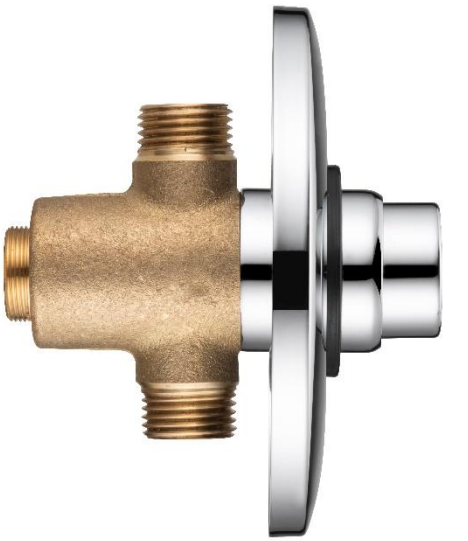
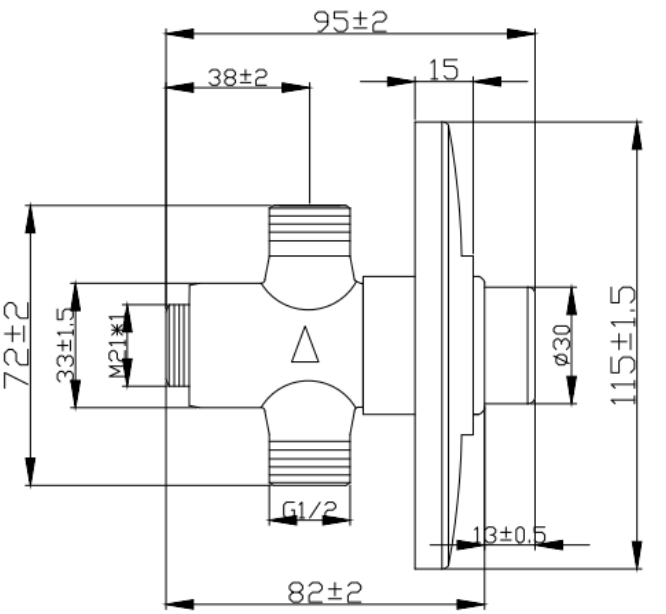
Brand	:	Bellini
Model	:	BL-66N
Color	:	Chrome
Size	:	
Description	:	½" Concealed self-closing shower valve
Origin	:	PRC
Remarks	:	GA approval letter is applying. Will be advised when it has been approved.





* Our company holds the right to improve the appearance, dimension and technology of the products without prior notice.

IDEAL Test Consultants Ltd.
亞典測試顧問有限公司

Unit 18, 8/F., World-Wide Industrial Ctn,
43 - 47 Shan Mei Street,
Fo Tan, N.T. H.K..
Tel: 3702 1986 **Fax**:3702 1987
Email: sunny@idealtest.com.hk

TEST REPORT

- 3 DEC 2024 Jenny

IDEAL Test Consultants Ltd.
CERTIFIED
TRUE COPY
Signed by : Ms Jenny Zhao

REPORT REFERENCE NO.	:	**REIA100r1**
TITLE	:	Testing of self-closing shower valve
METHOD OF TEST	:	BSEN816: 1997, BSEN1982: 2008 & BSEN12167: 2016
PERIOD OF TESTS	:	31st Jul., 2024 to 29th Nov., 2024
SAMPLE SUBMITTED BY (Information below provided by client)	:	E & I International Limited RM 5-7, 8/F., Blk B, Chung Mei Centre, 15 Hing Yip St., Kwun Tong, Kowloon, H.K..
DESCRIPTION OF SAMPLE	:	1/2" Concealed self-closing shower valve
BRAND	:	Bellini
MODEL	:	BL-66N
BODY MARKING	:	Bellini® Italy
MANUFACTURER	:	開平市潮灣卫浴实业有限公司
COUNTRY OF ORIGIN	:	PRC

SUMMARY OF RESULTS :

(Definition of 'C' – Conformance, '/' – No requirement, 'NC' – Non –Conformance & 'R' – Remainder)

Test	Overall results
1. Dimensions	C
2. Leaktightness characteristics	
2.1 Leaktightness of the obturator on the seat and leaktightness of the tap upstream of the obturator(s)	C
2.2 Leaktightness of the tap downstream of the obturator	C
3. Determination of the flow rate	
3.1 Test of the mechanical behaviour upstream of the obturator, with the obturator in the closed position	C
3.2 Test of the mechanical behaviour downstream of the obturator, with the obturator in the open position	C
4. Hydraulic characteristics	
4.1 Flow rate QM	/
4.2 Flow rate curve	/
4.3 Flow duration	/
5. Mechanical endurance test	C
5.1. Leaktightness test after completion of endurance cycles	C
5.2. Measurement of flow rate QM after completion of endurance cycles	/
6. Chemical composition	
6. 1 Metal component - Body	C
6. 2 Metal component –Part(1)	C
6. 3 Metal component –Part(2),Part(3) & Part(4)	C
7. Metal extraction test for non-metallic materials - Plastic parts	C

