



Marine & Offshore

Certificate number: 36134/C0 BV

File number: ACM 145/2574

Product code: 73311

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

SAMSON AKTIENGESELLSCHAFT

Frankfurt am Main - GERMANY

for the type of product

GLOBE VALVES FOR LIQUEFIED GAS PIPING SYSTEMS

Types: 3241 and 3251

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships
IGC / IGF Code

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 22 Feb 2029

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 22 Feb 2024,

Heiko Lange

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Globe valves, types: 3241 and 3251

1.1 Design:

Globe valves, types: 3241 and 3251 with flanged or welded connections and operated with the pneumatic actuators of types 3271 or 3277.

1.2 Identification and technical data for type 3241:

File number	Nominal diameter		Design pressure		Temperature range
	DN	NPS	PN	Class	
ACM 145/2574/1	15	1/2	20	150	-196 °C to +450 °C
	25	1	20 40	150 300	
	40	1 ½	20 40	150 300	
	50	2	20 40	150 300	
	65	2 ½	20	150	
	80	3	16 40	150 300	
	100	4	20	150	
	150	6	20	150	
	200	8	40	300	
	250	10	20	150	
	300	12	20	150	

1.3 Identification and technical data for type 3251:

File number	Nominal diameter		Design pressure		Temperature range
	DN	NPS	PN	Class	
ACM 145/2574/2	25	1	20	150	-196 °C to +450 °C
	50	2	100	600	
	100	4	150	900	
	150	6	20 250	150 900	

1.4 Material of valve type: 3241

Nominal pipe size		Pressure class		Materials for valve body and bonnet	
DN	ANSI	PN	Class	DIN Mat. no.	ANSI Material
DN 15 – DN 300	NPS ½ – NPS 12	PN 16 – PN 40	150 – 300	1.0460	A105
				1.0619	A216 WCC
				1.4301	A182 F304
				1.4301	A479 304
				1.4306	A182 F304L
				1.4306	A479 304L
				1.4308	A351 CF8
				1.4309	A351 CF3
				1.4401/1.4404	A182 F316/A182 F316L
				1.4401/1.4404	A479 316/A479 316L
				1.4408	A351 CF8M
				1.4409	A351 CF3M

1.5 Material of valve type: 3251

Nominal pipe size		Pressure class		Materials for valve body and bonnet	
DN	ANSI	PN	Class	DIN Mat. no.	ANSI Material
DN 25 – DN 150	NPS 1 – NPS 6	PN 16 – PN 250	150 – 900	1.0460	A105
				1.0619	A216 WCC
				1.4301	A182 F304
				1.4301	A479 304
				1.4306	A182 F304L
				1.4306	A479 304L
				1.4308	A351 CF8
				1.4309	A351 CF3
				1.4401/1.4404	A182 F316/A182 F316L
				1.4401/1.4404	A479 316/A479 316L
				1.4408	A351 CF8M
				1.4409	A351 CF3M

2. DOCUMENTS AND DRAWINGS:

According to following documents:

Designation	Rev.
Data sheet T 8012 EN	November 2022
Data sheet T 8015 EN	November 2022
Data sheet T 8051 EN	November 2022
Data sheet T 8052 EN	November 2022

3. TEST REPORTS:**3.1 Cryogenic test at -196 °C.**

Test report no.: 1000354366 dd. 13.12.2023 performed at SAMSON AG, witnessed by BUREAU VERITAS.
 Test report no.: 1000315241 dd. 07.08.2023 performed at SAMSON AG, witnessed by BUREAU VERITAS.
 Test report no.: 1000250267 dd. 25.11.2022 performed at SAMSON AG, witnessed by BUREAU VERITAS.
 Test report no.: 1000312152 dd. 11.09.2023 performed at SAMSON AG, witnessed by BUREAU VERITAS.
 Test report no.: 1000312153 dd. 31.10.2023 performed at SAMSON AG, witnessed by BUREAU VERITAS.
 Test report no.: 1139145 dd. 2021-04-08 performed at SAMSON AG, witnessed by BUREAU VERITAS.
 Test report no.: 1000286681 dd. 02.01.2023 performed at SAMSON AG, witnessed by an IACS member.
 Test report no.: 1000157051 dd. 28.04.2021 performed at SAMSON AG, witnessed by an IACS member.
 Test report no.: 239093803 dd. 15.07.2019 performed at SAMSON AG, witnessed by an IACS member.

