



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

20-1952297-1-PDA
21-Jan-2022
28-Jan-2025
Houston ESD - Piping

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

SAMSON AG

located at

WEISSMUELLER STR. 3, D-60314 FRANKFURT, Germany

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: Cryogenic Valve
Model: Type 3241: NPS 1, 1-1/2, 4, 6, 12 Class 150, NPS 1, 1-1/2, 2, 4 Class 300
Type 3251: NPS 2 Class 2500, NPS 6 Class 1500
Type 3254: NPS 3 Class 1500
Endorsements:
Tier: 5 - Unit Certification Required

This Product Design Assessment (PDA) Certificate remains valid until 28/Jan/2025 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

Yongjin Lee, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

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Tier: 5 - Unit Certification Required

Product: Cryogenic Valve**Model:** Type 3241: NPS 1, 1-1/2, 4, 6, 12 Class 150, NPS 1, 1-1/2, 2, 4 Class 300

Type 3251: NPS 2 Class 2500, NPS 6 Class 1500

Type 3254: NPS 3 Class 1500

Endorsements:**Intended Service:**

Cryogenic globe valves intended to be used as control valves in cargo handling systems of liquified gas tankers and liquified gas terminals subject to the ratings and service conditions indicated below.

Description:

Stainless steel flanged or butt welded valves with metal to metal seating.

Rating:

Valve Type 3241 - Size: NPS 1, 1-1/2, Class 150, Design Temperature; -196 °C to +85 °C, Design Pressure: 12 bar.

Valve Type 3241 - Size: NPS 4, 6, 12, Class 150, Design Temperature; -196 °C to +85 °C, Design Pressure: 15 bar.

Valve Type 3241 - Size: NPS 1, 1-1/2, 2, 4, Class 300, Design Temperature; -196 °C to +85 °C, Design Pressure: 28 bar.

Valve Type 3251 - Size: NPS 2, Class 2500, Design Temperature; -196 °C to +85 °C, Design Pressure: 370 bar.

Valve Type 3251 - Size: NPS 6, Class 1500, Design Temperature; -196 °C to +85 °C, Design Pressure: 170 bar.

Valve Type 3254 - Size: NPS 3, Class 1500, Design Temperature; -196 °C to +85 °C, Design Pressure: 170 bar.

Valve Materials - Body: A351 CF8M; Seat, Plug & Plug Seal: 1.4404 (316L); Diaphragm: NBR.

For further details, contact the manufacturer

Service Restriction:

1) Unit Certification is required for the products intended to be used at a working temperature at or below -55 deg. C and testing is to be carried out in the presence of the Surveyor, which is to include hydrostatic test of the valve body at a pressure equal to 1.5 times the design pressure, and seat & stem leakage test at a pressure equal to 1.1 times the design pressure in accordance with manufacture's testing procedure. In addition, cryogenic testing consisting of valve operation & leakage verification for a minimum of 10% of each type and size of valve per 5C-8-5/13.1.1(b) of the Marine Vessel Rules.

2) Only metal to metal seat type valves are to be used for cryogenic cargo service.

3) If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments:

1) All valves are to bear permanent identification, such as the manufacturer's name or trademark, material identify, pressure rating, etc. at which the manufacturer guarantees the valves to meet the requirements of the manufacturer's standards. Such markings may be cast or forged integral with, stamped on, or securely affixed by nameplate on the component, and are to serve as a permanent means of identification of the component throughout its service life in accordance with 4-6-2/5.11.4 and 4-6-1/7.1.4 of Marine Vessel Rules.

2) The manufacturer is to guarantee that the valve has been tested before shipment to the pressure required by the pressure rating of the valve. The certificate of test is to be submitted upon request.

3) Installation, welding and joining procedures are to be to the satisfaction of the Bureau's attending Surveyor.

4) Copies of the certificate material test reports are to be made available to the attending Surveyor and are to be traceable to the material.

5) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes/Drawing/Documentation:

Drawing No. QP-018, Cryotest acc. to Q-1066, Type 3241, NPS 1, 1-1/2 Class 150, NPS 1, 2 Class 300, Samson, 22.09.2021

Drawing No. QP-018, Cryotest acc. to Q-1066, Type 3241, NPS 1 Class 150, NPS 1-1/2 Class 300, Samson,

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Tier: 5 - Unit Certification Required

23.09.2021

Drawing No. 1040-0095-SWD, Type 3241 DN 15-150/NPS 1/2-6, Revision: 00, Pages: -

Drawing No. 1040-0130-SWD, Type 3251, Revision: 00, Pages: -

Drawing No. 2148341_PCV-1117_PCV-1317, InspectionCertCryo_3241_DN25_PN40, Revision: -, Pages: -

Drawing No. 2186869_SN, InspectionCertCryo_3241, Revision: -, Pages: -

Drawing No. 219760710_25PV0050, InspectionCertCryo_3241, Revision: -, Pages: -

Drawing No. 219760710_25TV0030, InspectionCertCryo_3241, Revision: -, Pages: -

Drawing No. 219760710_25TV4285, InspectionCertCryo_3241, Revision: -, Pages: -

Drawing No. 221276606_101, InspectionCertCryo_3241, Revision: -, Pages: -

Drawing No. 221276612_101, InspectionCertCryo_3241, Revision: -, Pages: -

Drawing No. 221276621_101, InspectionCertCryo_3241, Revision: -, Pages: -

Drawing No. 221276621_102, InspectionCertCryo_3241, Revision: -, Pages: -

Drawing No. 2358963_45-HV-6532, InspectionCertCryo_3241_DN50_PN40, Revision: -, Pages: -

