DNV·GL

Certificate No:
TAP00001KG

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Compensator, Bellow of Rubber Material

with type designation(s)
DYV-W, DYV-WR

Issued to
Dong Yang S&T
Gimhae-si, Korea, Republic of Korea

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018
DNV GL class programme DNVGL-CP-0183 – Type approval – Flexible hoses

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Type:	Temperature range:	Max. working press.:	Sizes:
DYV-W	0 °C to 100 °C	See Certificate	DN 25 to DN 400
DYV-WR	0 °C to 100 °C	See Certificate	DN 25 to DN 400

Issued at **Høvik** on **2019-02-19**
This Certificate is valid until **2024-02-18**.
DNV GL local station: **Gimhae Station**

Approval Engineer: **Mehdi Rowshan**

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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Job Id: **262.1-027888-1**
Certificate No: **TAP00001KG**

Product description

Two types of rubber bellows (DYV-W / DYV-WR) with spherical shape fitted between two loose steel flanges with the following material specifications:

Model/parts	DYV-W	DYV-WR
Inner Layer	NBR	EPDM
Outer Layer	CR (Chloroprene)	EPDM
Reinforcement	Wire braid	Wire braid
Steel Flange	SS400 with zinc coating, S304, SUS304L, SUS316, SUS316L, A105	SS400 with zinc coating, S304, SUS304L, SUS316, SUS316L, A105

Sizes: DN 25, 32, 40, 50, 65, 80, 100, 125, 150, 175, 200, 250, 300, 350, 400

Manufactured By: DONG YANG S&T SERVICE & TECHNOLOGY

Application/Limitation

Temperature range: 0 °C to 100 °C
Maximum Allowable Working Pressure: 16 bar for DN 25 to DN200
10 bar for DN 250 to DN400

Rubber compensator may be accepted for use in fuel systems, lubricating, hydraulic and thermal oil systems, fresh water and sea water cooling systems, compressed air systems, bilge and ballast systems.

Stainless steel grades 304, 316, 316L & 316Ti are not seawater resistant materials and products with the mentioned material grades shall not be used in seawater applications.

The compensators are not permitted used in systems where pressure pulses may occur.

Production Testing

Each compensator is to be hydraulic pressure tested to 1.5 times the working pressure, and delivered with the manufacturer's pressure test report.

The location of the rubber compensator in the piping system shall be approved in each separate case.

Type Approval documentation

Document Number	Document Name	Rev	Status
TA142-000031	DYV-WR/DN25 ~ DN400	0	Approved
TA142-000030	DYV-W/DN25 ~ DN400	0	Approved
TAP 1708	Application For the type approval of compensator of Type : DYV-W, DYV-WR	0	For Information
T-Burst-002	Burst Pressure Test Report dated:2018.10.12	-	For Information
TTR1807-0001-Visual	Visual Inspection Reports dated:2018.07.10	-	For Information
T-Material-003	Material Test Report dated: 2018.08.24	-	For Information
TTR1807-0005-Fire	Fire Test Report dated 2018.07.13	-	For Information

TTR18-001	Type testing of rubber compensators, type: DYV-W, dated 2018.09.11	-	For Information
TTR18-002	Type testing of rubber compensators, type: DYV-WR, dated 2018.09.11	-	For Information

Tests carried out

Endurance Test, Burst Test, Fire Test, Oil Resitance Test, Ozone Resistance Test.

Marking of product

For traceability to this type approval, the compensators are to be marked with:

- Manufacturer's trade Mark
- Type designation
- Size
- Maximum working Pressure

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.