



ISO 15848-1

QUALIFICATION CERTIFICATE

This certificate is to certify that the valve below has passed the fugitive emission requirements according to standard: Industrial valves - Measurement, test and qualification procedures for fugitive emissions
Part 1: Classification system and qualification procedures for type testing of valves
(ISO 15848-1:2015)



BATUSAN MAKİNA SANAYİİ VE TİCARET A.Ş.

Dilovası Org. San. Bölgesi 2.Kısım D-2015 Sok. No: 6 Dilovası-Gebze / KOCAELİ / TR

Test valve details

Type : BALL VALVE
Nominal Size : DN 50 (#2")
Pressure Rating : CLASS 2500 (PN 420)
Body Material : ASTM A 350 LF-2
Bonnet Material : ASTM A 350 LF-2
Ball Material : ASTM A 350 LF-2 + ENP
Stem Material : 17-4 PH
Seal Seal : PEEK+VİTON
Drawing number : C2 M 31 B 01 08

Valve Qualification Range

Description	Tested Valve	Scope
Valve Details	DN 50 (#2") Ball Valve	DN 15 (#1/2") Ball Valve to DN 80 (#2") Ball Valve
Class	CLASS 2500 (PN 420)	CLASS 2500 (PN 420) to lower
Stem Material	17-4 PH	17-4 PH, AISI 4140, AISI 420, 430, 304, 316
Stem Material	PEEK+VİTON	FKM, NBR, VİTON, H-NBR, PTFE, PEEK
Stem Diameter	Ø30	Ø15mm up to Ø60mm
Temperature Class	T -46 °C, T 230 °C	T -46 °C (T -46 °C to RT), T 230 °C (RT to 230 °C)
Tightness Class	BH	BH

Performance Class: ISO FE BH – C03 – SSA 0 – T -46 °C, T 230 °C – CLASS 2500 – ISO 15848-1

CONCLUSIN: We document here that the pneumatic test of ball valves was carried out in BATUSAN's laboratory determined by the manufacturer and witnessed by the inspector of KUTCERT.

The equipment complies with the principal requirements of EN ISO 15848-1:2015+A1:2017 Industrial valves - Measurement, test and qualification procedures for fugitive emissions - Part 1: Classification system and qualification procedures for type testing of valves as a based on voluntary test.

This attestation applies only to sample of product providing to testing and verification at related test report and review of necessary technical documentation.

Annex / Report No : K260106-BTSN01
Certificate No : TR.KC-26.11-00
Certificate Period : 3 Yıl
Certificate Date : 06.01.2026



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EN ISO 15848-1:2015'e göre Küresel Vana Sızdırmazlığının Kontrolü Test Raporu

Ball Valve Tightness Check Test Report according to EN ISO 15848-1:2015

Vana Üreticisi
Valve Manufacturer

: **BATUSAN MAKİNA SANAYİİ VE TİCARET A.Ş.**
Dilovası Org. San. Bölgesi 2.Kısım D-2015 Sok. No: 6 Dilovası/ KOCAELİ/TR

Test Ürünü
Items Tested

: BALL VALVE
DN 50(#2") PN 420 (CLASS2500) FULL BORE

Tasarım No
Design No.

: C2 M 31 B 01 08

Body Material
Gövde Malzemesi

: ASTM A 350 LF-2

Bonnet Material
Kapak Malzemesi

: ASTM A 350 LF-2

Mil Material
Stem Malzemesi

: AISI 420

Body Seal
Gövde Conta

: PEEK+VİTON

Stem Seal
Mil Conta

: PEEK+VİTON

Stem Size
Mil Ölçüsü

: Ø 30mm

Taner ÇETİNKAYA
Industrie Service



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Scope of Test : Helium leakage test on the as-supplied test samples according to the above-mentioned standards and test conditions below with a stationary spindle
Test Kapsamı : Yukarıda belirtilen standartlara ve aşağıdaki test koşullarına göre sağlanan test ürünleri üzerinde sabit bir mil ile helyum sızıntı testi

Test Equipment : Helium Leakage Detector Agilent PHD-4
Test Ekipmanı : Helyum Kaçak Dedektörü

Test Method : Helium leakage tests according to EN ISO 15848-1:2015 with combination of CO₂
Test Metodu : mekanik cycle of total 2500 cycle and thermal cycle of room temperature.
See Appendix III
Toplam 2500 çevrimlik CO₂ mekanik çevrimi ve oda sıcaklığındaki termal çevrim kombinasyonu ile EN ISO 15848-1:2015'e göre helyum sızıntı testleri.
Ek III'e bakınız.

