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 والخدمات العلمية المركزية
معمل اختبار المواد

Test Report

Report No.	***MO1 5748 06 2021***
Client	***CHEMA FOAM CO.***
Authority & date	*Request Orders 17/6/2021*
Items Tested	***CHEMA Flex 200***
Results	*The detailed test results are given on the following pages of this report (4 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	*13/7/2021*
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 .*

المركز القومى للبحوث
وحدة
التحاليل والخدمات العلمية المركزية

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

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 والخدمات العلمية المركزية
معمل اختبار المواد

To / CHEMA FOAM CO.

Dear Sir.,

With correspondence to your request dated 17/6/2021 concerning the testing sample of CHEMA Flex 200 , We would like to inform you that the all following needed tests were carried out which namely:

1- Adhesion strength test according to ASTM D4541

2- Elongation test according to ASTM D412

3- Crack bridging test according to ASTM C1305

4- Water permeability test according to CRD C48

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 $\pm$ 0.01mm was used for dimensions evaluation.

3- On heating a Memmert West Germany oven was used .

4- Weighing Balance with tolerance + 0.0001 g was used in determining the weights .

6- All used Machineries and apparatuses were calibrated periodically

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

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

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 والخدمات العلمية المركزية
معمل اختبار المواد

Test results on a sample of CHEMA Flex 200

Delivered from CHEMA FOAM CO.

1- Adhesion strength test according to ASTM D4541

No.	*Adhesion strength (N/mm2)*	*Mean (N/mm2)*
1	*1.78*	*1.83*
2	*1.87*	
3	*1.83*	
4	*1.81*	
5	*1.88*	

2- Elongation test according to ASTM D412

No.	*Elongation (%)*	*Mean (%)*
1	*63.1*	*66.0*
2	*67.1*	
3	*67.8*	

3- Crack bridging test according to ASTM C1305

No.	*No. of cycles*	*Maximum (mm) movement*	*Observation*
1	*10*	*1.5*	*No failure*
2		*1.5*	
3		*1.5*	

** The sample resist the crack (1.5mm) without any observable changed .*

4- Water permeability test according to CRD C48

** The sample with a thickness 300micron un permeable to water head up to 3 bars.*

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

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 والخدمات العلمية المركزية
معمل اختبار المواد

This report was given to you representing only the results for the testing sample of CHEMA Flex 200, 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 وفاكس ٣٣٣٨٧٨٠٣
شارع التحرير - الدقى - القاهرة
E-mail: nrc1302a@yahoo.com

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 والخدمات العلمية المركزية
معمل اختبار المواد

Test Report

Report No.	***MO1 6178 08 2021***
Client	***CHEMA FOAM CO.***
Authority & date	*Request Orders 22/8/2021*
Items Tested	***(CHEMA Flex 200 , CHEMA Flex 300)***
Results	*The detailed test results are given on the following pages of this report (4 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	*26/8/2021*
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 ٣٣٣٨٧٨٠٣ مباشر وفاكس ١٨١٠ ١٤٢٤ داخلى ٣٣٣٧١٣٦٢ - ٣٣٣٧١٦١٥ ٣٣٣٥٥١٩٢ - ٣٧٦٠٧٥٤١
E-mail: nrc1302a@yahoo.com

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 والخدمات العلمية المركزية
معمل اختبار المواد

Elongation test according to ASTM D2370

on a sample of CHEMA Flex 200

Delivered from CHEMA FOAM CO.

No.	*Elongation (%)*	*Mean (%)*
1	*257.11*	*256.08*
2	*249.16*	
3	*262.19*	
4	*250.83*	
5	*261.13*	

Elongation test according to ASTM D2370

on a sample of CHEMA Flex 300

Delivered from CHEMA FOAM CO.

No.	*Elongation (%)*	*Mean (%)*
1	*317.11*	*321.76*
2	*313.01*	
3	*327.11*	
4	*330.41*	
5	*321.19*	

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

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 والخدمات العلمية المركزية
معمل اختبار المواد

To / CHEMA FOAM CO.

Dear Sir.,

With correspondence to your request dated 22/8/2021 concerning the testing samples of (CHEMA Flex 200 , CHEMA Flex 300) , We would like to inform you that the all following needed tests were carried out which namely:

1- Elongation test according to ASTM D2370

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- All used Machineries and apparatuses were calibrated periodically

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

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

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 والخدمات العلمية المركزية
معمل اختبار المواد

This report was given to you representing only the results for the testing samples of (CHEMA Flex 200 , CHEMA Flex 300) , 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 وفاكس ٣٣٣٨٧٨٠٣
شارع التحرير - الدقى - القاهرة
E-mail: nrc1302a@yahoo.com