Drawing No. 238254402_PCV8001, InspectionCertCryo_3241, Revision: -, Pages: -

Drawing No. 2382544_FCV5707, InspectionCertCryo_3241_DN50_PN40, Revision: -, Pages: -

Drawing No. 2382544_PCV8001, InspectionCertCryo_3241_DN80_PN40, Revision: -, Pages: -

Drawing No. 2382544_PCV8054, InspectionCertCryo_3241_DN25_PN40, Revision: -, Pages: -

Drawing No. 2382544_PCV8057, InspectionCertCryo_3241_DN50_PN40, Revision: -, Pages: -

Drawing No. 242422902_25PV1075, InspectionCertCryo_3241, Revision: -, Pages: -

Drawing No. 242422902_25TV1030, InspectionCertCryo_3241, Revision: -, Pages: -

Drawing No. 242422902_40LV1320, InspectionCertCryo_3241, Revision: -, Pages: -

Drawing No. 242422902_40PV1325, InspectionCertCryo_3241, Revision: -, Pages: -

Drawing No. 2504982 Test_Reports, Test_Reports, Revision: -, Pages: -

Drawing No. 2504982 Test_and_Material_Certificates, Test_and_Material_Certificates, Revision: -, Pages: -

Drawing No. 250498201 Test_Reports, Test_Reports, Revision: -, Pages: -

Drawing No. 250498201 Test_and_Material_Certificates, Test_and_Material_Certificates, Revision: -, Pages: -

Drawing No. Cryogenic Test Report, NPS 4 inch Class 300, Revision: -, Pages: -

Drawing No. Cryogenic Test_Tag No. 23FV1110, GLOBE CONTROL VALVE 6, Revision: -, Pages: -

Drawing No. Cryogenic Test_Tag No. 23FV1115, GLOBE CONTROL VALVE 3, Revision: -, Pages: -

Drawing No. Cryogenic Test_Tag No. 23LV0021A, GLOBE CONTROL VALVE 12, Revision: -, Pages: -

Drawing No. Cryogenic Test_Tag No. 23LV0021B, GLOBE CONTROL VALVE 12, Revision: -, Pages: -

Drawing No. Cryogenic Test_Tag No. 23PV0025A, GLOBE CONTROL VALVE 6, Revision: -, Pages: -

Drawing No. Matrix_ABS_TAT_Rev, OverviewInspectionTest, Revision: -, Pages: -

Drawing No. PA1464_Rev3_SpecSheet_H1786A_H1787A_Technical, Specs, Revision: -, Pages: -

Drawing No. PDA_Revalidation, PDA_Application, Revision: -, Pages: --

Drawing No. ce_modul_a_de_en_rev02, EU_DeclOfConformity, Revision: -, Pages: -

Drawing No. ce_modul_d_de_en_rev04, EU_DeclOfConformity, Revision: -, Pages: -

Drawing No. ce_modul_h_de_en_rev04(1), EU_DeclOfConformity, Revision: -, Pages: -

Drawing No. e80120en(1), DataSheet_PCV_3241, Revision: -, Pages: -

Drawing No. e80520en, SizeVsRating_PCV_3251, Revision: -, Pages: -

Drawing No. e80600en, SpareParts_Type_3254_GlobeValve, Revision: -, Pages: -

Drawing No. s80150en, SpareParts_Type_3241_GlobeValve, Revision: -, Pages: -

Drawing No. s80510s1, SparepartsList_3251, Revision: -, Pages: -

Drawing No. s80600s1, MountingOperationInstructions, Revision: -, Pages: -

Drawing No. t80003en, InformationSheet_PandECV_3241_3254_3251_etx, Revision: -, Pages: -

Drawing No. t80120en, DataSheet_Type_3241, Revision: -, Pages: -

Drawing No. t80520en, PCV_Type3251_GlobeValve, Revision: -, Pages: -

Drawing No. t80610en, SizeVsRating_PCV_3251, Revision: -, Pages: -

Terms of Validity:

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STANDARDS**ABS Rules:**

The Rules for Conditions of Classification, 2022 Marine Vessel Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2022 Rules for Building and Classing Marine Vessel Rules: 4-6-2/5.11, 5.15, 5C-8-5/8, 5C-8-5/12.2, 5C-8-5/13.1.1, 5C-8-6/2.2.

The Rules for Conditions of Classification, Offshore Units and Structures, 2022 Mobile Offshore Units 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

2022 Rules for Building and Classing Mobile Offshore Units: 4-2-2/9.

National:

NA

International:

2016 International Gas Carrier Code (IGC Code): The International Code for Construction and Equipment of Ships Carrying Liquefied Gases in Bulk

Government:

NA

EUMED:

NA

OTHERS:

NA