



NATIONAL RESEARCH CENTRE
TAHRIR St. DOKKI, CAIRO, EGYPT
Central Unit For Analysis And
Scientific Services (CUASS)
Material Test Lab.

المركز القومي للبحوث

الدقي . القاهرة . جمهورية مصر العربية
وحدة التحاليل و الخدمات العلمية المركزية
معمل اختبار المواد



To General Manager of / DIAR for Special works

Dear Sir.,

With correspondence to your request dated 11/ 12 /2024 concerning the testing Samples of (Voga Cement – Putty , Voga Grout G) , Produced by VOGEL SYSTEMS, We would like to inform you that the all following needed tests were carried out which namely :-

- 1) Compressive Strength Test according to ASTM C109.
- 2) Flexural Strength test according to ASTM C580.
- 3) Water Permeability test after 28 days according to EN 12390-8.
- 4) Abrasion Resistance test according to ASTM D4060.
- 5) Density test.
- 6) Chemical Resistance test.
- 7) Pull-off Strength to concrete after 28 days according to ASTM D7234.

We would like to inform you that the all needed tests were carried out taking into consideration the following conditions :

- 1-In all mechanical properties GALDABINI –QUASAR 600- Testing Machine was used This type of GALDABINI has a self calibration , zero adjusting and automatic balance , which are done daily before testing or during testing this testing instrument is accompanied by a highly reliable system for evaluating the mechanical properties.
- 2-Weighing Balance with tolerance+0.0001g was used in determining the weights
- 3-Measuring drum of sensitivity+0.01mm was used for dimensions evaluation
- 4- Braive Instruments for Shore A Test.
- 5- The all used Machinery and the apparatus were calibrated periodically .

The following tables give the obtained results representing the sample Delivered from your company.





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Test Report

Report No.

MO1 6227 12 2024

Client

DIAR for Special works

Authority & date

Request Orders 11/12/2024

Items Tested

Samples of (Voga Cement – Putty , Voga Grout G) ,
Produced by VOGEL SYSTEMS

Results

The detailed test results are given on the following pages of this report (7 pages).

Report Typist

*** Mis. Sara Abdel Rehim – Naglaa Mohamed**

Test carried

*** Mis . Fatma El – Zahraa Fikry**

and supervised by

*** H.Eng. Ahmed Sayed**

*** Chem. Amr El Shafey**

*** Dr. Abou El Ftouh Abd El Hakem**

Authorized by

Prof. Dr. Mostafa Zaki Mostafa

*** The Supervisor of ceramics, Polymer and Solid Matter Department.**

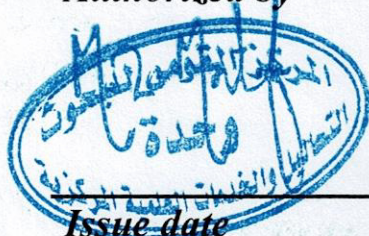
*** Management Representative and Quality Assurance Manager.**

Issue date

21/1/2025

Condition of Test & Issue

The test specimen was conditioned at 23 °C with a humidity of 60 % and the needed calibrations as well as balancing of the all used machines were always done .





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Test Results

On a Sample of (Voga Grout G) , Produced by VOGEL SYSTEMS

Delivered from DIAR

(1) Compressive Strength Test according to ASTM C109

No.	compressive St. after 1 day (N/mm2)	compressive St. after 3 days (N/mm2)	compressive St. after 7 days (N/mm2)	compressive St. after 28 days (N/mm2)
1	17.14	29.05	40.44	56.11
2	19.31	29.01	39.56	54.28
3	18.75	28.37	39.27	55.16
4	18.62	28.09	41.09	55.01
5	18.22	28.23	40.81	56.28
The mean	18.408	28.550	40.234	55.368

(2) Flexural Strength Test according to ASTM C580

No.	Flexural St. after 1 day (N/mm2)	Flexural St. after 3 days (N/mm2)	Flexural St. after 7 days (N/mm2)	Flexural St. after 28 days (N/mm2)
1	4.11	8.11	12.99	17.17
2	4.62	7.65	13.15	18.28
3	4.45	7.86	13.61	19.01
4	5.07	7.41	13.88	18.34
5	5.18	8.05	13.49	18.61
The mean	4.686	7.816	13.424	18.282

