DNV·GL

Certificate No:
TAP00000VK

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Flexible Hoses of Metallic Material with permanently fitted couplings

with type designation(s)
HCJR

Issued to
Jiangsu Hongcheng Pipes Co., Ltd
JIANGYAN JIANGSU, China

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL class programme DNVGL-CP-0184 – Type approval – Flexible hoses with permanently fitted couplings

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL. The flexible hoses are type approved for application in pipe class I-III.

Temperature range:	**-45°C up to +200°C**
Max. working press.:	**6 bar up to 200 bar size dependant**
Sizes:	**DN6 to DN300**

Issued at **Hamburg** on **2017-03-24**
This Certificate is valid until **2022-03-23**.
DNV GL local station: **Nantong CMC**

Approval Engineer: **Christian Kaemmer**

for **DNV GL**

Olaf Drews
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.

Product description

Corrugated hose surface. The convolutions are covered with one layer of wire braid. End couplings are flanged and welded to the hose.

Materials:
Hose, Braid, Collar:
AISI 304(L), AISI316 (L) AISI321
End couplings, Flanges:
AISI 304(L), AISI316 (L) AISI321 or Q235

Application/Limitation

The hose assemblies are approved for use in the following systems: Thermal oil, fuel oil, lube oil, hydraulic oil, steam, fresh water & compressed air. The hoses are not approved for seawater systems, bilge- and ballastwater systems.

Nominal diameter, DN	Max working pressure, MPa
6, 15, 20	0.6 - 20
25, 40, 50	0.6 – 4.0
80, 100, 150	0.6 – 2.5
200, 250, 300	0.6 – 1.6

At elevated temperatures the maximum working pressure is to be reduced according to the factors in the following table:

Temp.	Carbon steels, unalloyed	Low alloyed steels	Stainless steels
50°C	1.00	1.00	0.95
100°C	1.00	1.00	0.85
150°C	0.89	0.93	0.77
200°C	0.81	0.87	0.71

Couplings made of carbon steel are to be of normalised quality when minimum temperatures are below -10°C.

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.

All hose assemblies delivered under this type approval certificate shall be in compliance with an assembly procedure issued by the certificate holder.

Each hose is to be hydraulically pressure tested to 1.5 times the maximum working pressure before installation and to be delivered with a test report with reference to this type approval certificate.

Flexible hoses are only to be used in short lengths where it is necessary for relative movements or flexible mounting of the machinery. The hose shall not be used to replace fixed piping and must only be fitted on places where they are always accessible for inspection.

The hose assemblies may not be used in systems subjected to high pressure impulses.

It must be possible to shut off from the system all hoses used in the fuel oil, lubricating oil and compressed air systems.

Type Approval documentation

Tests carried out

Appearance test, Dimension check test, Leakage test, Burst test, Static bend test, Cyclic U-bend test, Cantilever bend test, Pressure impulse test.

Marking of product

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

- Manufacturers name or trade mark
- Type designation

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, components and/or materials.
The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, components and/or materials used comply with type approved documents and/or referenced system, component and material specifications
- Review of possible changes in design of systems, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.
END OF CERTIFICATE