3.2 Pressure test and leakage test according to DIN EN 60534-4 and ANSI FCI 70-2

Inspection certificate ds. 01/04/2014, witnessed by BUREAU VERITAS.
 Inspection certificate dd. 02/04/2020, witnessed by BUREAU VERITAS.
 Inspection certificates 0255ESN23, 02556ESN23 and 02556ESN23A dd. 16 Feb 2024, witnessed by BUREAU VERITAS.

4. APPLICATION / LIMITATION:

- 4.1 Low temperature and cryogenic globe valves intended to be used as control valves in cargo handling systems of oil tankers and liquefied gas tankers and in piping systems on board ships.
- 4.2 These valves are not to be used as shut-off valves.
- 4.3 The valves belong to class I according to BUREAU VERITAS Rules.
- 4.4 The valves intended to be used for handling of Propylene Oxide or Ethylene Oxide/ Propylene Oxide mixtures shall be of a fire safe design.
- 4.5 For liquefied gas application, the valve intended to be installed on BUREAU VERITAS classed ship have to comply with applicable BUREAU VERITAS Rules & IGC Code and type tests reports witnessed by BUREAU VERITAS are to be available for each type and size of valve.

- 4.6 When required in BUREAU VERITAS Rules applicable to liquefied gas carriers, Charpy V-notch impact test shall be carried out for castings. Castings in steel grades 316 and 316L at any temperature will be impact tested at -196 °C. A reduction may be granted for design temperature above -60 °C after examination by the Society.
- 4.7 The materials should be of a suitable type at the temperature and pressure for use with fluids intended to be carried. In particular the nature of materials, joints included, is to be selected according to the fluid to be conveyed and the temperature.
- 4.8 This approval does not include any operating gears or electrical equipment for remote control of the valves.
- 4.9 The valves are to be installed according to the BUREAU VERITAS Rules requirements and the manufacturer's instructions.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 The valves are to be supplied by **SAMSON AKTIENGESELLSCHAFT** in compliance with the type and the requirements described in this certificate.
- 5.2 This type of product is within the category IBV of BUREAU VERITAS Rule Note NR320
- 5.3 BUREAU VERITAS product certificate is required.
- 5.4 For information, **SAMSON AKTIENGESELLSCHAFT** has declared to BUREAU VERITAS the following production site:
SAMSON AKTIENGESELLSCHAFT, Frankfurt am Main / GERMANY
- 5.5 BUREAU VERITAS certificate is required for materials of valve housings of class I (DN≥50) or class II (DN≥100). Materials of valve housings of class I (DN<50) or class II (DN<100) and for other parts are to be with work's certificates.
- 5.6 For liquefied gas applications, materials are to comply with the approved drawings and the applicable requirements in BUREAU VERITAS Rules. Charpy impact test is to be as per the Society's Rules on materials, and where relevant, in accordance with requirements of IGC Code.
- 5.7 For liquefied gas applications, each valve is to be tested according to BUREAU VERITAS Rules. For other applications, each valve housing for class I and class II is to be hydraulically pressure tested to 1.5 times the design pressure. Valves intended to be fitted on the shipside below the load waterline are to be tested by hydraulic pressure not less than 0,5 MPa.

6. MARKING OF PRODUCT:

Each valve is at least to be marked with:

- Manufacturer's name or logo
- Type designation
- Size
- Design pressure and temperature range
- BUREAU VERITAS' marks

7. OTHERS:

- 7.1 It is **SAMSON AKTIENGESELLSCHAFT**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.
- 7.2 This certificate supersedes the Type Approval Certificate N° 36134/B1 BV issued on 11 May 2020 by the Society.

*** END OF CERTIFICATE ***