Date : 3 DEC 2024 Authorized signature : _____

Sunny K.S. Wong
(Director)

- 3 DEC 2024 Jenny

IDEAL Test Consultants Ltd.
CERTIFIED
TRUE COPY
Signed by : Ms Jenny Zhao

RESULTS: - (apply only to the sample tested)

1. Dimensions

(BSEN816:1997 clause 8)

Variable	Unit	Measured	Required	Remark
Nominal size	in	G1/2B	G1/2B	C
Body thickness	mm	2.0	/	/
			Overall result	**C**

2. Leaktightness characteristics

2.1 Leaktightness of the obturator on the seat and leaktightness the tap upstream of the obturator

(BSEN816:1997 Cl. 9.2.2)

ID	Variable	Unit	Measured	Required	Remark
1	Static pressure	bar	16	16 ± 0.5	C
	Duration	s	60	60 ± 5	C
	Leakage	---	No	No	C
2	Static pressure	bar	1	1 ± 0.1	C
	Duration	s	60	60 ± 5	C
	Leakage	---	No	No	C
				Overall result	**C**

2.2 Leaktightness of the tap downstream of the obturator

(BSEN816:1997 Cl. 9.2.3)

ID	Variable	Unit	Measured	Required	Remark
High pressure	Static pressure	bar	4	4 ±0.2	C
	Duration	s	60	60 ± 5	C
	Leakage	---	No	No	C
Low pressure	Static pressure	bar	0.2	0.2 ± 0.05	C
	Duration	s	60	60 ± 5	C
	Leakage	---	No	No	C
				Overall result	**C**

- 3 DEC 2024 Jenny

3. Determination of the flow rate

3.1 Test of the mechanical behaviour upstream of the obturator, with the obturator in the closed position

(BSEN816:1997 Cl. 10.2.2)

Variable	Unit	Measured	Required	Remark
Static pressure	bar	25	25 ± 0.5	C
Duration	s	60	60 ± 5	C
Permanent deformation	---	No	No	C
			Overall result	**C**

3.2 Test of the mechanical behaviour downstream of the obturator, with the obturator in the open position

(BSEN816:1997 Cl. 10.2.3)

Variable	Unit	Measured	Required	Remark
Static pressure	bar	4	4 ± 0.2	C
Duration	s	60	60 ± 5	C
Permanent deformation	---	No	No	C
			Overall result	**C**

4. Hydraulic characteristics

4.1 Flow rate QM

(BSEN816:1997 Cl. 11.4.1)

Variable	Unit	Measured	Required	Remark
Pressure	bar	3	3 ± 0.2	C
Flow rate	L / min	23	/	/
			Overall result	/

4.2. Flow rate curve (Cl.11.4.2)

Since T1 < 6 seconds, the flow rate curve test is not applied.

4.3 Flow duration

(BSEN816:1997 Cl. 11.4.3)

Variable	Unit	Measured	Required	Remark
Pressure	bar	3	3 ± 0.2	C
Flow duration	sec.	20	/	/
			Overall result	/

- 3 DEC 2024 Jenny

IDEAL Test Consultants Ltd.
CERTIFIED
TRUE COPY
Signed by : Ms Jenny Zhao

5. Mechanical endurance test

(BSEN816: 1997 Cl.13)

Variable	Unit	Measured	Required	Remark
Water temperature	° C	27	< 30	C
Test pressure	bar	3	3.0 ±0.2	C
Test cycles completed	cycles	210000	210000	C
			Overall result	C

5.1. Leaktightness test after completion of endurance cycles

- leaktightness of the obturator on the seat and of the tap upstream of the obturator

(BSEN816:1997 Cl. 9.2.2)

ID	Variable	Unit	Measured	Required	Remark
1	Static pressure	bar	16	16 ± 0.5	C
	Duration	s	60	60 ± 5	C
	Leakage	--	No	No	C
2	Static pressure	bar	1	1 ± 0.1	C
	Duration	s	60	60 ± 5	C
	Leakage	--	No	No	C
				Overall result	C

5.2. Measurement of flow rate QM after completion of endurance cycles

(BSEN816:1997 Cl. 11.4.1)

Variable	Unit	Measured	Required	Remark
Pressure	bar	3	3 ± 0.2	C
Flow rate	L / min	22	/	/
			Overall result	/

6. Chemical composition

6.1 Metal component – Body

(Designation: BSEN1982: 2008 – CC754S)

Variable	Unit	Measured	Required	Remark
Cu – Copper	%	59.8	58.0 - 63.0	C
Zn – Zinc	%	37.9	R	C
Pb – Lead	%	1.4	0.5 - 2.5	C
Sn – Tin	%	0.1	≤ 1.0	C
Ni – Nickel	%	0.1	≤ 1.0	C
Fe – Iron	%	0.1	≤ 0.7	C
Al – Aluminium	%	0.4	≤ 0.8	C
Mn – Manganese	%	<0.01	≤ 0.5	C
P – Phosphorus	%	0.01	≤ 0.02	C
Si – Silicon	%	<0.01	≤ 0.05	C
			Overall result	C

