



Laboratory of Kohler (Thailand) Public Company Limited

32 M1, Tandieo, Kaeng Khoi, Saraburi 18110, Thailand

Tel: (+66)36-251701-6 Ext 966, Fax : (+66)36-251707-11



Product Testing Report

Requester Product Engineer

Page 1 of 4



Requested by Mr. Natanon Duangrivong

Testing Place Laboratory of Kohler (Thailand) Public Company Limited
32 M1, Tandieo, Kaeng Khoi, Saraburi 18110, Thailand

Type Toilets /Dual Flush S Trap

Product name MAPLE 2 PCS TOILET : TRADEMARK : KARAT

Product code 20841ME-S-WK

Standard required ☒ SASO1473 : ☐ Other (Please identify).....

Received date VC: 10 Oct 23 TN: 12 Oct 23

Test date VC: 11 Oct 23 TN: 17 Oct 23

Report date VC: 11 Oct 23 TN: 27 Oct 23

Sample condition Normal sample condition

Testing report number WC_S2310001

Sample number 1

Result The test result are detailed on the next pages

Reported by *Sompop Nuansri*

(Sompop Nuansri)

Technician of VC Laboratory

Checked/Approved by *Seangjan Kanjantuk*

(Seangjan Kanjantuk)

Technician management VC Laboratory

Reported by *Dechhemmarut Boonchalee*

(Dechhemmarut Boonchalee)

Technician of TN Laboratory

Checked/Approved by *Jeerapa Butkanit*

(Jeerapa Butkanit)

Technical Management TN Laboratory

This report lists only reports on samples that have been tested, certified tests, or delivered products, language or partial test reports, or is used for any advertising purposes without the permission of the laboratory of Kohler (Thailand) Public Company Limited.

FM-KT-GEN-510-4-20-04-21

Testing Report number : WC_S2310001

Sample Number : 1 Bar Code : ST74HBS3N : Code model 20841ME-S-WK Type : Toilets / Dual Flush S Trap

Page 2 of 4

No.	Cluase	Description / Requirement	RESULTS		
			Sample1	Sample2	
1	7.1	Trap seal deepth (50 mm Min.)	53	-	
2	7.2	Trap seal restoration (50 mm Min.)	53	-	
3	7.3	Water consumption rate, Maximum flow rate (Lite/min)	<u>Nominal Flow Rate ,Q_{nom} Calculated</u>	3.20	-
			<u>Full Flush</u>		
		(a) Single Flush , (Floor-mounted Bowl) S-trap (3.0+0.5)	Maximum flow rate, Q _{max}	4.70	-
		(b) Single Flush , (Wall hung) P-Trap (4.0+0.5)	@ 1.5 bar (20 PSI)	4.73	-
		(c) Dual flush S-Trap (calculated) (3.0+0.5)	@ 3.0 bar (50 PSI)	4.67	-
		(d) Dual flush P-Trap (calculated) (4.0+0.5)	@ 4.5 bar (80 PSI)	4.69	-
			<u>Half Flush</u>		
			Maximum flow rate, Q _{max}	2.90	-
			@ 1.5 bar (20 PSI)	2.94	-
			@ 3.0 bar (50 PSI)	2.88	-
			@ 4.5 bar (80 PSI)	2.88	-
4	7.4	Granule and Ball			
		Granule (125 Max.)	24	-	
		Ball (5 Max.)	0	-	
5	7.5	Surface Wash (Longest / Total) (13 mm / 50 mm Max.)	0	-	
6	7.6	Mixed media			
		Sponges 1 st flush / 2 nd flush Paper Balls 1 st flush / 2 nd flush	28 0	- -	
7	7.7	Drain line transport characterization (12.2 m Min.)	16.00	-	
8	7.8	Overflow for gravity tanks (No leakage)	Pass	-	
9	5.2.3	Critical Level (CL) (25 mm Min.)	28	-	
10	2.5	Dye test @ Ratio 17/1 (Duel Flush only)	Pass	-	
11	2.5	4 Toilet Paper Balls (Duel Flush only)	4	-	

No.	Cluase	DESCRIPTION	REQUIREMENT		RESULTS	
			for floor-mounted bottom-outlet water closets	for rear-outlet and rear-spigot-outlet water closets	Sample1	Sample2
1	4.3	Outlet Dimension				
		Base Outlet Outside Diameter	95 mm max.	102 +/- 5 mm	74.10	-
		Base Ring Inside Diameter	184 mm min.	150 mm min	209.30	-
		Floor Flange Depth	13 - 19 mm		17.60	-
		Outlet Length	-	40 mm min	-	-
		Floor to Center Outlet	-	190 +/- 9.5 mm	-	-
		Floor Fixing Holes Size	19 x 11 to 25 x 13 mm	-	15/15.9	-
		Floor Fixing Hole Spacing	152 +/- 7.6 mm	-	157	-
2	4.5	Rough In Details	250 +/- 55 mm		305	-
3	4.6	Seat Mounting Holes				
		Seat Mounting Hole Spacing	140 +/-20 mm	140 +/- 20 mm	146.20	-
		Seat Mounting Hole Diamenter	14.5 +/- 1.5 mm	14.5 +/- 1.5 mm	15.40	-
4	4.7	Rim Profiles				
		A 'Length (Elongated)	400 - 600 mm	400 - 600 mm	467.40	-
		B 'Length (Round)	350 - 530 mm	350 - 530 mm	-	-
		Width	300 - 450 mm	300 - 450 mm	351.70	-
5	4.8	Water Surface Dimensions				
		Length	100 mm min	100 mm min	130	-
		Width	100 mm min	100 mm min	105	-

