



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

المركز القومي للبحوث

القاهرة . جمهورية مصر العربية
وحدة التحاليل والخدمات العلمية المركزية
معمل اختبار المواد



Test Report

Report No.	MOI 3034 06 2021
Client	CHEMA FOAM Co.
Authority & date	Request Orders 2/6/2021
Items Tested	3 Samples of XPS blue foam thickness 50mm
Results	The detailed test results are given on the following pages of this report (9 pages) .
Report Typist	* Mis. Sara Abdel Reheam – Naglaa
Test carried by	Mohamed - Noha Samir
	* 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	10/6/2021
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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To / CHEMA FOAM Co.

Dear Sir.,

With correspondence to your request dated 2/6/2021 concerning the testing samples of XPS blue foam thickness 50mm , We would like to inform you that the all following needed tests were carried out which namely:-

- 1- Density Test according to ASTM D1622**
- 2- Compressive strength at 10% deflection according to ASTM D1621**
- 3- Flexural Strength Test according to ASTM C203**
- 4- Water absorption test according to ASTM C272**
- 5- Water vapor transmission test according to ASTM E96.**
- 6- Dimension Stability Test according to ASTM D696.**

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 – 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- On heating a Memmert West Germany oven was used .*
- 3- Weighing Balance with tolerance + 0.0001 g was used in determining the weights .*
- 4- Measuring drum of sensitivity ± 0.01 mm was used for dimensions evaluation*
- 5-The all used Machinery and the apparatus were calibrated periodically*

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

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Density Test according to ASTM D1622

On a sample of XPS blue foam thickness 50mm Density 36 Kg/m³

Delivered from CHEMA FOAM Co.

No.	Density (Kg/m ³)	The mean (Kg/m ³)	Technical data (Kg/m ³)
1	36.16	37.182	> 36
2	37.81		
3	36.26		
4	37.11		
5	38.57		

Compressive strength at 10% deflection according to ASTM D1621

No.	Compressive strength (Kpa)	The mean (Kpa)	Technical data (Kpa)
1	436	430	414
2	431		
3	425		
4	429		
5	433		

Flexural strength Test according to ASTM C203

No.	Flexural strength (Kpa)	The mean (Kpa)
1	614.31	617.82
2	624.59	
3	619.14	
4	613.26	
5	617.82	



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Water absorption test according to ASTM C272

On a sample of XPS blue foam thickness 50mm Density 36 Kg/m³

Delivered from CHEMA FOAM Co.

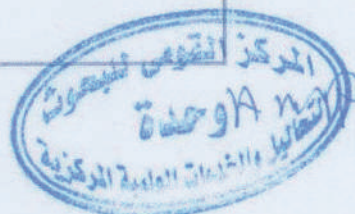
No.	Volume change (%)	The mean (%)	Technical data (%)
1	0.176	0.183	< 1
2	0.191		
3	0.185		
4	0.182		
5	0.183		

Water vapor Transmission test according to ASTM E96

- WVT at thickness 10mm = 0.53 g/h.m2.

Dimension stability Test according to ASTM D696

No.	Volume change (%)	The mean (%)
1	0.161	0.164
2	0.164	
	0.167	



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معهد بحوث فيزيكا المنشآت والعوامل البيئية المحيطة



Client Name: شركة كيما فوم

Testing Name: Thermal Conductivity

Delivery Date: 02/06/2021

Supplier Code: BPI/H/CO.45

Testing Date: 06/06/2021

Sample Description: Chema Advanced Density 36-40 Kg/m³

***Thermal Laboratory
Thermal Conductivity Test Report***

Sample Name	Thickness (cm)	Density (Kg/m ³)	Thermal Conductivity (W/m.°c)
Chema Advanced Density 36-40 Kg/m ³	5	36	0.033

Remarks

- The test was conducted according to the standard specification ASTM C-518.
- The environmental test conditions: [temp. 24 °C & R.H. 55%].
- This result is only valid for the sample delivered to the Thermal Laboratory.
- These results are only valid for one year.

Head of Technical group

Mahmoud Mohamed
Dr.Eng. M.M. Abd El Razik

Manger of Institute
Prof. Dr. M. A. Hassan



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Client Name: شركة كيما فوم

Testing Name: Thermal Conductivity

Delivery Date: 02/06/2021

Supplier Code: BPI/H/CO.44

Testing Date: 06/06/2021

Sample Description: Chema Advanced Density 36-40 Kg/m³

Thermal Laboratory
Calculate Thermal Resistance for Product

Sample Name	Thickness (cm)	Thermal Conductivity (W/m.°c)	Thermal Resistance (m ² .°c/w)
Chema Advanced Density 36-40 Kg/m ³	3	0.033	0.90
	4		1.21
	5		1.51
	7.5		2.27

Remarks

- This Calculate is only valid for the sample delivered to the Thermal Laboratory.
- These results are only valid for one year.

Head of Technical group

Mahmoud Mohamed

Dr.Eng. M.M. Abd El Razik





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*This report was given to you representing only the results for the delivered samples of XPS blue foam thickness 50mm, 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 .*

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

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

&

SUPERVISOR OF Material Test Lab

PROF.DR. MOSTAFA ZAKI MOSTAFA



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