Certificate No:
TAP00002AU

TYPE APPROVAL CERTIFICATE

This is to certify:

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

with type designation(s)
Mathilda 1436-50

Issued to
Hydroscand Automotive AB
GÖTEBORG, Sweden

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.

Temperature range:	**-40°C to +150°C**
Max. working press.:	**See page 2**
Sizes:	**See page 2**

Issued at **Høvik** on **2023-07-13**
This Certificate is valid until **2023-10-01**.
DNV local station: **Sweden CMC**

Approval Engineer: **Andreas Hansen**

for **DNV**

Zeinab Sharifi
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.

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

HYDROSCAND article number 1436-50 MATHILDA with permanently attached couplings, manufactured from the following materials:

Inner tube	:	PTFE
Reinforcement	:	Single stainless steel wire braid, AISI 304
Cover	:	Thermoplastic polyurethane (TPU)
Couplings	:	Hydroscand 42- series / TIEFFE hose fittings “CX”
Ferrule	:	4200-07, Carbon steel 1.0718 (11SMnPb37)

Hose manufacturing location: Polyhose India Pvt. Ltd., India

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 are approved to be used for systems conveying fuel oil, lube oil, water, and compressed air applications where no pressure impulse and/or high level of vibrations are expected.

For use in gas applications the hose cover is to be pin pricked.

Part number	Hose ID (mm)	Hose ID (inch)	Hose OD (mm)	Max. working pressure (bar)	Min. bend radius (mm)	Weight (kg/m)
1436-50-04	6,4	1/4"	12,0	150*	38	0,17
1436-50-06	9,5	3/8"	15,5	100	64	0,23

*) Maximum working pressure for hose size -4 (ID 6,4 mm) for applications where fire resistance is required is 10 bar.

Flexible hoses are only to be used 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 and must only be fitted in places where they are always accessible.

Hoses covered by this certificate shall not be installed in systems with pressure below atmospheric or vacuum conditions.

Means shall be provided to shut off flexible hoses used in systems for compressed air, lubricating oil and fuel oil.

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 joints having pipe threads where pressure-tight joints are made on the threads. Limitations stated in DNV-RU-SHIP Pt.4 Ch.7 Sec.9 [5.2.6] to be followed.
- If these outer ends are going the be part of a mechanical joint as covered by DNV-RU-SHIP Pt.4 Ch.7 Sec.9 [Table 10], then they shall be separately type approved.

Production testing

All hose assemblies delivered under the DNV type approval scheme shall be hydrostatically tested to a pressure of 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

Document No.	Title	Rev.	Date
-	Authorization letter from Polyhose	-	2018-09-24
-	Polyhose PH779 Hose Datasheet	-	-
-	Hydroscand 1436-50-06VE Mathilda P.T.F.E datasheet	-	2018-10-01
-	Tieffe S.p.A Hydraulic hose fittings CX series catalogue	-	2011
Drawings:			
42000704	Ferrule 1SC Non-Skive for size -4	A	2013-05-16
42000706	Ferrule 1SC Non-Skive for size -6	A	2013-05-16
-	Dimensions of Hydroscand standard 42-series inserts Ed.9	-	2012-05-02
Test reports:			

Document No.	Title	Rev.	Date
032-18	Fire resistance test report by IHA	-	2018-07-03
664.0IS0110/16	Fire test reports from LAPI	-	2016-04-11
7P00200	Fire test report from SP Sweden	-	2017-01-19
-	Burst / change in length test report, witnessed by DNV	-	2018-04-20
PH/SAB/18-005	PH779-04 dimensional check / leakage / cold flexibility test	-	2018-07-31
PH/SAB/18-004	PH779-06 dimensional check / leakage / cold flexibility test	-	2018-07-31

Tests carried out

Static burst test, dimensional check test, change in length test, leakage test, cold flexibility test, and fire resistance test.

Marking of product

For traceability to this type approval the products are at least to be marked with:
- Manufacturer's name or trademark
- Type designation
- Maximum working pressure
- Size

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.