



Marine & Offshore

Certificate number: 21077/C0 BV

File number: ACM135/0712/003

Product code: 7310I

*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*

**GUTTELING BV**

ROTTERDAM - NETHERLANDS

*for the type of product*

**CARGO TRANSFER HOSE**

Multi-Chem Red, Black, Green and Multi-Oil Blue Cargo Hoses Assemblies

**Requirements:**

BUREAU VERITAS Rules for the Classification of Steel Ships  
IBC Code

*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: 30 Jul 2024**

**For Bureau Veritas Marine & Offshore,**

At BV GRONINGEN, on 30 Jul 2019,

John Mondt



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](http://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.

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION:

#### **Cargo Hose Assemblies: Multi-Chem Red, Black, Green and Multi-Oil Blue**

##### 1.1 - Range:

Hose Type	Multi-Chem Red	Multi-Chem Black	Multi-Chem Green	Multi-Oil Blue
Size range (mm)	28 to 300	28 to 250	28 to 300	28 to 300
Maximum Working pressure * (bar)	14	14	14	14
Vacuum rating (bar)	0,9	0,9	0,9	0,9
Temperature range (°C)	-20 to +100	-20 to +100	-20 to +100	-20 to +100
Maximum length (m)	30	30	30	30

\* Heavy duty (14 bar max.), Medium duty (10,5 max.), Light duty (7 bar max.)

##### 1.2 - Couplings:

Fixed flange and floating flange	1" to 12"	ASA or DIN or TTMA or JIS
Male threaded nipple	1" to 4"	NPT or BSP
Female threaded swivel nut	1" to 4"	NPT or BSP

##### 1.3 - Construction:

Hose Type	Multi-Chem Red	Multi-Chem Black	Multi-Chem Green	Multi-Oil Blue
Inner wire	Stainless steel 316	Polypropylene coated steel	Stainless steel 316	Galvanized steel
Lining	PTFE / Fep / Hostaflon	Polypropylene	Polypropylene	Polypropylene
Outer cover	Polyester PVC coated red	Polyester PVC coated black	Polyester PVC coated green	Polyester PVC coated blue
Outer wire	Galv. or stainless steel 316	Galv. or stainless steel 316	Galv. or stainless steel 316	Galvanized steel
Coupling	Carbon / Stainless steel	Carbon / Stainless steel	Carbon / Stainless steel	Carbon / Stainless steel
Ferrule	Carbon / Stainless steel	Carbon / Stainless steel	Carbon / Stainless steel	Carbon / Stainless steel

### 2. DOCUMENTS AND DRAWINGS:

Hose Type	Multi-Chem Red	Multi-Chem Black	Multi-Chem Green	Multi-Oil Blue
Drawings N°	GUT/HOSE/05-74 to -88, GUT/HOSE/05-126 to -127 dated 10/03/2019	GUT/HOSE/05-06, GUT/HOSE/05-08 to -21 dated 10/03/2019	GUT/HOSE/05-51 to -67 dated 10/03/2019	GUT/HOSE/05-22 to -44 dated 10/03/2019

- Drawings GUT/FERRULE/01 and 02-00; GUT/FIT/09-00; GUT/FLANGE/01 to 07-00; GUT/MALE NIPPLE/01-00; GUT/NIPPLE/01 and 02-00; GUT/PIPE NIPPLE/01-00; GUT/STUB/01-00; GUT/STUB/01A-00; GUT/SWL NUT/03 to 05-00

- Technical sheets of Gutteling BV composite hoses and couplings.

### 3. TEST REPORTS:

Tests carried out: Change in length, tensile strength, proof pressure test, burst test, cold flexibility test, pressure cycle test, bend test, vacuum test.

#### 3.1 - Multi-Chem Red

##### Diameter 1 inch:

- Test report N° 227559 dated 03/12/2018, as per EN 13765/13766 (witnessed by DNV-GL on 30/11/2018)

##### Diameter 2 inch:

- Test report N° 160120002, as per EN 10204 3.1 (witnessed by DNV-GL on 03/02/2016)

##### Diameter 4 inch:

- Test report N° 070119003, as per EN 10204 3.1 (witnessed by Germanischer Lloyd on 13/02/2007)

- Test report N° 080814002, as per EN 10204 3.1 (witnessed by Russian Maritime Register Of Shipping on 21/08/2008)

- Test report N° 131129002, as per EN 10204 3.1 (witnessed by Russian Maritime Register Of Shipping on 03/12/2013)

##### Diameter 6 inch:

- Test report N° 227548 dated 03/12/2018, as per EN 13765/13766 (witnessed by DNV-GL on 30/11/2018)

Diameter 10 inch:

- Test report dated 11/04/2007, as per NKK RULES 20.5.1 (witnessed by NKK)
- Test report N° 080814002, as per EN 10204 3.1 (witnessed by Russian Maritime Register Of Shipping on 21/08/2008)
- Test report N° 227560 dated 03/12/2018, as per EN 13765/13766 (witnessed by DNV-GL on 30/11/2018)

**3.2 - Multi-Chem Black**Diameter 1 inch:

- Test report dated 25/09/2003, as per ISO 1746 (witnessed by DNV)
- Test report N° 227552 dated 03/12/2018, as per EN 13765/13766 (witnessed by DNV-GL on 30/11/2018)

Diameter 3 inch:

- Test report N° 227553 dated 03/12/2018, as per EN 13765/13766 (witnessed by DNV-GL on 30/11/2018)
- Test report N° 121129002, as per EN 10204 3.1 (witnessed by Russian Maritime Register Of Shipping on 03/12/2013)

