DNV·GL

Certificate No:
TAP00001MK

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Valve for Liquefied Gas

with type designation(s)
21000 C, 41005 C

Issued to
DRESSER PRODUITS INDUSTRIELS S.A.S.
Conde en Normandie, Calvados, France

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL rules for classification – Ships Pt.5 Ch.7 Liquefied gas tankers
DNV GL class programme DNVGL-CP-0186 – Type approval – Valves

Application :

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

Issued at **Høvik** on **2019-04-12**
This Certificate is valid until **2023-06-30**.
DNV GL local station: **Le Havre**

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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Job Id: **262.1-016543-2**
Certificate No: **TAP00001MK**

Product description

Globe valves designed according to EN 1349:2009 and the strength calculations follow EN 12516-1:2005.
Materials:

Part	Material	Grade
Body	Stainless Steel	ASTM A351 CF3M/CF8M 1.4408/1.4409 EN 10213
Cage	Stainless Steel	ASTM A351 grade CF8 ASTM A479 type 316 Chromium plated ASTM A312 type 304
Bolting	Stainless Steel	ASTM A193 grade B8 CL2 ASTM A194 grade B8 ASTM A453 grade 660 ASTM A320 grade B8M CL2
Plug	Stainless Steel Cobolt based alloy	ASTM A479 type 316 + Stellite 6 ASTM A351 grade CF8M + Stellite 6
Packing	carbon graphite	*Carbon PTFE*

Application/Limitation

The following sizes and classes of valves are covered by this type approval:

Type	Size	Class	Connection	Temperature	Maximum working Pressure
21000 C	DN25	150 (ASME B16.34)	Flanged	-196 to+20 °C	10 bar
	DN25		Butt welded		12 bar
	DN50		Butt welded		12 bar
	DN100		Flanged		10 bar
41005 C	DN250		Flanged		10 bar

The approval does not include actuator and/or other equipment for remote control of the valves.

The valves covered by this certificate are not to be considered fire safe and therefore shall not be installed wherever fire safe application is required; e.g. as shut off or quick closing valves.

Type Approval documentation

Tests carried out

Cryogenic prototype testing

Production Testing

Each valve body shall be subjected to a hydrostatic pressure test at 1.5 times the allowable pressure at room temperature.
In addition each valve shall be subject to seat leakage testing at 1.1 times the design pressure in the valve flow direction.
Testing shall follow procedures and acceptance criteria in EN12266-1 (leakage rate A).

For cryogenic valves:
In addition to the above tests, cryogenic testing consisting of valve operation and leakage verification (to BS6364) for a minimum 10% of each type and size of valve intended to be used at working temperature below -55°C shall be undertaken. (Refrence is made DNV GL ship rules Pt.5 ch.7 Sec.5 [13.1.1])

Production testing for valves that require DNV GL product certificate shall be witnessed by DNV GL surveyor.

Certification

For LNG/LPG applications: The valves shall be delivered with DNV GL product certificate when minimum design temperature is less than -55°C or DN≥100. Otherwise manufacturer's product certificate may be accepted.

Material certificates for valve bodies are required in line with DNV GL Pt.5 Ch.7 Sec.1 Table 8.

For other applications:
Valves covered by this certificate shall be delivered with a manufacturer's product certificate.
Material certificates for valve bodies shall be according to DNV GL Pt.4 Ch.6 Sec.2 Table 3.

Marking of product

For traceability to this type approval the valves are to be marked as a minimum with:

- Manufacturer's name or trade mark
- Valve type designation
- Size
- Maximum design pressure and temperature
- Arrow to indicate direction of flow

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.