(3) Water Permeability test according to EN 12390-8 after 28 days

Direction	Time (hrs)	Pressure (bar)	Control (mm)	Penetration (mm)
+ ve	72	1	49.7	36.8





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Test Results

*On a Sample of (Voga Grout G) , Produced by VOGEL SYSTEMS
Delivered from DIAR*

(4) Abrasion resistance test according to ASTM D4060

<i>No. of cycle</i>	<i>Used wheel</i>	<i>Load (g)</i>	<i>Weight loss concrete (mg)</i>	<i>Weight loss Sample (mg)</i>
1000	CS 17	1000	365.1	277.9

(5) Density test

- Density = 2.117 g/Cm3.

(6) Chemical Resistance test

<i>Chemical</i>	<i>Temp. (°C)</i>	<i>Observed</i>
Distilled water	23 °C For 72 hrs	No effect
Sea water		No effect
Hydrochloric acid 10%		No effect
Engine oil		No effect





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Delivered from DIAR

(4) Abrasion resistance test according to ASTM D4060

No. of cycle	Used wheel	Load (g)	Weight loss concrete (mg)	Weight loss Sample (mg)
1000	CS 17	1000	363.1	495.2

(5) Density test

- Density = 1.536 g/Cm3.

(6) Pull-off Strength to concrete after 28 days

according to ASTM D7234

No.	Pull - off (N/mm)	The mean value (N/mm)	Failure mode
1	0.53	0.576	C
2	0.57		
3	0.63		
4	0.61		
5	0.54		





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On a Sample of (Voga Cement – Putty) , Produced by VOGEL SYSTEMS

Delivered from DIAR

(1) Compressive Strength Test according to ASTM C109

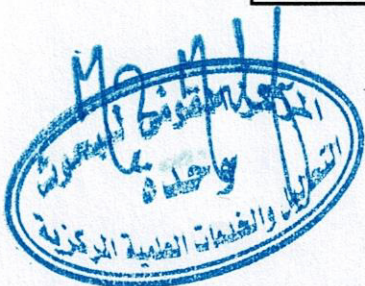
No.	compressive St. after 1 day (N/mm2)	compressive St. after 3 days (N/mm2)	compressive St. after 7 days (N/mm2)	compressive St. after 28 days (N/mm2)
1	1.32	8.01	11.78	16.21
2	1.47	7.73	11.61	16.53
3	2.02	7.63	11.39	16.89
4	2.11	7.11	10.82	16.94
5	1.94	7.29	10.51	17.60
The mean	1.772	7.554	11.222	16.834

(2) Flexural Strength Test according to ASTM C580

No.	Flexural St. after 1 day (N/mm2)	Flexural St. after 3 days (N/mm2)	Flexural St. after 7 days (N/mm2)	Flexural St. after 28 days (N/mm2)
1	0.78	1.17	3.07	4.73
2	0.91	1.25	3.09	4.52
3	0.88	1.33	2.94	4.66
4	0.76	1.39	2.56	4.19
5	0.83	1.21	2.99	4.27
The mean	0.832	1.270	2.930	4.474

(3) Water Permeability test according to EN 12390-8 after 28 days

Direction	Time (hrs)	Pressure (bar)	Control (mm)	Penetration (mm)
+ ve	72	1	49.7	48.8





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This report was given to you representing only the results for testing Samples of (Voga Cement – Putty , Voga Grout G) , Produced by VOGEL SYSTEMS , these results and conclusions were given to you without any responsibility on THE CERAMICS, POLYMERS AND SOLID MATTER DEP. Of THE MATERIAL TEST LAB in THE NATIONAL RESEARCH CENTRE for pick up the samples to be tested.

These results represent only the delivered sample and not any stored or produced quantities for any other purpose or project, Unauthorized reproduction of this report or any copy of it by any way or for any target is prohibited.

**Head of Director of The Board of Central Department
for Scientifical Analysis and Tests**

&

**SUPERVISOR
OF Material Test Lab**

PROF.DR. MOSTAFA ZAKI MOSTAF