Diameter 4 inch:

- Test report dated 11/04/2007, as per NKK RULES 20.5.1 (witnessed by NKK)

Diameter 6 inch:

- Test report N° 227545 dated 03/12/2018, as per EN 13765/13766 (witnessed by DNV-GL on 30/11/2018)

Diameter 10 inch:

- Test report dated 11/04/2007, as per NKK RULES 20.5.1 (witnessed by NKK)
- Test report N° 080814002, as per EN 10204 3.1 (witnessed by Russian Maritime Register Of Shipping on 21/08/2008)
- Test report N° 227554 dated 03/12/2018, as per EN 13765/13766 (witnessed by DNV-GL on 30/11/2018)

**3.3 - Multi-Chem Green**Diameter 2 inch:

- Test report N° 227557 dated 03/12/2018, as per EN 13765/13766 (witnessed by DNV-GL on 30/11/2018)

Diameter 3 inch:

- Test report dated 24/09/2003, as per ISO 7233 (Vacuum Test) (witnessed by DNV)

Diameter 4 inch:

- Test report N° 227558 dated 03/12/2018, as per EN 13765/13766 (witnessed by BV on 30/11/2018)

Diameter 6 inch:

- Test report N° 227564 dated 03/12/2018, as per EN 13765/13766 (witnessed by DNV-GL on 30/11/2018)
- Test report N° 080814002, as per EN 10204 3.1 (witnessed by Russian Maritime Register Of Shipping on 21/08/2008)
- Test report N° 131129002, as per EN 10204 3.1 (witnessed by Russian Maritime Register Of Shipping on 03/12/2013)

Diameter 8 inch:

- Test report dated 24/09/2003, as per ISO 1402 (witnessed by DNV)
- Test report N° 227545 dated 03/12/2018, as per EN 13765/13766 (witnessed by BV on 30/11/2018)

**3.4 - Multi-Chem Multi-Oil Blue**Diameter 1 inch:

- Test report dated 24/09/2003, as per ISO 4672 (witnessed by DNV)
- Test report dated 24/09/2003, as per ISO 1402 (witnessed by DNV)
- Test report dated 24/09/2003, as per ISO 7233 (witnessed by DNV)
- Test report dated 25/09/2003, as per ISO 6803 (witnessed by DNV)

Diameter 1.5 inch:

- Test report dated 03/08/2006, as per IBC Code Chapter 5 (witnessed by DNV)

Diameter 2 inch:

- Test report N° 0908005, as per EN 10204 3.1 (witnessed by BV on 13/10/2010)

Diameter 3 inch:

- Test report dated 03/08/2006, as per ISO 1746 (witnessed by DNV)
- Test report dated 03/08/2006, as per IBC Code Chapter 5 (witnessed by DNV)
- Test report N° 227542 dated 03/12/2018, as per EN 13765/13766 (witnessed by DNV-GL on 30/11/2018)

Diameter 4 inch:

- Test report N° 0908005, as per EN 10204 3.1 (witnessed by BV on 13/10/2010)

Diameter 6 inch:

- Test report dated 29/09/2003, as per IBC Code Chapter 5 (witnessed by DNV)
- Test report dated 03/08/2006, as per ISO 7233 (witnessed by DNV)
- Test report N° 080814002, as per EN 10204 3.1 (witnessed by Russian Maritime Register Of Shipping on 21/08/2008)
- Test report N° 227543 dated 03/12/2018, as per EN 13765/13766 (witnessed by DNV-GL on 30/11/2018)

Diameter 8 inch:

- Test report N° 080814002, as per EN 10204 3.1 (witnessed by Russian Maritime Register Of Shipping on 21/08/2008)
- Test report N° 0908005, as per EN 10204 3.1 (witnessed by BV on 13/10/2010)
- Test report N° 131129002, as per EN 10204 3.1 (witnessed by Russian Maritime Register Of Shipping on 03/12/2013)

Diameter 10 inch:

- Test report N° 227544 dated 03/12/2018, as per EN 13765/13766 (witnessed by DNV-GL on 30/11/2018)

#### **4. APPLICATION / LIMITATION:**

- 4.1 - For use as transfer cargo hose assembly on board ships having to comply with the IBC Code and relevant requirements of the Society.
- 4.2 - Hoses are to be compatible with the cargo and suitable for the cargo temperature. Users, in consultation with the manufacturer, will ensure that materials of hoses assemblies are suitable to be resistant to the chemicals to be conveyed.
- 4.3 - The hoses are to be installed according to manufacturer's instructions and Bureau Veritas Rules.

#### **5. PRODUCTION SURVEY REQUIREMENTS**

- 5.1 - The **Cargo Hose Assemblies: Multi-Chem Red, Black, Green and Multi-Oil Blue** are to be supplied by **GUTTELING BV** 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 cargo hose, complete with end fittings, before being placed in service, is to be hydrostatically tested at ambient temperature to a pressure not less than 1.5 times its specified maximum working pressure nor more than two fifths its bursting pressure. Visual inspection and dimension inspection are to be carried out.

#### **6. MARKING OF PRODUCT:**

Each hose shall be permanently marked with at least the following information:

- Manufacturer's name or logo
- Hose designation and size
- Maximum working pressure
- Maximum working temperature
- Date of manufacture
- Society's brand as relevant

#### **7. OTHERS**

- 7.1 - It is **GUTTELING BV** '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.
- 7.2 - This Certificate supersedes the Type Approval Certificate N° 21077/B0 BV issued on 21/05/2014 by the Society.

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