

# FUGRO TECHNICAL SERVICES LIMITED

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Client Ref.: --  
Report No.: 162570ST160569(4)

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## REPORT ON TESTING OF SINGLE LEVER TYPE MIXER WITH VALVE CARTRIDGE

### Information Supplied by Client

Client : E & I International Limited.  
Client Address : 8/F., Block B, Chung Mei Centre, 15 Hing Yip Street, Kwun Tong, Kowloon, Hong Kong.  
Project : Testing for Single Lever Sink Mixer  
Sample Description : Single Lever Sink Mixer  
Brand Name : Bellini  
Body Marking : Bellini  
Model : BXX-3688C/YY  
(Where YY Denotes the code of finish : CR: Chrome/ BS: White/ NS: Black  
Matt/ OR: Gold/ SN: Nickel)(Where XX Denotes the code of handle : VF, AS,  
AL, VT, BD)  
Manufacturer : E & I International Limited.  
Country of Origin : China



### Laboratory Information

Lab. Sample I.D. : ST160569/5  
Date Received : 23 May 2016, 30 May 2016 and 08 September 2016  
Date Test Started : 20 June 2016  
Date Test Completed : 24 October 2016  
Test Method : BS EN 1286 : 1999, BS EN 1982 : 2008, BS EN 10088-1 : 2014, BS EN 12163 : 2011 & World Health Organisation in international standards for drinking water quality 2014 Ed.

### Test Results

#### 1. DIMENSIONS

Dimension, BS EN 1286 : 1999, Clause 8

Below dimension ref. to BS EN 1286 : 1999, Clause 8.2.1.1, Figure 1a and Table 3

Dimension	Test Results	Dimension	Values (mm)	Requirement
Nominal size	½"	G	--	45mm (min.)
Bore Seat	8.80mm	V	--	32mm (max.)
Thickness	0.6mm	E	249.00	25mm (min.)
		D	185.00	100mm (min.)

#### 2. PRESSURE TEST

##### 2.1 LEAKTIGHTNESS OF TAPWARE UPSTREAM OF THE OBTURATOR

(BS EN 1286 : 1999, Clause 9.3)

Applied pressure (bar)	Duration (sec)	Observation	Test Result
16	60	- No leakage or seepage through the walls - No leakage at the obturator	Pass

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**2.2 LEAKTIGHTNESS OF THE OBTURATOR : CROSS FLOW BETWEEN HOT WATER AND COLD WATER****(BS EN 1286 : 1999, Clause 9.4)**

Test Position	Applied Pressure (bar)	Duration (sec)	Observation	Test Results
Hot	4	60	No leakage or seepage at the outlet or at the end of the unconnected inlet	Pass
Cold	4	60	No leakage or seepage at the outlet or at the end of the unconnected inlet	Pass

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Certified True Copy of Test Report

Certified by :   
Name/Title : Chris Ng / Assistant Manager  
Date : 01 NOV 2016

**2.3 Leaktightness of the mixing valve downstream from the obturator****(BS EN 1286 : 1999, Clause 9.5)**

Applied pressure (bar)	Duration (sec)	Observation	Test Results
4	60	No leakage or seepage	Pass
0.2	60	No leakage or seepage	Pass

**3. FLOW TEST****(BS EN 1286 : 1999, Clause 10.5)**

Test Temperature (°C)	Running Pressure (bar)	Flow Rate (l/s)
10-15	0.1	0.052
34		0.058
38		0.060
42		0.062
60-65		0.047

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## 4. CHEMICAL COMPOSITION (Body)

Testing items	Results	Specification according to BS EN 1982 : 2008 Grade CC754S castings
1. Aluminium (Al) content, %	0.53	0.8 max.
2. Copper (Cu) content, % <sup>1)</sup>	59.4	58.0 - 63.0
3. Nickel (Ni) content, %	0.05	1.0 max.
4. Lead (Pb) content, %	1.5	0.5 -2.5
5. Tin (Sn) content, %	0.11	1.0 max.
6. Zinc (Zn) content, %	Remainder	Remainder
7. Iron (Fe) content, %	0.12	0.7 max.
8. Manganese (Mn) content, %	<0.01	0.5 max.
9. Phosphorus (P) content, %	<0.01	0.02 max.
10. Silicon (Si) content, %	<0.01	0.05 max.

Remark : <sup>1)</sup> Include nickel

### Note

Based on the test results of the submitted sample, it is found that the sample complies with the chemical composition specification of BS EN 1982 : 2008 Grade CC754S.

