DNV·GL

Certificate No:
TAP00001F7

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Bulk Loading Hoses with Permanently Fitted Couplings

with type designation(s)
Multi-Chem Black, Green, White - Multi Oil Blue, Multi-Chem Red

Issued to
Gutteling B.V.
Rotterdam, Zuid-Holland, Netherlands

is found to comply with
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.

Type:	Temperature range:	Max. working press.:	Sizes:
Multi-Chem Black, Green, White - Multi Oil Blue	**-30ºC to +80ºC**	**14 bar**	**1",1.5",2",2.5",3",4",6",8",10" (28 mm to 250 mm)**
Multi-Chem Red	**-30ºC to +100ºC**	**14 bar**	**1",1.5",2",2.5",3",4",6",8",10" (28 mm to 250 mm)**

Issued at **Høvik** on **2019-01-30**
This Certificate is valid until **2023-12-31**.
DNV GL local station: **Rotterdam**

Approval Engineer: **Adel Samiei**

for **DNV GL**

Marianne Spæren Marveng
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.

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Product description

Flexible hose assemblies with the following constructional features:

Hose design	Multi-Oil Blue	Multi-Chem Black	Multi-Chem Green	Multi-Chem Red	Multi-Chem White
Inner wire	galvanised steel	Polypropylene coated steel	stainless steel AISI 316		
Inner lining	Polypropylene fabrics			ECTFE /PTFE	Polypropylene fabrics
Inner layer	Polypropylene fabrics and films				
Outer cover	Polyester PVC coated				Polypropylene
Outer wire	galvanised steel		galvanised steel/stainless steel AISI 316		

End connection (to the hose): according to manufacturer's drawing listed in this certificate.
End connection (to ship): Slip-on weld flange, lapped flange, weld neck flange and TTMA fixed flange (according tyo ASME B16.5 or EN1092-1)
Coupling material: Galvanized Steel or Stainless steel AISI 316L
Hoses and couplings are manufactured by Gutteling B.V., Rotterdam, Netherlands

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.

The hoses may be used for transfer of chemicals as per manufacturers chemical resistance list.

The hoses may be used for temporary filling and discharge only. They are not to be permanently fitted.

The hoses covered by this certificate shall be used in accordance with manfacture's instruction manual.

The scope of approval does not cover the hose handling device(s) (padeye or lifting lugs, collars, etc.)

Hoses covered by this certificate shall not be subject to vacuum condition during operation.

Production test

Each hose covered by this certificate shall be hydrostatically tested at ambient temperature to a pressure equal to 1.5 times maximum working pressure before being placed in service.

Type Approval documentation

Tests carried out

Vacuum test, proof pressure test, impulse test, cold flexibility test, IBC-Code test, oil resistance test, burst test, bend test and change in length test, electrical conductivity

Marking of product

Each end fitting shall bear a permanent identification, showing, as a minimum:

- name of manufacturer;
- hose assembly serial number;
- internal diameter of the hose;

The hose shall be permanently marked with:

- the date of the proof pressure testing,
- its specified MAWP,
- its maximum and minimum service temperature;

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.