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

المركز القومى للبحوث
الدقى . القاهرة . جمهورية مصر العربية
وحدة التحاليل و الخدمات العلمية المركزية
معمل اختبار المواد

Test Report

Report No.	**MOI 3858 02 2024**
Client	**CHEMA FOAM CO.**
Authority & date	*Request Orders 21/2/2024*
Items Tested	**Chema tile grout , according to EN 13888**
Results	*The detailed test results are given on the following pages of this report (7 pages) .*
Report Typist	*** Mis. Naglaa Mohamed-Sara Abdel Reheam Noha Samir**
Test carried by	*** Mis . Fatma El Zahraa Fikry** *** H.Eng. Ahmed Said** *** 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	*16/4/2024*
Condition of Test & Issue	*The test speciemen 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 .*

شارع التحرير - الدقى - القاهرة
مباشر ٣٣٣٨٧٨٠٣ فاكس
داخلى ١٨١٠ ١٤٢٤
٣٣٣٧١٣٦٢ - ٣٣٣٧١٦١٥
٣٣٣٥٥١٩٢ - ٣٧٦٠٧٥٤١
E-mail : nrc1302a@yahoo.com

Scanned with ACE Scanner

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

المركز القومى للبحوث
الدقى . القاهرة . جمهورية مصر العربية
وحدة التحاليل و الخدمات العلمية المركزية
معمل اختبار المواد

To / CHEMA FOAM CO.

Dear Sir.,

With correspondence to your request dated 21/2/2024 concerning the testing sample of Chema tile grout , according to EN 13888 , We would like to inform you that the all following needed tests were carried out which namely:

1- Flexural strength test after 28 days dry storage according to EN 13888-2
2- Flexural strength test after freeze thaw cycles (25 cycles) according to EN 13888-2
3- Compressive strength test after 28 days dry storage according to EN 13888-2
4- Compressive strength test after freeze thaw cycles (25 cycles) according to EN 13888-2
5- Abrasion resistance test according to EN 13888-2
6- Shrinkage test according to EN 13888-2
7- Water absorption test after 30min according to EN 13888-2
8- Water absorption test after 4hrs according to EN 13888-2

We would like to inform you that the needed test was carried out taking into consideration the following conditions :

1- In all mechanical properties GALDABINI – QUASAR 600 – Made In Italy Universal Testing Machine was used This type 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-Measuring drum of sensitivity ± 0.01mm was used for dimensions evaluation.
3- Weighing Balance with tolerance + 0.0001 g was used in determining the weights .
4- All used Machineries and apparatuses were calibrated periodically

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

المركز القومى للبحوث
وحدة التحاليل والخدمات العلمية المركزية

شارع التحرير - الدقى - القاهرة
مباشر ٣٣٣٨٧٨٠٣
داخلى ١٨١٠
فاكس ١٤٢٤
٣٣٣٧١٣٦٢ - ٣٣٣٧١٦١٥
٣٣٣٥٥١٩٢ - ٣٧٦٠٧٥٤١
E-mail : nrc1302a@yahoo.com

Scanned with ACE Scanner

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

المركز القومى للبحوث
الدقى . القاهرة . جمهورية مصر العربية
وحدة التحاليل و الخدمات العلمية المركزية
معمل اختبار المواد

Test results on a sample of Chema tile grout

Produced by CHEMA FOAM CO.

1- Flexural strength test after 28 days dry storage

according to EN 13888-2

No.	Flexural strength (N/mm2)	The mean value (N/mm2)	EN 13888-1 limit (N/mm2)
1	5.13	5.17	≥ 2.5
2	5.21		
3	5.01		
4	5.32		
5	5.19		

2- Flexural strength test after freeze thaw cycles (25 cycles)

according to EN 13888-2

No.	Flexural strength (N/mm2)	The mean value (N/mm2)	EN 13888-1 limit (N/mm2)
1	4.13	4.02	≥ 2.5
2	4.27		
3	3.82		
4	3.89		
5	3.99		

شارع التحرير - الدقى - القاهرة
٣٣٣٨٧٨٠٣ مباشر
فاكس
١٨١٠ داخلى
١٤٢٤
٣٣٣٧١٦١٥ - ٣٣٣٧١٣٦٢
٣٣٣٥٥١٩٢ - ٣٧٦٠٧٥٤١
E-mail : nrc1302a@yahoo.com

Scanned with ACE Scanner

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

المركز القومى للبحوث
الدقى . القاهرة . جمهورية مصر العربية
وحدة التحاليل و الخدمات العلمية المركزية
معمل اختبار المواد

Test results on a sample of Chema tile grout

Produced by CHEMA FOAM CO.