## 5. CHEMICAL COMPOSITION (Spout)

Testing items	Results	Specification according to BS EN 12163 : 2011 Grade CW508L
1. Aluminum (Al) content, %	<0.01	0.02 max.
2. Copper (Cu) content, %	62.7	62.0 - 64.0
3. Nickel (Ni) content, %	<0.01	0.3 max.
4. Lead (Pb) content, %	<0.01	0.1 max.
5. Tin (Sn) content, %	<0.01	0.1 max.
6. Zinc (Zn) content, %	37.2	Remainder
7. Iron (Fe) content, %	<0.01	0.1 max.
Hence, others content, %	<0.1	0.1 max.

### Note

Based on the test results of the submitted sample, it is found that the sample complies with the chemical composition specification of BS EN 12163 : 2011 Grade CW508L.

## 6. Extraction of Metals from the Valve Cartridge

Test method used : The valve cartridge was immersed in 100°C water for 5 minutes and the concentration of metals was then determined.

Testing items	Concentration of metals in the extract (µg/L)	Maximum allowable concentration according to WHO Guidelines for Drinking-water Quality, Fourth Edition (µg / L)	Test Results
1. Arsenic content	< 1	≤10	Pass
2. Cadmium content	< 0.5	≤3	
3. Chromium content	< 1	≤50	
4. Lead content	3	≤10	
5. Selenium content	< 1	≤40	
6. Nickel content	< 1	≤70	

The amount of heavy metals present is less than the permissible limits of the World Health Organisation in international Standards for drinking water quality 2014 Ed.

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## 7. Summary of Results (apply only to sample tested)

Dimensions	-- As shown in section 1
Hydraulic pressure test	-- Pass
Flow test	-- As shown in section 3
Chemical composition (body)	-- Pass (Grade : CC754S castings of BS EN 1982 : 2008)
Chemical composition (spout)	-- Pass (Grade CW508L of BS EN 12163 : 2011)
Extraction of metals from the valve cartridge	-- Pass (No adverse physical effect or no toxic hazard to human beings)

- Remarks :
- (1) No requirements in dimensions for body thickness and bore of seat are stated in the BS EN 1286 : 1999 and therefore the measured dimension are used for reference.
  - (2) The test samples are shown in the photographs on page 5 of this report.
  - (3) The minimum flow rate under BS EN 1286 is not required according to WSD Circular Letter No. 1/2010 issued on 6 May 2010.
  - (4) No metallic coating was noted on the visual internal water contact surface of the sample.



Checked by : Date : 31/10/2016 Certified by : Date : 31/10/2016  
Chan Chun Wai Ivan  
Manager (Product Testing Laboratory)

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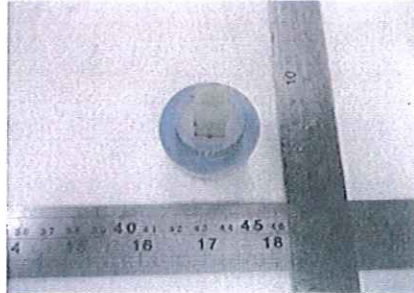
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Test Sample  
Sample I.D.: ST160569/5



Test Sample of Valve Cartridge  
Sample I.D.: ST160569/5



Test Sample of Valve Cartridge  
Sample I.D.: ST160569/5



Test Sample of Valve Cartridge  
Sample I.D.: ST160569/5



Body Marking  
Sample I.D.: ST160569/5

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Certified True Copy of Test Report  
Certified by:   
Name/Title : Chris Ng / Assistant Manager  
Date : 01 NOV 2016

\*\* End of Report \*\*



自願參與用水效益標籤計劃 - 水龍頭  
Voluntary Water Efficiency Labelling Scheme - Water Taps

Certificate of Registration  
註冊證書


茲證明

This is to certify that

E&I International Limited

將下列水龍頭在本計劃內註冊：  
has registered the following water tap under this scheme :

牌子 / Brand	:	Bellini
型號 / Model	:	BVF-3688C/CR
種類 / Type	:	Mixing
原產地 / Country or Region Origin	:	China

在用水效益標籤上展示的標誌 <i>Symbolic Presentation on the Water Efficiency Label</i>	:		滴水點 <i>Water droplet(s)</i>
用水效益級別 <i>Water Efficiency Grade</i>	:	1	
耗水量 <i>Water Consumption</i>	:	3.5	公升/分鐘 <i>litres/minute</i>

簽發日期：  
Date of Issue: 8 March 2017

 水務署  
Water Supplies Department



水務署署長(周世威代行)  
for Director of Water Supplies