Test Report No. 7191053884-MEC13-CLC dated 01 MARCH 2013

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SUBJECT:

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Testing of Tap/Fittings/Mixers.

TESTED FOR:

Hoe Kee Hardware Pte Ltd 8 Genting Road #02-00, The Blue Building Singapore 349472

Attn : Ms. Nancy Quah

METHOD OF TEST:

PUB Requirement for Water Efficiency Labelling Scheme

BS EN 817 : 2008 Sanitary tapware – Mechanical mixer (PN 10) – General technical specifications

DESCRIPTION OF SAMPLE:

Product Brand Name Tap/Fittings/Mixers Blanco

S/N	Description	Model
1.	Kitchen Mixer Linee	517594
2.	Kitchen Mixer	517557
3.	Kitchen Mixer	517597
4.	Kitchen Mixer	515581

Note: Refer to APPENDIX for photo.



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TEST RESULTS:

Hydraulic Characteristics

1) Description: Kitchen Mixer Model: 517594

Flow Pressure (bar)	Flow Rate (litres/min)	Flow Rate Requirements for Water Efficiency Labelling	Photo
0	0		
0.5	1.7		
1.0	2.8		
1.5	3.1	Date diverte / Eittig and	
2.0	3.6	Sink Taps & Mixers/Bib Taps	All provide the second se
2.5	3.9		
3.0	4.0	6 to 8 litres/min (1 tick)	
3.5	4.1	4 to 6 Litres/min (2 ticks)	
4.0	4.2	4 littes/fill of less (3 licks)	
4.5	4.4		"Blanco" Kitchen Mixer / 51/7594
5.0	4.5		
5.5	4.7		



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TEST RESULTS:

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Hydraulic Characteristics

2) Description: Kitchen Mixer Model: 517557

Flow Pressure (bar)	Flow Rate (litres/min)	Flow Rate Requirements for Water Efficiency Labelling	Photo
0	0		
0.5	1.5		
1.0	2.7		6
1.5	3.1	Dura di unda (Fiddi ang	
2.0	3.6	Sink Taps & Mixers/Bib Taps	A I
2.5	3.8		
3.0	3.9	6 to 8 litres/min (1 tick)	
3.5	4.1	4 to 6 Litres/min (2 ticks)	
4.0	4.2		
4.5	4.3		"Blancs" Kitchen Mixer / 517557
5.0	4.5		
5.5	4.8		
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TEST RESULTS:

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Hydraulic Characteristics

3) Description: Kitchen Mixer Model: 517597

Flow Pressure (bar)	Flow Rate (litres/min)	Flow Rate Requirements for Water Efficiency Labelling	Photo
0	0		
0.5	1.5		
1.0	2.4		
1.5	2.8		
2.0	3.5	Sink Taps & Mixers/Bib Taps	
2.5	3.7	6 to 8 litres/min (1 tick)	
3.0	3.8		
3.5	4.1	4 to 6 Litres/min (2 ticks)	
4.0	4.2	4 litres/min or less (3 ticks)	Tares Vinne Sour/10704
4.5	4.3		
5.0	4.4		
5.5	4.7		
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TEST RESULTS:

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Hydraulic Characteristics

4) Description: Kitchen Mixer Model: 515581

Flow Pressure (bar)	Flow Rate (litres/min)	Flow Rate Requirements for Water Efficiency Labelling	Photo
0	0		
0.5	1.5		
1.0	2.6		
1.5	3.0		
2.0	3.4	Sink Taps & Mixers/Bib Taps	
2.5	3.7		
3.0	3.8	6 to 8 litres/min (1 tick)	·
3.5	4.1	4 to 6 Litres/min (2 ticks)	
4.0	4.2		"Blanco" Kitchen Mixer / 515581
4.5	4.3		
5.0	4.4		
5.5	4.6		
	1		







TEST RESULTS:

(A1) Leaktightness Characteristics

Sample Reference Characteristics	Kitchen Mixer 517594 517557	BS EN 817 : 2008 Requirements
Leaktightness of the obturator and of the mixing valve upstream of the obturator with the obturator in the	Passed	Clause 8.3.2 a) Verification of leaktightness upstream of the obturator; Throughout the duration of the test there shall be no leakage or seepage through the walls
closed position	Passed	 b) Verification of leaktightness of the obturator; Throughout the duration of the test there shall be no leakage of the obturator
Leaktightness of the mixing valve downstream of the obturator with the obturator open	Passed	Clause 8.4.3 Throughout the duration of the test there shall be no leakage or seepage through the walls
Leaktightness of the obturator: cross flow between hot water and cold water	Passed	Clause 8.7.2 Throughout the duration of the test, there shall be no leakage or seepage at the outlet or at the end of the unconnected inlet.

(B1) Hydraulic Characteristics

Sample Reference Characteristics	Kitchen Mixer		BS EN 817 : 2008 Requirements
Determination of Flow rate; Test at	517594	4.0** l/min	Clause 10.6.3 The flow rate measured at 3.0 bar shall, depending on the type of appliance for which the mixing valve is intended, be as specified in Table 10 (Refer Appendix)
3.0 bar dynamic reference pressure	517557	3.9** l/min	
Determination of sensitivity; Supply pressure of 3.0 bar	Passed		Clause 10.7.5 The sensitivity measured shall, depending on the type of appliance for which the mixing valve is intended, be as specified in Table 11 (Refer Appendix)

"**"Non-compliance with BS EN 817 : 2008 requirements (Please refer to page 10 of 13)

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TEST RESULTS: Cont'd

(C1) Mechanical Strength Characteristics-Torsion test for operating mechanism

Sample Reference Characteristics	Kitchen Mixer 517594 517557	BS EN 817 : 2008 Requirements
Submitting the operating mechanism to a given torque to verify its strength with no water supplied	Passed	Clause 11.2.5 There shall be no deformation or other deterioration which impairs the function of the mixing valve; the mixing valve shall satisfy the requirement for leaktightness.

(D1) Mechanical Performance under Pressure Characteristics

Sample Reference Characteristics	Kitchen Mixer 517594 517557	BS EN 817 : 2008 Requirements
Mechanical behaviour upstream of the obturator - Obturator in the close position	Passed	Clause 9.4.2 Throughout the duration of the test, there shall be no permanent deformation of any part of the mixing valve
Mechanical behaviour downstream of the obturator - Obturator in the open position	Passed	Clause 9.5.2 There shall be no permanent deformation in any part of the mechanical mixing valve.

(E1) Mechanical Endurance Test of Obturator (Headwork)

Sample Reference Characteristics	Kitchen Mixer 517594	BS EN 817 : 2008 Requirements
Number of cycles : 70,000	Passed	Clause 12.1.2 During the test, no component fracture, sticking or leakage shall occur.

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TEST RESULTS:

(A2) Leaktightness Characteristics

Sample Reference Characteristics	Kitchen Mixer 517594 515581	BS EN 817 : 2008 Requirements
Leaktightness of the obturator and of the mixing valve upstream of the obturator with the obturator in the	Passed	Clause 8.3.2 a) Verification of leaktightness upstream of the obturator; Throughout the duration of the test there shall be no leakage or seepage through the walls
closed position	Passed	 b) Verification of leaktightness of the obturator; Throughout the duration of the test there shall be no leakage of the obturator
Leaktightness of the mixing valve downstream of the obturator with the obturator open	Passed	Clause 8.4.3 Throughout the duration of the test there shall be no leakage or seepage through the walls
Leaktightness of the obturator: cross flow between hot water and cold water	Passed	Clause 8.7.2 Throughout the duration of the test, there shall be no leakage or seepage at the outlet or at the end of the unconnected inlet.