Test Procedure : Using a leak detector calibrated for helium test leakage,
Test Prosedürü : Sample valves; leakage rates were determined by filling the inner chamber with minimum 97% purity helium up to maximum load at room temperature and high pressures.
Operating cycles were performed at a frequency of 3 cycles/minute.
The Test was conducted from a combination of thermal and mechanical cycles of CO₂ as described in accordance with EN ISO 15848-1:2015 paragraph 5.2.4 and Annex III.
Max. the test temperature is RT with a total of 2500 mechanical cycles.
The leakage rate was measured after each cycle as described in Annex III.
After testing, the test valves were disassembled and all sealing components were visually inspected.
There is no appreciable wear and no other significant observations.

Helyum testi sızıntısı için kalibre edilmiş bir sızıntı detektörü kullanılarak, Numune Vanalar; oda sıcaklığında ve yüksek basınçlarda iç haznesi maksimum yüke kadar minimum %97 saflıkta Helyum ile doldurarak sızıntı oranları belirlendi. Çalışma döngüleri 3 döngü/dakikalık bir frekansta gerçekleştirildi. Test, EN ISO 15848-1:2015 Paragraf 5.2.4 ve Ek III'e göre açıklandığı gibi CO₂ termal ve mekanik çevrim kombinasyonundan gerçekleştirilmiştir. Maks. test sıcaklığı, toplam 2500 mekanik döngü ile RT'dir. Sızıntı oranı, Ek III'de açıklandığı gibi her bir döngüden sonra ölçülmüştür. Testten sonra test valfleri demonte edildi ve tüm sızdırmazlık bileşenleri görsel olarak incelendi. Kayda değer bir aşınma kaydı ve diğer önemli gözlemler yoktur.

RT: Room Temperature / Oda Sıcaklığı

Appendix : Appendix I : Valve Assembly Drawing / Vana Montaj Çizimi
Appendix II : Detailed Test Cycle / Detaylı Test Döngüsü
Appendix III : Detailed Test Results / Detaylı Test Sonuçları



Appendix I

Valve Assembly Drawing / Vana Montaj Çizimi

Sample Valve drawing no. C2 M 31 B 01 08, see the attachment	Numune Vana çizim no. C2 M 31 B 01 08, Ek'e bakın
Explanation; The test sample was taken as a reference from the BATUSAN production line and it was the product with serial number 001. Drawing C2 M 31 B 01 08 contains a list of the standard components of the Valve type tested, the valve body and their materials.	Açıklama; Test numunesi, BATUSAN üretim hattından referans olarak alındı ve 001 seri nolu üründü. C2 M 31 B 01 08 sayılı Çizim, test edilmiş Vana tipindeki standart bileşenlerini, valf gövdesinin ve bunların malzemelerinin bir listesini içerir.

Appendix II

Detailed Test Cycle / Detaylı Test Döngüsü

Measuring Point	Temperature Cycle	Number of Mech. Cycle	Accumulated Mech. Cycle	Class
1	RT	0	0	CO3
2	RT	50	50	
3	230 °C	50	100	
4	RT	50	150	
5	230 °C	50	200	
6	RT	5	205	
7	RT	795	1000	
8	230 °C	500	1500	
9	RT	1000	2000	
10	230 °C	1000	2500	
RT : Room Temperature / Oda Sıcaklığı				





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Appendix III

Detailed Test Results / Detaylı Test Sonuçları

Gövde contalarından sızıntı durumu
Leakage from body seals

≤50 ppmv

Mil contalarından sızıntı durumu
Leakage from shaft seals

3,57 x 10⁻⁵ mbar.l.s⁻¹

Size Pressure	Stem	Allowable (Body)	Allowable (Stem)	Temp.	Mechanical Cycle	Accum. Mechanical Cycle	Test Perssure (Bar)	Value (Body&Cap) (Unit:ppmv)	Measured Value (Stem) (Unit:mbar.l.s ⁻¹)	Result
DN 50 PN 420 FULL BORE	Ø 30 mm	50 ppmv	3,57 x 10 ⁻⁵ mbar.l.s ⁻¹	RT	0	0	630	5,4	3,60 x 10 ⁻⁷	CO3
				RT	50	50	630		3,64 x 10 ⁻⁷	
				230 °C	50	100	525		3,65 x 10 ⁻⁷	
				RT	50	150	630		3,68 x 10 ⁻⁷	
				230 °C	50	200	525		3,71 x 10 ⁻⁷	
				RT	5	205	630		3,74 x 10 ⁻⁷	
				RT	795	1000	630		3,80 x 10 ⁻⁷	
				230 °C	500	1500	525		3,82 x 10 ⁻⁷	
				RT	1000	2000	630		3,86 x 10 ⁻⁷	
				230 °C	1000	2500	525		3,92 x 10 ⁻⁷	



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