

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings**

with type designation(s)
CNG

issued to

ELAFLEX HIBY GmbH & Co. KG
Hamburg, Germany

is found to comply with

CSA/ANSI NGV 4.2:22 Hose and hose assemblies for compressed natural gas (CNG) dispensing systems for natural gas vehicles (NGV)

Application:

Hose assemblies for compressed natural gas (CNG) dispensing systems for natural gas vehicles (NGV)

Temperature range: - 40 °C up to + 65 °C

Max. working press.: 350 bar

Sizes: DN6, DN10

Issued at **Hamburg** on **2024-06-07**

This Certificate is valid until **2029-06-06**.

for **DNV**

DNV local unit: **Hamburg – CMC North/East**

Approval Engineer: **Hagen Markus**

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 300,000 USD.



Product description

CNG-dispenser hose assemblies made of non-metallic elastomer hoses with crimped hose end fittings, ready for installation. Design according to CSA/ANSI NGV 4.2:22.

Hose types	Nominal size
CNG 6	DN6
CNG 10	DN10

This type approval certificate includes standard hose end fittings made of 1.4571 (AISI 316 Ti) or comparable stainless steels and pipe connection design as follows:

Standard	Type designation
JIG female SAE J514	37° threaded connection
ORFS female SAE J1453	O-Ring face Seal
DIN EN ISO 8434-1	DKOS DIN 24° female
BSPP ISO 8434-6	BSPP 60° female
NPT ASME B1.20.1	NPT male

References:

- Drawing "CNG hose assembly – 10210750-00-A".
- Specification "Hose specification and verification of selected materials ID 10220404, Requirements acc. to CSA/ANSI NGV 4.2:22".

Production place

Hose assemblies

ELAFLEX HIBY GmbH & Co. KG, Hamburg, Germany

Application/Limitation

Industrial application.

Non-metallic flexible hose assemblies used for the transfer of compressed natural gas acc. to NGV 4.2:22.

Operation temperature range: - 40 °C up to + 65 °C

Maximum allowable working pressure (MAWP): 350 bar

This Type Approval certificate is not valid for designs, components, equipment, systems or products which are subject to classification by DNV.

Production testing

According to ELAFLEX "Inspection and Test plan for production (ITP) ID 10220489".

Installation

For operation and installation the following documents are to be observed:

"Installation and Operating Manual CNG TWIN DN6 / DN10", also applicable to single hose assemblies.
"Elaflex Operating Instructions for Hose Assemblies and Expansion Joints".



Job ID: **262.1-040188-1**
Certificate no.: **TAP00002VR**

Type Approval documentation

Tests carried out

Test standard CSA / ANSI NGV 4.2:22

Hose assembly DN6, DN10

5.2 Leakage,
5.3 UV and Water exposure, 5.4 Hydrostatic strength, 5.5 Electrical conductivity,
5.6 Kink resistance – Dispenser hoses – Class A,
5.8 Crush test, 5.9 Impact test, 5.10 Torsion strength,
5.11 End fitting stress relief and hose bending, 5.12 Tensile test,
5.13 Materials, 5.14 Ozone resistance, 5.15 Corrosion test, 5.17 Pressure cycle test,
5.18 Abrasion resistance, 5.19 Marking material legibility,
5.20 Fluid exposure test, 5.21 Verification of hose cover venting, 5.22 Oxygen aging, 5.23 Hose permeation

Test standard NFPA 52:2023

Hydrostatic test 8.4.2.8.2 with 2 x MAWP = 700bar

Marking of product

For traceability to this type approval each hose end fitting is to be marked with:

Scope	Example
Manufacturer's name or trademark	ELAFLEX 
Type	CNG 6
MAWP	5000 PSI / 35 MPa
Hose standard	CSA / ANSI NGV 4.2 CLASS A
Operating temperature range	- 40 °C + 65 °C
Batch number	17 4 10 – 04.21

Periodical assessment

For renewal of the Type Approval, a DNV Surveyor shall perform assessment to verify that the conditions for the Type Approval are complied with.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

End of certificate