

**Test Report No. 7191028721-MEC12-CR1-LNB**  
**dated 21 March 2012**



PSB Singapore

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**SUBJECT:**

Testing of " SIAMP " brand plastic concealed WC cistern .

**TESTED FOR:**

SIAMP Ltd  
Lot E1 K1 Road  
Cat Lai Industrial Zone Cluster 2  
Thanh My Loi Ward, District 2  
Ho Chi Minh City  
Vietnam

Mr Huynh Minh Khuong

**DESCRIPTION OF SAMPLE:**

One unit of " SIAMP " Brand ( Model : Conceal Cistern 6030 ) plastic concealed WC cistern was received on 10/1/2012.

**TEST METHOD:**

1. SS 378:1996 Specification for low capacity water closet flushing cisterns up to 4.5L(max).
2. SS 379:1996 Specification for vitreous china water closet pans for use with low capacity water closet flushing cisterns up to 4.5L(max).
3. BS 1212:Part 4:1991 Specification for compact type float operated valves for water closet flushing cisterns(including floats)

**PUB's Requirements issued on July 06 - Testing Requirements for Dual-Flush Low Capacity WC Flushing Cistern**

- (1) Clause 2.a - Volume of discharge – Reduced Flush
- (2) Clause 2.b - Dilution Test – Reduced Flush
- (3) Clause 2.c - Endurance Test - 100,000 cycles – Reduced Flush
- (4) Clause 2.d - Load Test on Operating Mechanism – Reduced Flush
- (5) Clause 2.e - Paper Discharge Test – Reduced Flush



Laboratory:  
TÜV SÜD PSB Pte. Ltd.  
No.1 Science Park Drive  
Singapore 118221

Phone : +65-6885 1333  
Fax : +65-6776 8670  
E-mail: testing@tuv-sud-psb.sg  
www.tuv-sud-psb.sg  
Co. Reg : 199002667R

Regional Head Office:  
TÜV SÜD Asia Pacific Pte. Ltd.  
3 Science Park Drive, #04-01/05  
The Franklin, Singapore 118223  
**TÜV®**

**RESULTS:**

**(A) Full Flush Test**

**(A1) Dimensional Measurements on WC Cistern (All dimensions in mm)**

Sample Reference	SIAMP CONCEAL CISTERN 6030	SS 378 : 1996 Requirements
Thickness of plastic shell	3	3 minimum
Distance from overflowing level of warning pipe to water level	30	25 min, 32 max
Nominal size of ball valve	½"	½"
Internal diameter of warning pipe	45	19 min
Spill-over level above water level	80	60 min.

**(A2) Flushing Test**

Sample Reference	SIAMP CONCEAL CISTERN 6030		SS 378 & SS379 : 1996 Requirements
	Before Endurance	After Endurance	
Volume of discharge (litres)	4.0	4.0	4.5 (+0.0, -1.0)
Toilet paper test	Passed	Passed	The trap shall be cleared completely four times out of five in each test.
Towel test	Passed	Passed	
Ball test	Passed	Passed	
Sawdust test	Passed	Passed	The unflushed areas between the water surface and the underside of the rim shall not exceed 5000 mm <sup>2</sup>

Note: The cistern was coupled with a wall hung WC pan for the flushing test




**RESULTS:**

**(A3) Physical Test**

Sample Reference	SIAMP CONCEAL CISTERN 6030	SS 378 : 1996 Requirements
Front thrust test	Passed	Cistern shall not crack, fail or permanently distort.
Water line	Passed	Shall be marked permanently inside the cistern.
Resistance to torque (15 Nm) of flushing device	NA	Clause 4.5.2
Antisiphonage test (Backflow)	Passed	Clause 4.15
Adjustability test of float-operated valve	Passed	Clause 4.13
Dead load test at 23 kg on push button	Passed	Clause 5.2.4
Hydraulic test on connection inlet pipe	Passed	Shall be capable of withstanding a pressure of 2 MN/m <sup>2</sup> .
Torque test on connection inlet pipe (15 Nm)	Passed	Shall be no sign of distortion of the threads or the flats of the hexagon.
Distortion resistance	Passed	Clause 4.2.3.3
Impact test	Passed	Clause 4.2.3.6
Leakage test	Passed	Clause 4.2.3.7

**(A4) Endurance Test of 100,000 cycles**

Sample Reference	SIAMP CONCEAL CISTERN 6030	SS 378 : 1996 Requirements
Result (The water closet flushing cistern was subjected to repeated flushing operation simulating the cistern in actual use)	Passed	<u>Clause 7.3</u> On completion of the test, it shall not leak or show sign of defect or damage. The cistern shall also be capable of complying with clause 4.6.




**RESULTS:**

**(A5) Performance of Float Operated Valve**

Sample Reference	SIAMP CONCEAL CISTERN 6030	BS 1212 : Pt. 4 : 1991 Requirements
Inlet shank and backnuts distortion	Passed	No visible distortion of the inlet shank, backnuts or integral body flange.
Static hydraulic pressure at 20 bar for 60 seconds	Passed	Shall withstand a pressure of 20 bar for 60 seconds without leaking.
Shut-off pressure test	Passed	Shall withstand a shut-off pressure of 14 bar without passing water.
Lever deflection test after 28 days	Passed	No evidence of the valve passing water or any increase in water level.
Dynamic pressure test at 10 bar for 60 seconds	Passed	Shall show no permanent deformation or separation of any component part.

**( B ) Reduced Flush**

Sample Reference	SIAMP CONCEAL CISTERN 6030	Clause 2.a - Reduced Flush Requirements
Volume of discharge – Reduced Flush	2.5	Shall not be more than 3 litres

Sample Reference	SIAMP CONCEAL CISTERN 6030	Clause 2.b - Reduced Flush Requirements
Dilution Test – Reduced Flush	Passed	Shall have no visible traces of the colouring matter in the water trap of the WC pan

Sample Reference	SIAMP CONCEAL CISTERN 6030	Clause 2.c - Reduced Flush Requirements
Endurance Test – 100,000 cycles – Reduced Flush	Passed	Shall not leak or show signs of defect or damage

Sample Reference	SIAMP CONCEAL CISTERN 6030	Clause 2.a – Reduced Flush Requirements
Volume of discharge after Endurance Test – Reduced Flush	2.5	Shall not be more than 3 litres




**TEST RESULTS:**

**( B ) Reduced Flush**

Sample Reference	SIAMP CONCEAL CISTERN 6030	Clause 2.d -- Reduced Flush requirements
Load Test on Operating Mechanism	Passed	Shall not distort to such an extent that any part becomes detached or inoperative

Sample Reference	SIAMP CONCEAL CISTERN 6030	SS 378 : 1996 Requirements,
Backflow test after endurance	Passed	SubClause 4.15

Sample Reference	SIAMP CONCEAL CISTERN 6030	Clause 2.e - Reduced Flush Requirements
Reduced Flush – Paper Discharge Test	Passed	Shall discharge from the outlet spigot of the pan all of 4 pcs of joined twin-ply papers in at least two out of the three tests

Note: The cistern was coupled with a wall hung WC pan for the flushing test



Concealed WC Cistern





Inlet & Flush Valves



Push Button

Remark : The buttons for activation of Full-Flush and Reduced-Flush were clearly and properly designed/labeled so that they are clearly and easily distinguishable by all users

  
Lee Ngai Boon  
Associate Engineer

  
Chua Peck Cheong  
Product Manager  
Automotive & Industrial Group  
Mechanical Centre

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July 2011