Testing Report number : WC_S2310001

Page 3 of 4

No.	Clause	DESCRIPTION	REQUIREMENT		RESULTS	
			for floor-mounted bottom-outlet water closets	for rear-outlet and rear-spigot-outlet water closets	Sample1	Sample2
6	4.9	Trap Diameter	38 mm min	38 mm min	44	-
7	4.12	Rim Heights				
		A - Adult water closets	340 mm min	340 mm min	395.00	-
		B - Handicapped/elderly water closets	340 - 485 mm	340 - 485 mm	-	-
		C - Children's water closets	240 - 270 mm	240 - 270 mm	-	-
8	4	Structural Integrity test for Wall-Mounted Bowl (Load test)	-	2.2kN, @ 10 Min	Pass	-
9	5	Joint seal test (Leak test)	34.5 ± 3.4 Kpa	34.5 ± 3.4 Kpa	Pass	-

Remark 1. Ball size \geq 38mm.....44..... mm.

2. *** not comply with SASO 1473/2016

Picture of Product : 20841ME-S-WK



Reported by Sompop Nuansri
(Sompop Nuansri)
Technician of VC Laboratory

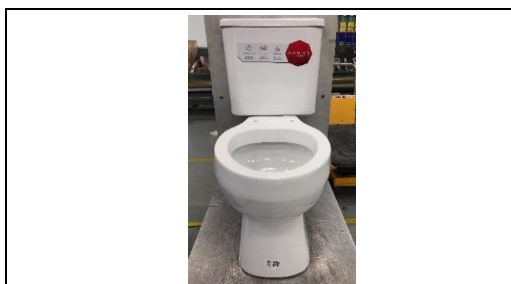
Checked/Approved by (Signature)
(Seangjan Kanjantuk)
Technician management VC Laboratory

Reported date : __11 Oct 23__

This report lists only reports on samples that have been tested, certified tests, or delivered products, language or partial test reports, or is used for any advertising purposes without the permission of the laboratory of Kohler (Thailand) Public Company Limited.

No.	Clause	DESCRIPTION	REQUIREMENT	RESULTS
				Sample1
1	5.2	Application of Glazing	Not visible surface un glaze after	OK
2	5.5	Thickness	not less than 6 mm	11.00
3	5.7	Water absorption		
		1. Vacuum and Boiling Method	Three determinations and the greatest	0.11
		2. Boiling Method	of the Three individual values	0.14
4	5.8	Crazing		
		PC1 Glaze Surface		No Crazing
		PC2 Glaze Surface or Unglaze Surface	'No Crazing / Metheylene Blue Solution	No Crazing
		PC3 Glaze Surface or Unglaze Surface		No Crazing
5	5.9	Chemical Resistance		
		1. Acetic acid, solution 10%	Compared with the control test piece / not difference is pass	not difference
		2. Citric acid, solution 10%		not difference
		3. Detergent, solution 0.15%		not difference
		4. Hydrochloric acid of specific gravity 1.18, 1:1 by volume		not difference
		5. Sodium Hydroxide, solution 5%		not difference
		6. Sodium stearate, solution 0.15%		not difference
		7. Sulphuric acid, solution 3%		not difference
6	5.10	Resistance to Staining and Burning		
		a. 0.5% aqueous solution of Methylene blue	No stain remained is Pass	No stain
		b. 10%-14% aqueous solution of Sodium hypochlorite an aqueous dilute solution of chlorine of 10% concentration is made from it		No stain
		c. 3% aqueous solution of Hydrogen peroxide		No stain
		d. Amyl tetrachloride		No stain
		e. Carbon tetrachloride		No stain
		f. 13 g of Iodine in 1 litre of ethanol		No stain
		g. A Lighted Cigarette		No stain
7	5.11	Abrasion Resistance		
		<u>Mineral</u>	The number of the mineral which caused scratches in the Glaze surface	6
		1. Talc 2. Selanite 3. Calcite 4. Plousspar 5. Apatite 6. Feldspar 7. Quartz 8. Topaze 9. Corundum		

Picture of Product : 20841ME-S-WK



Reported by

Dechhemmarut Boonchalee

(Dechhemmarut Boonchalee)

Technician of TN Laboratory

Checked/Approved by

Jeerapa Butkanit

(Jeerapa Butkanit)

Technical Management TN Laboratory

Reported date : __27 Oct 23__

This report lists only reports on samples that have been tested, certified tests, or delivered products, language or partial test reports, or is used for any advertising purposes without the permission of the laboratory of Kohler (Thailand) Public Company Limited.