

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings**with type designation(s)
MXG4K XTP

Issued to

Gates UK Ltd
St. Neots, Cambridgeshire, United Kingdom

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.****Temperature range:** -40°C to +121°C (see page 2)
Max. working press.: 280 bar(g)
Sizes: DN10, 12, 16, 19 and 25Issued at **Høvik** on **2020-10-12**for **DNV GL**This Certificate is valid until **2025-10-11**.DNV GL local station: **Manchester**Approval Engineer: **Maheshraja Venkatesan****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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.



Job Id: **262.1-032984-1**
Certificate No: **TAP000026Z**

Product description

Flexible rubber hose MXG4K XTP with permanently attached couplings constructed according to SAE J517 type 100R19 and ISO 18752 280DC: -

Tube : Black, oil resistant, synthetic rubber (Nitrile) tube;
Reinforcement : two layers of braided, high-tensile steel wire;
Cover : Black, XtraTuff™ Plus abrasion resistant, ozone resistant, synthetic rubber
End fittings : GlobalSpiral™ (GS)

Material of construction for couplings: ASTM A108 grade 1215

Manufacturing location: -

Hoses : Gates India Private Limited,
Ambala-Chandigarh Highway, Lalru, Punjab 140501, India.

Couplings : (1) Gates India Private Limited,
Ambala-Chandigarh Highway, Lalru, Punjab 140501, India
(2) Gates Fluid Power Technologies (Changzhou) Co., Ltd.,
#11 Kohler Rd National Hi-tech District, Changzhou, China, 213022
(3) Gates Hydraulics s.r.o.,
Dětmarovická 409/1, 733 01 Karviná, Czech Republic
(4) Gates Corporation. 1001 Petty Dr, Versailles, Missouri, US, 65084

Assembling locations: -

(1) Gates (U.K.) Limited,
5, Alpha Drive, Eaton Socon,
Cambridgeshire, PE19 8JJ, United Kingdom.

(2) Gates Fluid Power Technologies (Changzhou) Co., Ltd.
#11 Kohler Rd National Hi-tech District, Changzhou, China, 213022

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 in:

- petroleum based hydraulic fluids (-40°C to +121°C)
- water based hydraulic fluids (-40°C to +70°C)
- water fluids (0°C to +70°C)

Hose assemblies covered by this certificate are not allowed to be used in systems related to DNV GL classed drilling units (applications covered by DNVGL-OS-E101).

Pressure ratings:

Size (Inside diameter)			MXG4K XTP	
			Hose item code	Maximum working pressure (bar)
DN	Dash	in		
10	-6	3/8	6MXG4K XTP	280
12	-8	1/2	8MXG4K XTP	280
16	-10	5/8	10MXG4K XTP	280
19	-12	3/4	12MXG4K XTP	280
25	-16	1	16MXG4K XTP	280

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.

Hose assemblies covered by this certificate shall not be used in system subject to pressure below atmospheric or vacuum condition.

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

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 DNVGL-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 Table 10 DNVGL-RU-SHIP Pt.4 Ch.6 Sec.9, then they shall be separately type approved.

Production testing

All hose assemblies delivered under the DNV GL 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

<u>Document No.</u>	<u>Rev.</u>	<u>Title</u>
-	-	Gates Hose catalog for type MXG4KXTP dated 14NOV2019
-	-	GS Coupling catalog
-	-	Submission for DNV GL Type Approval – MXG 4K XTP Hose with GS Couplings, dated 26 March 2020
LOCC12743	-	Fire test report for type 6MXG4K XTP witnessed by DNV GL dated 2020-09-02
LOCC12743	-	Fire test report for type 10MXG4K XTP witnessed by DNV GL dated 2020-09-02
LOCC12666	-	Fire test report for type 16MXG4K XTP witnessed by DNV GL dated 2020-05-13
WR7462	-	Burst test reports for Gates UK assembly location witnessed by DNV GL dated 29.06.2020
LOCC12743	-	Burst test reports for Gates China assembly location witnessed by DNV GL dated 2020-06-03

Tests carried out

Dimensional check, change in length, abrasion resistance, burst pressure, proof pressure, impulse test, oil resistance test, ozone resistance test, cold flexibility test, cover adhesion test, fire test

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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.