



Marine & Offshore

Certificate number: 40222/B0 BV

File number: ACM 135/2751/01

Product code: 21041

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

I.M.M. HYDRAULICS S.p.A.

ATESSA-CH - ITALY

for the type of product

NON-METALLIC HOSES (FLEXIBLE PIPES) ASSEMBLIES

HIPAC 1SC, LongLife 1SC, HIPAC 2SC, LongLife 2SC, KAIZEN 2SN, Hypress 4SH, Hypress 4SP & Hypress R15

Requirements:

- BUREAU VERITAS Rules for the Classification of Steel Ships
- 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: 07 May 2026

For Bureau Veritas Marine & Offshore,

At BV VENEZIA, on 07 May 2021,

Sandro BRUSEGAN



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 Hoses Type HIPAC 1SC, LongLife 1SC, HIPAC 2SC, LongLife 2SC, KAIZEN 2SN, Hypress 4SH, Hypress 4SP & Hypress R15

1.1 - Ratings

Hose type HIPAC 1SC / Longlife 1SC

Diameter (mm)	6.4	8.0	9.5	12.7	16.0	19.0	25.4	31.8	38.1	50.8	63.5	76.2
Maximum working pressure (bar)	250	250	250	200	150	150	110	100	90	75	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

Hose type HIPAC 2SC / Longlife 2SC

Diameter (mm)	6.4	8.0	9.5	12.7	16.0	19.0	25.4	31.8	38.1	50.8	63.5	76.2
Maximum working pressure (bar)	430	400	350	310	280	240	210	160	150	100	80	65

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

Hose type KAIZEN 2SN

Diameter (mm)	6.4	8.0	9.5	12.7	16.0	19.0	25.4	31.8	38.1	50.8
Maximum working pressure (bar)	420	360	350	290	250	215	175	140	125	90

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

Hose type Hypress 4SH

Diameter (mm)	19	25.4	31.8	38.1	50.8
Maximum working pressure (bar)	420	385	350	300	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

Hose type Hypress 4SP

Diameter (mm)	6.4	9.5	12.7	16.0	19.0	25.4	31.8	38.1	50.8
Maximum working pressure (bar)	450	445	415	350	350	280	210	185	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

Hose type Hypress R15

Diameter (mm)	19	25.4	31.8	38.1	50.8
Maximum working pressure (bar)	420	420	420	420	420

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

1.2 - Material specification

Internal hose	Synthetic rubber
Reinforcement	One/two/four/six high tensile steel braids/spirals
Cover	Oil resistant synthetic rubber
Fittings	11SMnPb37 / C4C / C10C / S355J2 AISI 316L

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

2. DOCUMENTS AND DRAWINGS

- IMM technical sheets as provided on 21/09/2016
- LongLife 1SC data sheet dated 15/01/2021
- LongLife 2SC data sheet dated 15/01/2021
- Material declaration for fittings N°QA017/21 dated 31/03/2021
- Manual of installation, use and maintenance N° CAT-IFS-G Rev. 1.1

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 - Fire resistance tests according to ISO 15540: 1999 and ISO 15541: 1999 were carried out at LAPI Laboratory (Italy) and found in order per the following test reports N° 0987/MED-B/616, N° 0987/MED-B/612, N° 0987/MED-B/613, N° 0987/MED-B/614, N° 892.0IS0110/13, N° 893.0IS0110/13, N° 894.0IS0110/13, N° 889.0IS0110/13, N° 890.0IS0110/13, N° 891.0IS0110/13, N° 1775.0IS0110/09, N° 210.0IS0110/10, N° 211.0IS0110/10, N° 892.0IS0110/13, N° 1112.0IS0110/12, N° 1115.0IS0110/12, N° 1113.0IS0110/12, N° 1116.0IS0110/12, N° 1114.0IS0110/12, N° 1117.0IS0110/12.

3.2 - Burst test reports witnessed by a BV surveyor performed on representative sizes of type HIPAC 1SC, LongLife 1SC, HIPAC 2SC, LongLife 2SC, KAIZEN 2SN, 4SH, 4SP & Hypress R15 dated 16/02/2016, 06/05/2015 & 17/12/2015.

3.3 - Burst test report dated 06/05/2015 witnessed by a BV Surveyor (LongLife 2SC - DN25)

3.4 - Tests carried out: dimensional check, proof pressure test, change in length, burst test, ozone resistance test, impulse test, cold flexible test. Manufacturer's test reports dated 14/12/2009 for 4SH, dated 09/06/2009 & 26-27/07/2012 for 4SP.

3.5 - Cold bend test reports witnessed by an IACS member surveyor performed on representative sizes of type LongLife 1SC, HIPAC 2SC & KAIZEN 2SN dated 18/05/2011 & 06/05/2015.

3.6 - Hydraulic pressure impulse test with flexing and vibration test not performed.

4. APPLICATION / LIMITATION

4.1 - May be used for the following services on board: Fuel oil (not high pressure fuel oil injection), lubricating oil, hydraulic oil, fresh water and sea water.

4.2 - End fittings as per manufacturer's catalogue. The hoses are to be entirely assembled in the manufacturer's workshop.

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 length up to 2 m. The hoses are to be installed in clearly visible and readily accessible locations at all times

4.4 - The hoses assemblies are to be installed according to manufacturer's instructions and 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.

4.6 - The use of stainless steel is to be restricted as per the requirements of the Bureau Veritas Rules.

4.7 - Not to be used in case of high level of vibrations where fitted to engines, pumps, compressors and other sources of high vibrations

4.8 - Not to be used where pressure impulses may occur.

5. PRODUCTION SURVEY REQUIREMENTS

5.1 - The products are to be supplied by **I.M.M. HYDRAULICS S.p.A.** 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 assembly 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, **I.M.M. HYDRAULICS S.p.A.** has declared to Bureau Veritas the following production sites:

- **I.M.M. HYDRAULICS S.p.A.: Via Italia 49-51, 66041 ATESSA (CH), ITALY**
- **I.M.M. HYDRAULICS S.p.A.: STAB 03: Contrada Giarnera Grande, 71022 Ascoli Satriano (FG), ITALY**
- **I.M.M. Hydro Est (Catcau): Nr 353, 407180 Catcau, ROMANIA**
- **I.M.M. Hydro Est (Dej): Str. Henri Coanda nr. 9, 405200 Dej, ROMANIA**

6. MARKING OF PRODUCT

Each hose assembly shall be clearly and indelibly marked with at least:

- Manufacturer name or logo
- Date of manufacture (month/year)
- Type designation
- Nominal Diameter
- Pressure rating
- Temperature rating
- Society's brand as relevant

7. OTHERS

It is **I.M.M. HYDRAULICS S.p.A.**'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° 40222/A2 BV issued by the Society.

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