



Marine & Offshore

Certificate number: 21355/C0 BV

File number: ACM 135/0712/02

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-LNG White Cargo Hoses Assemblies

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships
IGC 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. 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-LNG White

1.1 - Range

Hose Type	Multi-LNG White
Size range (mm)	28 to 300
Maximum Working pressure (bar)	10,5
Temperature range (°C)	-196 to +50
Maximum length (m)	30

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

Inner wire	Stainless steel 316
Lining	Polyester fabrics and films
Outer cover	Polyamide
Outer wire	Stainless steel 316
Coupling	Stainless steel
Ferrule	Stainless steel

2. DOCUMENTS AND DRAWINGS

- Technical sheets of Gutteling BV composite hoses and couplings.
- Drawings GUT/HOSE/05-97 to -106 dated 10/03/2019.

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

Tests carried out: Change in length, tensile strength, proof pressure test, burst test at -196°C, cold flexibility test at -196°C, pressure cycle test, bend test:

Diameter 1 inch:

- Test report N° 130611002, as per EN 10204 3.1 (witnessed by BV on 20/06/2013)
- Test report dated 24/10/2003, as per DNV Cold Shock Test (witnessed by DNV)
- Test report dated 24/10/2003, as per ISO 4672 (witnessed by DNV)

Diameter 2 inch:

- Test report N° 130611002, as per EN 10204 3.1 (witnessed by BV on 20/06/2013)

Diameter 3 inch:

- Test report dated 24/10/2003, as per DNV Cold Shock Test (witnessed by DNV)
- Test report dated 24/10/2003, as per ISO 4672 (witnessed by DNV)

Diameter 4 inch:

- Test reports N° GSO18000894, as per EN 10204 3.1 (witnessed by DNV-GL on 15/06/2018)

Diameter 6 inch:

- Test report dated 03/08/2006, as per IGC Code Chapter 5.7 (witnessed by DNV)

Diameter 8 inch:

- Test report dated 03/08/2006, as per IGC Code Chapter 5.7 (witnessed by DNV)
- Test reports N° 150616003, as per EN 10204 3.1 (witnessed by BV on 16/07/2015)

4. APPLICATION / LIMITATION

4.1 - For use as transfer (excluding the ship to ship transfer of LNG) cargo hose assembly on board ships having to comply with the IGC 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 Multi LNG White 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° 21355/B0 BV issued on 21/05/2014 by the Society.

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