



Certificate no.:  
**TAD00001MT**

# TYPE APPROVAL CERTIFICATE

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**This is to certify:**

**that the Miscellaneous**

with type designation(s)  
**BLACK GOLD BOP 5000 MEGASHIELD**

issued to  
**Gates Engineering & Services UK Ltd**  
**Cramlington, Northumberland, United Kingdom**

is found to comply with  
**DNV-OS-E101 – Drilling facilities, Edition July 2024**

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**Application:**

**Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.**

Issued at **Høvik** on **2025-09-24**

This Certificate is valid until **2030-09-23**.

for **DNV**

DNV local unit: **UK & Ireland CMC & VMC**

Approval Engineer: **Maheshraja Venkatesan**

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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

**BLACK GOLD™ BOP 5000 MEGASHIELD** - Flexible hoses of non-metallic material with permanently fitted couplings for use in surface BOP control lines on drilling rigs.

### Specification:

DNV Class Programme DNV-CP-0183, Edition January 2018  
Fire test according to: API Specification 16D, Third edition (Nov. 2018)

| Designation | Hose size |        | Design Pressure |      | Design Temperature |              | No. of wire spirals/ braids | Minimum bend radius (mm) | Inner tube/ Outer Cover |
|-------------|-----------|--------|-----------------|------|--------------------|--------------|-----------------------------|--------------------------|-------------------------|
|             | DN        | inch   | bar             | psi  | Min. °C (°F)       | Max. °C (°F) |                             |                          |                         |
| 8BOP        | 12        | 1/2"   | 345             | 5000 | -40 (-40)          | 100 (212)    | 2                           | 180                      | NBR/ CR                 |
| 12BOP       | 19        | 3/4"   | 345             | 5000 | -40 (-40)          | 100 (212)    | 4                           | 240                      | NBR/ CR                 |
| 16BOP       | 25        | 1"     | 345             | 5000 | -40 (-40)          | 100 (212)    | 4                           | 300                      | NBR/ CR                 |
| 20BOP       | 31        | 1 1/4" | 345             | 5000 | -40 (-40)          | 100 (212)    | 6                           | 420                      | NBR/ CR                 |
| 24BOP       | 38        | 1 1/2" | 345             | 5000 | -40 (-40)          | 100 (212)    | 6                           | 500                      | NBR/ CR                 |
| 32BOP       | 51        | 2"     | 345             | 5000 | -40 (-40)          | 100 (212)    | 6                           | 635                      | NBR/ CR                 |

| Designation | Hose size |        | End fittings with fire protection |              |                                      |                                                                     |
|-------------|-----------|--------|-----------------------------------|--------------|--------------------------------------|---------------------------------------------------------------------|
|             | DN        | inch   | Fittings designation              |              | Stainless Steel Over-Ferrule Sleeves | Protection tapes                                                    |
|             |           |        | Stem Type                         | Ferrule Type |                                      |                                                                     |
| 8BOP        | 12        | 1/2"   | 8B-SS                             | 8B1F-1SS     | 8FT1F-1-SS                           | Fire tape: HTG-1 (72770010) and<br>Silicone tape: PST-16 (72770030) |
| 12BOP       | 19        | 3/4"   | 12S-SS                            | 12S1F-4SS    | 12FT1F-1-SS                          |                                                                     |
| 16BOP       | 25        | 1"     | 16S-SS                            | 16S1F-4SS    | 16FT1F-1-SS                          |                                                                     |
| 20BOP       | 31        | 1 1/4" | 20S-SS                            | 20S1F-6SS    | 20FT1F-1-SS                          |                                                                     |
| 24BOP       | 38        | 1 1/2" | 24S-SS                            | 24S2F-6SS    | 24FT1F-1-SS                          |                                                                     |
| 32BOP       | 51        | 2"     | 32S-SS                            | 32S2F-6SS    | 32FT1F-1-SS                          |                                                                     |

### Material of construction for end fittings:

Stainless steel ASTM A276 grade 316

## Application/Limitation

The hose assemblies covered by this Certificate are approved for use in surface BOP control lines on drilling rigs.

All hose assemblies delivered under this Type Approval shall be following the assembly procedure issued by the certificate holder.

The hose assemblies connected to the surface BOP control lines on drilling rigs shall be supplied with fire protection sleeve as specified in this certificate.

Each hose assembly is, before delivery, to be hydraulic pressure tested to 1.5 times the maximum working pressure and delivered with the manufacturer's Works certificate.

End connectors shall be of standard design according to DNV-OS-E101 Ch.3 Sec.3 [Table 15].

The end connectors that are NOT according to recognised international standard (such as API 6A or ISO 6162), shall be following DNV-OS-E101. For this, suitability for all internal and external loading shall be proven for each individual hose.

Hoses covered by this certificate shall not be installed in systems subjected to pressure below atmospheric or vacuum condition.

Impulse pressure/ pressure pulsation is limited to 2000 cycles at maximum working pressure as per API 16D [14.2.7.5].

## Type Approval documentation

### Tests carried out

Dimensional check, Change in length, Cold flexibility, Resistance against liquid, Cover adhesion test, Ozone resistance, Fire resistance, Impulse, Burst pressure test.

### Marking of product

Equipment shall be clearly marked with identification and serial number which relates the equipment to certificates and manufacturing documentation. In particular, each hose shall be permanently marked with:

- Hose manufacturer's name or trademark
- Date of manufacture (month/year)
- Designation type reference
- Nominal diameter
- Pressure rating
- Temperature rating

### 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>.

### Manufactured by:

#### Hose manufacturing location:

- 1) Gates Corporation, 1450 Montana Road, Iola Kansas 66749, USA

#### End fittings manufacturing locations:

- 1) Gates Hydraulics s.r.o., Karvina, Czech Republic.
- 2) Gates Corp, Versailles, MO, USA

#### Hose assembling locations:

- 1) Gates Engineering & Services UK Ltd  
Cramlington, NE23 8AS, United Kingdom
- 2) Gates Engineering & Services Mexico SA DE CV,  
Tabasco, Mexico
- 3) Gates Engineering & Services North America,  
Houston, Texas, USA