

**Client:**  
**PEKER YÜZEY TASARIMLARI SAN VE TİC. A.Ş.**  
**(BELENCO QUARTZ SURFACES)**  
**Att. To: Ms.Esra ARICI**  
M.O.S.B. Ahmet Nazif Zorlu Bulvarı No:22  
45030 Manisa TURKEY

**Report No.** 27113335 001

**Buyer** /

**Test item** : Two different quarz surfaces

**Agent/Manufacturer** :

**Model No** : **A: Angel white B: Sahara Beige**

**Colour Names** :

**Condition at delivery:** Test item complete and undamaged

**Date of delivery** : 27.11.2013

**Test period** : 28.11.2013 to 08.01.2014

**Test scope** : Microbiological Test  
Cleaning Effect of the Surface

**Test specification** : Microbiological examination for the cleanibility of surfaces

**Test result** : PASS

**Remark** : All the test results in this test report were subcontracted to TÜV Rheinland LGA Products Nurnberg for this test report

**For and on behalf of**  
**TÜV Rheinland Uluslararası Standartlar Sertifikasyon ve Denetim A.Ş**



Nalan Kilic / Project Engineer



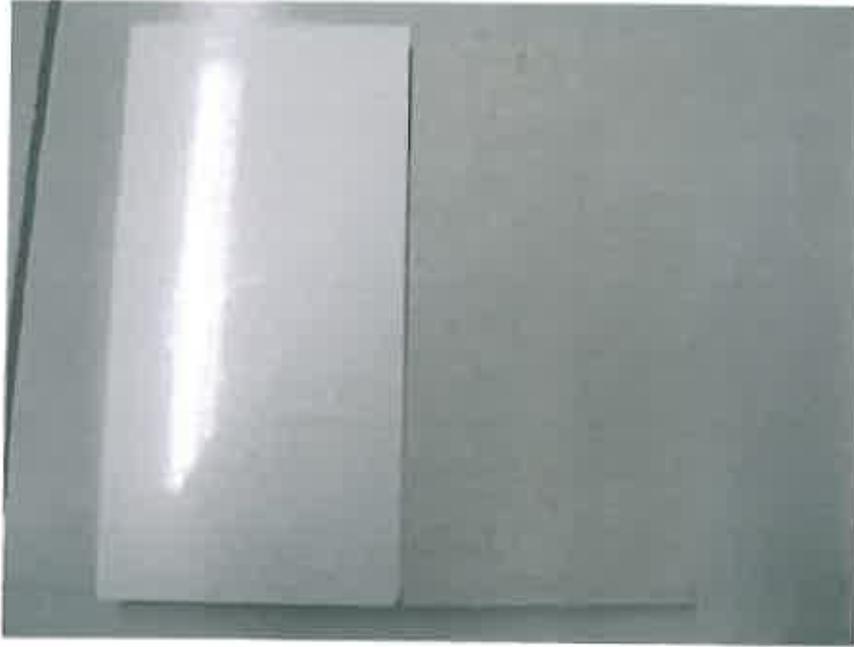
Berrin Hatacıkoglu / Softlines Business Field Manager

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## 1. Photo



## 2. List of Materials

Mat.No.	Article	Component	Material	Colour
M001	A	Quarz surface-Angel white	-	White
M002	B	Quarz surface-Sahara beige	-	Beige

### 3. Results

M001					
After delivery [cfu/100 cm <sup>2</sup> ]	After cleaning [cfu/100 cm <sup>2</sup> ]	Test germs	Directly after inoculation [cfu/100 cm <sup>2</sup> ]	After 1 h [cfu/100 cm <sup>2</sup> ]	After 2 <sup>nd</sup> cleaning [cfu/100 cm <sup>2</sup> ]
44	<4	Aspergillus niger	>400	>400	<4
		Alternaria alternate	56	<4	<4
		Penicillium chrysogenum	24	4	<4
		Escherichia coli	>400	>400	<4
		Pseudomonas putida	>400	>400	<4
		Bacillus subtilis	>400	>400	<4

M002					
After delivery [cfu/100 cm <sup>2</sup> ]	After cleaning [cfu/100 cm <sup>2</sup> ]	Test germs	Directly after inoculation [cfu/100 cm <sup>2</sup> ]	After 1 h [cfu/100 cm <sup>2</sup> ]	After 2 <sup>nd</sup> cleaning [cfu/100 cm <sup>2</sup> ]
64	<4	Aspergillus niger	>400	>400	4
		Alternaria alternate	44	<4	<4
		Penicillium chrysogenum	88	4	<4
		Escherichia coli	>400	>400	<4
		Pseudomonas putida	>400	>400	<4
		Bacillus subtilis	>400	>400	8

Cfu/100 cm<sup>2</sup>: colony forming units per surface

<4 : below the detection limit

>400 : not countable

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## 4. Summary

### 4.1. Examination

#### Test microorganisms

Test Germs	Identification number	
	DSMZ	ATCC
Escherichia coli	11250	-
Pseudomonas putida	291	12633
Bacillus subtilis	10	6051
Aspergillus niger	1957	6275
Alternaria alternate	62006	-
Penicillium chrysogenum	844	9178

#### Preparation of the test bacteria suspension

For the test procedure a bacteria suspension from each bacterium was assembled with casa bouillon.

Microbial densities of the applied microorganisms:

Escherichia coli            7,6 x 10<sup>8</sup> cfu/ml  
Pseudomonas putida      1,0 x 10<sup>9</sup> cfu/ml  
Bacillus subtilis           1,7 x 10<sup>9</sup> cfu/ml

*Cfu/ml: colony forming units per milliliter*

#### Preparation of the test mould suspension

The production of the mineral salt solution and fungi spore suspension takes place similar to fungus test after MIL-STD-810F, method 508.4

Microbial densities of the applied microorganisms:

Aspergillus niger            3,0 x 10<sup>5</sup> cfu/ml  
Alternaria alternata        3,0 x 10<sup>2</sup> cfu/ml  
Penicillium chrysogenum   3,0 x 10<sup>2</sup> cfu/ml

*Cfu/ml: colony forming units per milliliter*

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### **Experimental procedure**

The first contact slide is directly taken after delivery. Afterwards a cleaning with a neutral detergent of the tested surface took place. A second contact slide sample is taken. Afterwards the sample is spread with the current germ-suspension with a sterile swab. A third contact slide is taken after spreading. The contact time takes 60 minutes and after that time a fourth contact slide will be taken. After cleaning with a neutral detergent the fifth and final contact slide is taken from the surface. The incubation time was three days at a temperature of 30°C for the bacteria and seven days at a temperature of 25°C for the mould.

### **4.2. Summary and Evaluation**

In the light of the results it becomes evident that microbial contamination of the quartz-surface "Angel white" can be reduced by means of a neutral household detergent (manually applied) in such a strong way, that contents of bacteria and moulds were under the detection limit. With quartz surface "Sahara" only very low surface contents could be detected after the same cleaning process.

Both tested surfaces do exhibit a good cleanability against specified microorganism.

--- End of test report---