(B2) Hydraulic Characteristics

Sample Reference Characteristics	Kitchen Mixer		BS EN 817 : 2008 Requirements
Determination of Flow rate; Test at	517594	3.8** l/min	Clause 10.6.3 The flow rate measured at 3.0 bar shall, depending on the type of appliance for
3.0 bar dynamic reference pressure	515581	3.8** l/min	which the mixing valve is intended, be as specified in Table 10 (Refer Appendix)
Determination of sensitivity; Supply pressure of 3.0 bar	Passed		Clause 10.7.5 The sensitivity measured shall, depending on the type of appliance for which the mixing valve is intended, be as specified in Table 11 (Refer Appendix)

"**"Non-compliance with BS EN 817 : 2008 requirements (Please refer to page 10 of 13)

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TEST RESULTS: Cont'd

(C2) Mechanical Strength Characteristics-Torsion test for operating mechanism

Sample Reference Characteristics	Kitchen Mixer 517594 515581	BS EN 817 : 2008 Requirements
Submitting the operating mechanism to a given torque to verify its strength with no water supplied	Passed	Clause 11.2.5 There shall be no deformation or other deterioration which impairs the function of the mixing valve; the mixing valve shall satisfy the requirement for leaktightness.

(D2) Mechanical Performance under Pressure Characteristics

Sample Reference Characteristics	Kitchen Mixer 517594 515581	BS EN 817 : 2008 Requirements
Mechanical behaviour upstream of the obturator - Obturator in the close position	Passed	Clause 9.4.2 Throughout the duration of the test, there shall be no permanent deformation of any part of the mixing valve
Mechanical behaviour downstream of the obturator - Obturator in the open position	Passed	Clause 9.5.2 There shall be no permanent deformation in any part of the mechanical mixing valve.

(E2) Mechanical Endurance Test of Swivel Nozzles

Sample Reference Characteristics	Kitchen Mixer 517594	BS EN 817 : 2008 Requirements
Number of cycles : 80,000	Passed	Clause 12.3.4 During the test, there shall be no deformation, fracture of the swivel nozzle or the device connecting it to the body or any leakage of the assembly

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REMARKS:

S/N	Type of tap fittings	Model	BS EN 817 : 2008 Requirements	Characteristics
1.	Kitchen Mixer	517594	Complied	A) Leaktightness Characteristics
2.	Kitchen Mixer	517557	Complied	 C) Mechanical Strength Characteristics –Torsion test for operating mechanism
3.	Kitchen Mixer	517597	Complied	 D) Mechanical performance under pressure Characteristics
4.	Kitchen Mixer	515581	Complied	 E) Mechanical Endurance(Head work &Swivel Nozzle)

a. The test samples complied with BS EN 817 : 2008 requirements except hydraulic characteristics.

b. The hydraulic characteristics complied with SS CP 48: 2005 requirements.



Chua Lee Choong Higher Associate Engineer

Sebes

Engineer Industrial Products Mechanical Centre



APPENDIX:

Table 10- Flow rates according to application

Requirement	
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(4.0 to 9.0) l/min [(0.066 to 0.15) l/s]	
Min 12.0 l/m (0.2 l/s) ^a	
Min 19.0 l/min (0.316 l/s) (Full cold or full hot position)	
Min 20.0 l/min (0.33 l/s) in the range of (34°C to 44°C)	

^aFor mixing valve with pull out spray or spray attachments or flexible supply hoses a minimum flow rate of 9.0 I/min (0.15 I/s) shall apply

*Table as per BS EN 817 : 2008

Table 11- Performance levels

	and a second	Concernation and Concern	
Actuation of the mixing valve ^b	Basin, sink, bidet ^a	Shower, bath/shower at shower outlet only	
Control devices with r>45mm	Min 10mm	Min 12 mm	
Control deviceswith r≤45mm	Min 10° angular or min 10 mm	Min 12° angular or min 12 mm	
^a Basin, hidet or sink mixing valve are not tested if they are equipped with the same valve and control device as the shower and			

 ^aBasin, bidet or sink mixing valve are not tested if they are equipped bath/shower mixing valve.
 ^bIncluding sequential mixing valve, joystick or any new technology
 *Table as per BS EN 817 : 2008 control device as the shower and

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APPENDIX: Cont,d

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Photo 3." "Blanco" Kitchen Mixer Model: 517597

Photo 4." "Blanco" Kitchen Mixer Model: 515581

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