6.2 Metal component – Part(1)

(Designation: BSEN12167: 2016 – CW624N)

Variable	Unit	Measured	Required	Remark
Cu – Copper	%	56.9	55.0-57.0	C
Zn – Zinc	%	40.6	R	C
Pb – Lead	%	1.9	1.6-3.0	C
Sn – Tin	%	0.1	≤ 0.3	C
Ni – Nickel	%	0.03	≤ 0.3	C
Fe – Iron	%	0.1	≤ 0.3	C
Al – Aluminium	%	0.2	0.05-0.5	C
Others	%	0.17	≤ 0.2	C
			Overall result	C

6.3 Metal component – Part(2), Part(3) & Part(4)

(Designation: BSEN1982: 2008 – CC754S)

Variable	Unit	Measured			Required	Remark
		Part(2)	Part(3)	Part(4)		
Cu – Copper	%	58.2	62.6	62.1	58.0 - 63.0	C
Zn – Zinc	%	39.4	34.5	35.2	R	C
Pb – Lead	%	1.8	2.1	1.8	0.5 - 2.5	C
Sn – Tin	%	0.1	0.2	0.1	≤ 1.0	C
Ni – Nickel	%	0.01	0.04	0.1	≤ 1.0	C
Fe – Iron	%	0.2	0.3	0.3	≤ 0.7	C
Al – Aluminium	%	0.1	<0.01	<0.01	≤ 0.8	C
Mn – Manganese	%	<0.01	<0.01	<0.01	≤ 0.5	C
P – Phosphorus	%	0.01	0.01	0.01	≤ 0.02	C
Si – Silicon	%	<0.01	<0.01	<0.01	≤ 0.05	C
					Overall result	C

7. Metal extraction test for non-metallic materials- Plastic parts

The non-metallic material was immersed in boiling de-ionized water for 5±1 minutes in accordance with Clause 7.3 in BS 6920-3:2000.

The concentration of arsenic, lead, cadmium, chromium, selenium, nickel and antimony of extract were determined by the method specified in BS 6920-2.6:2000+A2:2014 against the maximum allowable values in WHO's Guidelines for Drinking Water Quality – Fourth Edition 2011.

ID	Variable	Unit	Measured	Required	Remark
Plastic parts	As - Arsenic	µg/l	< 1	≤ 10	C
	Pb - Lead	µg/l	< 3	≤ 10	C
	Cd - Cadmium	µg/l	< 1	≤ 3	C
	Cr - Chromium	µg/l	< 10	≤ 50	C
	Se - Selenium	µg/l	< 5	≤ 40	C
	Ni - Nickel	µg/l	< 10	≤ 70	C
	Sb - Antimony	µg/l	< 1	≤ 20	C
Overall result					**C**

Notes: -Requirements are based on WHO Guidelines for Drinking Water Quality Fourth Edition: 2011.

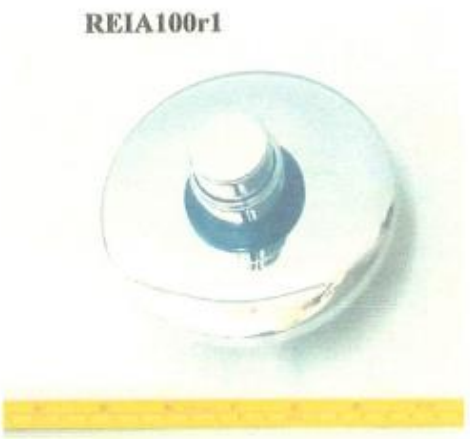


Figure 1-Sample

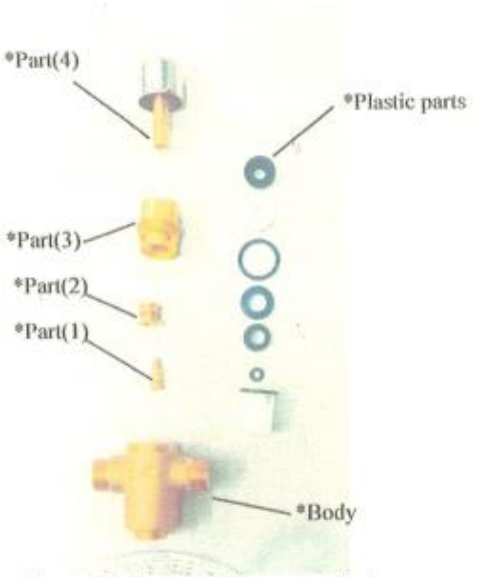
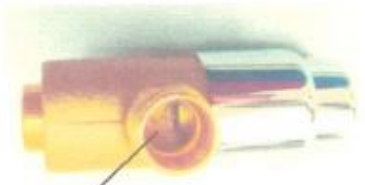


Figure 2- Sample disassembled
(* - Part /s which contact with water)



No electroplating materials were observed on the internal water passage surfaces of the sample under a non-destructive and unaided visual inspection.

Figure 3 - Surface of internal water passage

Figure 4 – Body marking

- End of report -