3- Compressive strength test after 28 days dry storage

according to EN 13888-2

No.	Compressive strength (N/mm2)	The mean value (N/mm2)	EN 13888-1 limit (N/mm2)
1	23.71	24.21	> 15
2	24.98		
3	24.61		
4	23.93		
5	23.82		

4- Compressive strength test after freeze thaw cycles (25 cycles)

according to EN 13888-2

No.	Compressive strength (N/mm2)	The mean value (N/mm2)	EN 13888 -1limit (N/mm2)
1	22.11	21.15	> 15
2	21.71		
3	20.91		
4	20.53		
5	20.49		

شارع التحرير - الدقى - القاهرة
مباشر ٣٣٣٨٧٨٠٣ فاكس
داخلى ١٨١٠ ١٤٢٤
٣٣٣٧١٣٦٢ - ٣٣٣٧١٦١٥
٣٣٣٥٥١٩٢ - ٣٧٦٠٧٥٤١
E-mail : nrc1302a@yahoo.com

Scanned with ACE Scanner

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

المركز القومى للبحوث
الدقى . القاهرة . جمهورية مصر العربية
وحدة التحاليل و الخدمات العلمية المركزية
معمل اختبار المواد

Test results on a sample of Chema tile grout

Produced by CHEMA FOAM CO.

5- Abrasion resistance test according to EN 13888-2

Revolutions no.	*Volume of removed material (mm3)*	*EN 13888 -1limit (mm3)*
50	*1837*	*< 2000*

6- Shrinkage test according to EN 13888-2

No.	*Shrinkage (mm/m)*	*The mean value (mm/m)*	*EN 13888-1 limit (mm/m)*
1	*1.87*	*1.91*	*< 3*
2	*1.89*		
3	*1.97*		

وحدة التحاليل والخدمات العلمية المركزية

شارع التحرير - الدقى - القاهرة
مباشر ٣٣٣٨٧٨٠٣ فاكس
داخلى ١٨١٠ ١٤٢٤
٣٣٣٧١٣٦٢ - ٣٣٣٧١٦١٥
٣٣٣٥٥١٩٢ - ٣٧٦٠٧٥٤١
E-mail : nrc1302a@yahoo.com

Scanned with ACE Scanner

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

المركز القومى للبحوث
الدقى . القاهرة . جمهورية مصر العربية
وحدة التحاليل و الخدمات العلمية المركزية
معمل اختبار المواد

Test results on a sample of Chema tile grout

Produced by CHEMA FOAM CO.

7- Water absorption test after 30min according to EN 13888-2

No.	Water absorption (%)	The mean value (%)	EN 13888 -1limit (%)
1	3.61	3.68	≤ 5
2	3.72		
3	3.71		
4	3.69		
5	3.65		

8- Water absorption test after 4hrs according to EN 13888-2

No.	Water absorption (%)	The mean value (%)	EN 13888-1 limit (%)
1	6.11	6.50	≤ 10
2	6.07		
3	6.57		
4	6.94		
5	6.82		

شارع التحرير - الدقى - القاهرة
مباشر ٣٣٣٨٧٨٠٣ فاكس
داخلى ١٨١٠ ١٤٢٤
٣٣٣٧١٣٦٢ - ٣٣٣٧١٦١٥
٣٣٣٥٥١٩٢ - ٣٧٦٠٧٥٤١
E-mail : nrc1302a@yahoo.com

Scanned with ACE Scanner

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

المركز القومى للبحوث
الدقى . القاهرة . جمهورية مصر العربية
وحدة التحاليل و الخدمات العلمية المركزية
معمل اختبار المواد

This report was given to you representing only the results for the testing sample of Chema tile grout , according to EN 13888 , Delivered from CHEMA FOAM CO. , 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 .*

Head of Director of The Board of Central Depertment
for Scientifical Analysis and Tests
&
SUPERVISOR
OF CERAMICS, POLYMER AND
SOLID MATTER DEPARTMENT

PROF.DR. MOSTAFA ZAKI MOSTAFA

٣٣٣٧١٣٦٢ - ٣٣٣٧١٦١٥
٣٣٣٥٥١٩٢ - ٣٧٦٠٧٥٤١
داخلى ١٨١٠ ١٤٢٤
مباشر
فاكس ٣٣٣٨٧٨٠٣
شارع التحرير - الدقى - القاهرة
E-mail : nrc1302a@yahoo.com

Scanned with ACE Scanner