

TYPE APPROVAL CERTIFICATE

Certificate No:
TAP000012C
Revision No:
5

This is to certify:

That the Air Release Valve

with type designation(s)
D060, 20 bar

Issued to

Aquestia Ltd.
Kfar Charuv, Israel

is found to comply with

DNV class programme DNV-CP-0186 – Type approval – Valves
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021

Application :

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

Type:	Temperature range:	Max. working press.:	Sizes:
D060	0°C to 90°C	16 bar 20 bar	2", 3", 4" and 6" 1" and 8"

Issued at **Høvik** on **2023-01-18**

This Certificate is valid until **2027-12-05**.

DNV local station: **Haifa**

Approval Engineer: **Jane Lozanov**

for **DNV**

Bosman van der Merwe
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.

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

The air release valve designed to automatically release small pockets of air to the atmosphere as they accumulate along piping system when it is full and operating under pressure. Design code: EN12516-3.

Material of body: Ferritic Nodular Cast Iron: ASTM A536 60-40-18 / ASTM A536 60-45-12

Carbon Steel:	ASTM A216 WCB
Duplex Stainless Steel:	ASTM A995 Gr. 5A
Aluminium Bronze:	B148 C95800

Material of cover: Ferritic Nodular Cast Iron: ASTM A536 60-40-18 / ASTM A536 60-45-12

Carbon Steel:	ASTM A216 WCB
Duplex Stainless Steel:	ASTM A995 Gr. 5A
Aluminium Bronze:	B148 C95800

Sealing Material: EPDM

O-Ring: NBR

Application/Limitation

Valves covered by this certificate may be used in General machinery service.

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions

Air release valves made of duplex stainless steel ASTM A995 Gr. 5A may be allowed for use in sea water.

Air release valves made of aluminium bronze B148 C95800 may be allowed for use in sea water applications provided the following requirements are fulfilled:

- The temper condition of the grade C95800 shall be annealed
- Design shall take into account 2% reduction in yield and tensile strength for design temperature 90°C

Air release valves manufactured from other specified materials are approved to be used in fresh water applications.

Valves made of Ferritic Nodular Cast Iron with specified minimum elongation of 12%, may only be used in class II and III piping systems.

Valves covered by this certificate have not been subject to fire test. Therefore, they shall not be installed in systems where fire safe application is required e.g., as shut off or quick closing valves.

The approval does not include actuator and/or other equipment for remote control of the valves. Also, functionality of these products is not covered under the scope of approval.

Type Approval documentation

A.R.I product catalogue February 2012

Burst pressure test report dated 2016-09-06 / calculation report for size of 2" - 3" - 4" - 6"

Drawings: 5182-01-00 Version J dated 2016-03-10, 5182-02-00 Version G dated 2012-12-31
5184-02-00 Version J dated 2012-07-12, 5184-02-00 Version L dated 2014-01-12
5110-01-17 Version - dated 2014-09-07, 5110-02-00 Version J dated 2016-06-13
5183-01-00 Version L dated 2013-02-03, 5183-02-00 Version M dated 2015-07-19

Calculation report for material B148 C95800

Drawings: 5182-01-31 Version A dated 2019-07-23, 5187-01-08 Version B dated 2015-08-09
5121-01-00 Version G dated 2015-01-26, 5189-01-09 Version B dated 2015-01-28
5189-01-05 Version E dated 2017-10-08, 5136-02-04 Version G dated 2018-12-17

Burst pressure test report dated 2021-11-08 / calculation report for size of 1" - 8"

Drawings: P-7098-SD Version - dated 2021-01-31, P-7097-SD Version - dated 2021-01-31
P-7082-SD Version - dated 2021-01-03, P-7083-SD Version - dated 2021-01-03
5186-01-00 Version L dated 2018-01-30, 5186-02-00 Version G dated 2013-02-21

Production Testing and Certification

Production Testing and Certification for the actual intended application shall follow the latest applicable edition of the Rules (as mentioned on the front page of this certificate).

Tests carried out

Burst pressure test

Marking of product

Minimum marking requirements shall be as outlined in the latest edition of the Rules (as mentioned on the front page of this certificate).

Periodical assessment

For retention of the Type Approval, a DNV 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 DNV-CP-0338.

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