

**SETSCO SERVICES PTE LTD**

18 Teban Gardens Crescent
 Singapore 608925
 Tel : (65) 6566 7777
 Fax: (65) 6566 7718
 Website: www.setsco.com
 Business Reg. No. 196900269D

Your Ref: -

Our Ref: CT-11640/MS
TEST REPORT

Date: 27/08/2009

(This Report is issued subject to the terms & conditions set out below)

Page 1 of 3

- Subject** : Slip Resistance Test on Marble, submitted by Finalit Stonecare Pte Ltd on 26/08/2009.
- Tested For** : **FINALIT STONECARE PTE LTD**
 195 Pearl's Hill Terrace
 #02-14
 Singapore 168976
Attn: Mr Nicolas Mancuso
- Method of Test** : SS 485: 2001(Annex A)
- Specification** : SS 485: 2001
- Project Reference** : Marina Bay Sands Integrated Resort
- Description of Sample** : 05 pieces of 400 x 400 x 15mm, Afyon Beige Marble, Honey Combed Backing with Aluminium, were received. (Refer to photograph attached)
 (All the samples were treated with Finalit No. 25, Anti-Slip treatment on top surface of the stones by client before submission)

Results :**Slip Resistance Test**

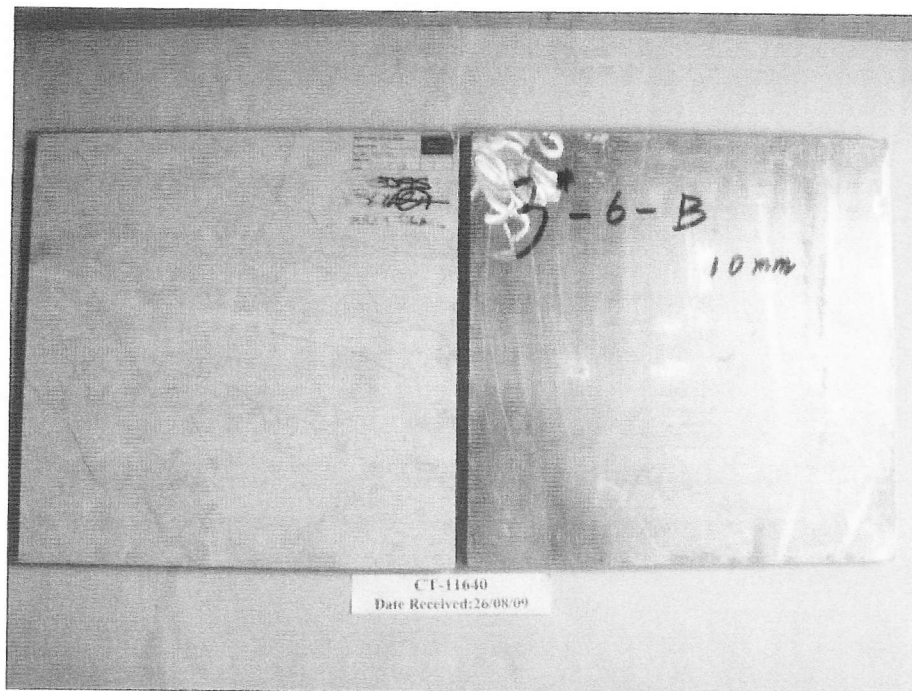
Sample Reference	400 x 400 x 15mm, Afyon Beige Marble, Honey Combed Backing with Aluminium				
Date of Test	27/08/2009				
Test Temperature	25°C				
Test Surface	Smooth				
Test Apparatus	Pendulum Friction Tester				
Test Condition	Wet Pendulum				
Test No.	1	2	3	4	5
British Pendulum Number, BPN	53	55	56	64	52
Average BPN	56				

Note:

- 1) The slip result met classification V with very low contribution to slipperiness under wet condition.
- 2) The standard slider material is Four S rubber.
- 3) Refer to Appendix A for classification

Terms & conditions:

- (1) The Report is prepared for the sole use of the Client and is prepared based upon the Item submitted, the services required by the Client and the conditions under which the Services are performed by SETSCO. The Report is not intended to be representative of similar or equivalent Services on similar or equivalent Items. The Report does not constitute an endorsement by SETSCO of the item.
- (2) SETSCO agrees to use reasonable diligence in the performance of the Services but no warranties are given and none may be implied directly or indirectly relating to the Services, the Report or the facilities of SETSCO.
- (3) The Report may not be used in any publicity material without the written consent of SETSCO.
- (4) The Report may not be reproduced in part or in full unless approval in writing has been given by SETSCO.
- (5) SETSCO shall under no circumstances be liable to the Client or its agents, servants or representatives, in contract, tort (including negligence or breach of statutory duty) or otherwise for any direct or indirect loss or damage suffered by the Client, its agents, servants or representative howsoever arising or whether connected with the Services provided by SETSCO herein.



Photograph showing 400 x 400 x 15mm, Afyon Beige Marble, Honey Combed Backing with Aluminium as received on 26/08/2009



Au Chong Haw
Testing Officer



Safir Ahamed
Engineer (CMTD)
Construction Technology Division

APPENDIX A
Classification Extracted From SS 485: 2001

Classification of Pedestrian Surface Materials According To The Wet Pendulum Test

Classification	Pendulum mean BPN		Contribution of the floor surface to the risk of slipping when wet
	Four S Rubber	TRRL Rubber	
V	> 54	> 44	Very Low
W	45 to 54	40 to 44	Low
X	35 to 44	-	Moderate
Y	25 to 34	-	High
Z	< 25	-	Very High

Classification of Pedestrian Flooring Selection Guide – Minimum Pendulum or Ramp Recommendation For Specific Locations

Location	Pendulum	Ramp
External colonnade, walkways and pedestrian crossings	W	R10
External ramps	V	R11
Entry foyers hotel, office, public buildings – wet	X	R10
Entry foyers hotel, office, public buildings – dry	Z	R9
Shopping centre excluding food court	Z	R9
Shopping centre – food court	X	R10
Internal ramps, slopes (greater than 2 degrees) – dry	X	R10
Lift lobbies above external entry level	Z	R9
Other separate shops inside shopping centres	Z	R9
Other shops with external entrances – entry area	X	R10
Fast food outlets, buffet food servery areas	X	R10
Hospitals and aged care facilities – dry areas	Z	R9
Hospitals and aged care facilities – ensembles	X	A or R10
Supermarket aisles except fresh food areas	Z	R9
Shop and supermarket fresh fruits and vegetable areas	X	R10
Communal changing rooms	X	A
Swimming pool surrounds and communal shower rooms	W	B
Swimming pool ramps and stairs leading into water	V	C
Toilet facilities in offices, hotels, shopping centres	X	R10
Undercover concourse areas of sports stadium	X	R10
Accessible internal stair nosings (dry) – handrails present	X	R10
Accessible internal stair nosings (wet) – handrails present	W	B or R11
External stair nosing	W	R11

Note 1 - Appropriate measures need to be taken to exclude casual water from dry areas.

Note 2 - All floors with a wet pendulum classification of Z should have a dry floor friction of F unless usage dictates that the floor should have a low dry coefficient of friction, e.g dance floor.

A *Jan 5*