

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Gaskets and Sealings**with type designation(s)
DeltaV-Seal

Issued to

Otechos AS
Tvedestrand, Norwayis found to comply with
ASME B16.20-2017, Metallic Gaskets for Pipe Flanges
EN 1514-2:2014**Application :****Temperature range:** See cert.
Max. working press.: See cert.
Design: Metallic gasket
Sizes: 1/2" - 24" / DN15 - DN600Issued at **Høvik** on **2019-10-16**for **DNV GL**This Certificate is valid until **2024-10-15**.DNV GL local station: **Kristiansand S**Approval Engineer: **Mehdi Rowshan****Zeinab Sharifi**
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.



Job Id: **262.1-019868-3**
Certificate No: **TAP000003B**
Revision No: **2**

Product description

Metallic gaskets with the dimensions according to the following standards:

- ASME B16.20 to be used in the ASME B16.5 flanges
- EN 1514-2 to be used in the EN 1092-1 flanges

Flange Size:

ASME B16.5: ½", ¾", 1", 1¼", 1½", 2", 2½", 3", 3½", 4", 5", 6", 8", 10", 12", 14", 16", 18", 20", 24"

EN 1092-1: DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN125, DN150, DN200, DN250, DN300, DN350, DN400, DN450, DN500, DN600

Materials:

Carbon steel EN 10025-2 S235, S275, S355
Stainless steel EN10028-7 1.4401, 1.4404, 1.4432, 1.4435

Application/Limitation

The gaskets may be used in the piping systems according to the following systems:

- ASME B31.3
- ASME B31.4
- ASME B31.8

Pressure classes/ratings premitted based on the flange standards:

ASME B16.5	Class 150, Class 300
EN 1092-1	PN6, PN10, PN16, PN25, PN40

The metal seal is considered to be Fire safe according to API 6FB for the flange assembly with size: 6", Class 300 and seal material of SS316L.

The Tightness and Leakage tests have been performed respectively according to VDI 2440 and EN 13555 for the flange assembly of DN40/PN40.

This approval has not covered the gasket recommended bolt torque values.

Type Approval documentation

<i>Doc ref.</i>	<i>Rev</i>	<i>Description</i>	<i>Status</i>
		DVS datasheet ANSI/ASME B16.5, March 2015	For Info
		DVS datasheet DIN/EN, March 2015	For Info
DVS-111-X0-006	01	DVS EN1514-2 DN40 PN40	Approved
DVS-112-X0-030	01	DVS 4" ASME B16.20 Class 300	Approved
DVS-112-X0-032	01	DVS 6" ASME B16.20 Class 300	Approved
DVS-113-D0-002	2	Bolt Torque Test Report 1"	For Info
DVS-113-D0-003	2	Bolt Torque Test Report 2"	For Info
DVS-113-D0-004	2	Bolt Torque Test Report 4"	For Info
DVS-113-D0-007	1	No leakage test report 1", 6" #300, dated 2015-02-03	For Info
DVS-113-D0-007_1	1	No leakage test report 12", dated 2015-03-13	For Info
DVS-113-D0-008	1	Burst pressure test report 1", 6" #300, dated 2015-02-03	For Info
DVS-113-D0-008_1	1	Burst pressure test report 12", dated 2015-03-13	For Info
DVS-113-D0-010	1	No leakage test – with damaged flange 2" #300, dated 2014-12-09	For Info

Job Id: **262.1-019868-3**
Certificate No: **TAP000003B**
Revision No: **2**

DVS-113-D0-011	1	Vibration test report 1" #300, dated 2015-05-05	For Info
DVS-113-D0-012	1	Vibration test report 6" #300, dated 2015-04-13	For Info
DVS-113-D0-013	1	Vibration test report 12" #300, dated 2015-08-30	For Info
DVS-113-D0-014	1	Pressure pulsation test report 1" #300, dated 2015-05-06	For Info
DVS-113-D0-015	1	Pressure pulsation report 6" #300, dated 2015-04-13	For Info
DVS-113-D0-016	1	Pressure pulsation test 12" #300, dated 2015-08-30	For Info
DVS-113-F0-001	5	Part list – dimensions for DeltaV-Seal	Approved
DVS-112-X0-023	01	DVS 1" ASME B16.20 Class 300	Approved
DVS-112-X0-032	01	DVS 6" ASME B16.20 Class 300	Approved
DVS-112-X0-035	01	DVS 12" ASME B16.20 Class 300	Approved

Tests carried out

Bolt torque test (1", 2", 4"), leakage and burst test (1", 6", 12"), pressure pulsation and vibration test (1", 6", 12"), damaged flange leakage test (2"), Fire Test (6"), Tightness and Leakage tests (DN40/PN40) according to VDI 2440 and EN 13555.

Marking of product

Each gasket is to be marked with:

- The manufacturer's name or trademark;
- Gasket material;
- DN or NPS size designation;
- PN or pressure rating class.

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.