
Fitting : N Series

INTERPUMP HySopress 5K (according to ISO 18752 Type CC)

Tube : Synthetic rubber, extruded whole without joints, of uniform thickness
Reinforcement : 4 steel wire spirals
Cover : Anti-abrasive synthetic rubber, resistant to oils, fuels and atmospheric conditions, MSHA.
Fitting : N Series

INTERPUMP HySopress 6K (according to ISO 18752 Type CC)

Tube : Synthetic rubber, extruded whole without joints, of uniform thickness
Reinforcement : 4-6 High tensile steel spirals (4 spirals up to 1", 6 spirals from 1 1/4")
Cover : Anti-abrasive synthetic rubber, resistant to oils, fuels and atmospheric conditions, MSHA.
Fitting : N Series

Couplings material:

Cabon steel: 1.0737 (11SMnPb37), EN 10277-3
1.0715 (11SMn30), EN 10277-3
1.0214 (C10C), EN 10263-2
S355J2H, EN 10210-1/2

Stainless steel: 1.4404 (AISI 316L), EN 10088-3

Hose Manufacturer:

I.M.M Hydraulics S.P.A - Via Italia, 49, 66041 Atessa (CH), Italy - for hose up to 1".

I.M.M Hydraulics S.P.A - Zona Ind.le C.da Giarnera Grande, 71022 Ascoli Satriano (FG), Italy - for hoses from 1" to 2".

Coupling Manufacturer: IMM Hydraulics, Atessa (CH) & Ascoli Satriano (FG), 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 size		Max. Working pressure (bar)			
DN	Dash	INTERPUMP HySOpress 3K	INTERPUMP HySOpress 4K	INTERPUMP HySOpress 5K	INTERPUMP HySOpress 6K
10	-06	-	280	350	420
12	-08	-			
16	-10	-			
19	-12	-			
25	-16	-			
31	-20	210			
38	-24				

Hose assemblies covered by this certificate are approved for use in the temperature range and fluid medium as listed below:

Fluid medium	Temperature range
Oil-based hydraulic fluid	-40°C to +120°C

Water-based hydraulic fluid	-40°C to +70°C
Water and compressed air	0°C to +70°C

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

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 hoses are to be mounted in accordance with the manufacturer's instructions.

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.

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions.

The outer end of the pipe coupling (performing the connection to the fixed piping) is not covered by this certificate and shall follow the below requirements:

- Flanged ends shall be according to a recognized standard.
- Slip-on threaded joints having pipe threads where pressure-tight joints are made on the threads with parallel or tapered threads, shall comply with requirements of a recognized standard. Limitations stated in DNV-RU-SHIP Pt.4 Ch.6 Sec.9 [5.2.6] to be followed.
- If these outer ends are going to be part of a mechanical joint as covered by DNV-RU-SHIP Pt.4 Ch.6 Sec.9 [Table 10], then they shall be separately type approved.

Test carried out

Dimensional Check Test, Change in Length Test, Leakage test, vacuum test, Burst Test, Cold Flexibility Test, Ozone Resistance Test, Impulse Test, fluid resistance Test and Fire Test.

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

Tests carried out

Fire test, burst test, dimensional check test, change in length test, cold flexibility test, oil resistance test, cover adhesion test, ozone resistance test, impulse test, abrasion resistance, vacuum resistance test, fluid 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;
- ISO document reference;
- designation type reference;
- nominal diameter;
- Max working pressure;
- The quarter and last two digits of the year of manufacture.

Periodical assessment

This certificate is only valid if required periodical assessments are carried out with satisfactory results.

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.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>.