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Applicant/Deney Sahibi : HZR MADENCİLİK VE NAKLİYAT SANAYİ TİCARET LİMİTED ŞİRKETİ
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Sample Accepted on / Numune Tarihi : 04.12.2020 : 11:40
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Total number of pages / Rapor Sayfa : 8 (Pg/Syf)**Sample ID :** COTTON PLASTER

	TEST	METHOD	RESULT
*	FLAMMABILITY TEST	En ISO 13501-1	A1, S1, D0
*	MOISTURE RESISTANCE TEST	ASTMD2247	No View Changes.
*	SOUND INSULATION TEST	TS EN ISO 10140-2	Rw = 32,6 dB
*	ANTIBACTERIALITY TEST	JIS Z 2801:2012	Antibacterial.



Seal

Customer Representative
Hasan KUTLULaboratory Manager
Hava Sarıaydın

Test results, methods and other information about the sample shown in the relevant pages of this Report are based on the information specified in accordance with "Test Request Form (PR03-F01) conveyed to us from the Applicant. Test results are valid for the sample as identified above. Sample may not represent the lot which it belongs. This Report does not replace a Product Certificate. Full report or any part of it may not be reproduced or used for any other purpose without the written permission of EUROLAB Laboratory. Sampling has not been done by us. Unsigned and unsealed Reports are invalid. Analysis as indicated with "*" are in the Scope of our Accreditation Certificate issued from ÖSAS according to TS EN ISO/IEC 17025, Analysis as indicated with "***" are performed at the external laboratories using accredited test methods according to TS EN ISO/IEC 17025 from ÖSAS. Possible extra notes may add with starting "N" to related pages. Tested and remaining samples will be kept in specified terms & conditions at test request and/or proposal form. Physically, chemically and microbiologically decomposed samples are discarded regardless of the storage period. Applicant can not claim any right in this regard. Results are shown in this Report do not include Measurement Uncertainty values. Measurement Uncertainty values are not taken in consideration during Pass/Fail assessment the of test results shown in this Report. Evaluation of the test results using Measurement Uncertainty values is the responsibility of the Applicant.

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Environment / Ortam

The requirements and standards apply to equipment intended for use in / Ürüne uygulanan standartlar ve şartlar aşağıdaki ortamlar için geçerlidir:

X	Residential (domestic) environment / Ev ve benzeri ortam
X	Commercial and light-industrial environment / Ticari ve hafif-endüstriyel ortam
X	Industrial environment / Endüstriyel ortam
	Medical environment / Tıbbi ortam

RESULTS / SONUÇLAR

1. FLAMMABILITY TEST

EN ISO 13501-1

Building products and structural elements, fire classification. Part 1: Classification by using data obtained from the behavior tests against fire.

This standard covers the behavior of all structures, including products used in conjunction with structural elements, against flame.

Provisions for Inspection and Test:

If Rule / Test Is Not Needed To Be Applied To Sample (Not Applicable To Sample) NU
If the Specimen Fits the Rules (Passed) P
If the Specimen Tested Does Not Comply with the Rules (Left) L
If there is a Rule / Experiment Not Applied for Any Reason (Unable) U

Sample Number	1	2	3	4	5	6
Ignition (Yes / No)	No	No	No	No	No	No
Whether the flame is spread (Yes / No)	No	No	No	No	No	No
Flame Spreading Time	-	-	-	-	-	-
Combustion on Filter Paper (Yes / No)	No	No	No	No	No	No
RESULT	P	P	P	P	P	P
Observations: Samples had ignition. The flame did not reach the measurement line within the experimental period. No dripping, melting and burning, filter paper did not burn.						

Related Product Standard and Citations: Fire Response Test (EN 13501-1 A1 Class)	
Conditioning Details: The test samples were conditioned at 23 ± 2 ° C and 50 ± 5% relative humidity at EN 13238 according to 4.3 C.	
Class A1 (TS EN 13501-1 matter 8.3)	A product for determination of conformity to Class A1, subject to exposure to TS EN ISO 13501-1 (test period TS EN ISO 1716, TS EN ISO 1182) kullanılarak.
Test Sample	Length 550 mm, Width 20 mm, Thickness - mm (12mm thick on calcium carbonate sheets)
Exposure Requirements	Surface exposed to flame

RESULT: Tests and tests were carried out according to European Standard No. TS 13501-1 A1. The product has passed the test successfully.

"The result of this experiment is related to the behavior of the test specimen of a product under the special conditions in which the test is applied; Not a single criterion for assessing the potential fire hazard of a product under actual use."

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Reaction to fire

The combustion class of the product (Euroclasses) must be determined according to EN 13501-1.

TS EN 13501-1 - Flammability Test (TS EN ISO 1182)

This test is applied to determine whether the contribution of a product to a fire is significant regardless of the end use of a product. This test relates to Class A1 and Class A1ff classes.

Matter	Rule / Test	Result / Evaluation		Decision
5	Test Sample			
	The specimen should be cylindrical, the volume of each specimen should be (76 ± 8) cm ³ , diameter $(45 (+ 0 / - 2))$ mm and height (50 ± 3) mm.	45 mm in diameter and 50 mm in height. (76 cm ³)		PASS
6	Conditioning			
	Test samples shall be conditioned as specified in EN 13238. The test samples should be dried and tested for 20 hours to 24 hours in an air-circulating oven with a temperature of (60 ± 5) °C. it must be allowed to cool to ambient temperature in a desiccator before being held. The mass of each sample should be determined with a sensitivity of 0.01 g before the experiment.	Conditioning Time: 1 week Conditioning Temperature: 23 ± 2 °C Conditioning Humidity: $50 \pm 5\%$ <i>EN 13238 4.3 Conditioning for fixed period</i> a) Minimum conditioning period of one weeks; 2) cement based products;		PASS
8	Display of results			
8.1	The mass loss measured mass loss is calculated and recorded in% for each of the five test samples.	1. test	1.13 MJ/kg	PASS
8.2	Flammability The measured total time of continuous exacerbation is calculated and recorded in seconds for each of the five test samples.		TS EN ISO 1716	
8.3	Note 1: TS EN 13501 -1 Class A1 Homogeneous and non-homogeneous products must meet the $t_f \leq 30$ °C and $m_{f, ve} 50\%$ and $t_f = 0s$ criteria. Note 2: TS EN 13501-1 Class A2 Homogeneous and non-homogeneous products must meet the $\Delta t \leq 50$ °C and Δm olmayan 50% and t_f Sınıf 20s criteria. Note 3: TS EN 13501-1 Class Homogen products shall meet the PCS ojen 2.0 MJ / kg criteria.	2. test	1.14 MJ/kg	
		3. test	1.13 MJ/kg	
			TS EN ISO 1716	

Classification of COTTON PLASTER according to TS EN 13501-1 according to the behavior against fire:

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<u>Test method</u>	<u>Parameter</u>	<u>Number of tests</u>	<u>Mean of continuous</u>	<u>Results</u>
			<u>parameter</u>	<u>Suitable parameter</u>
TS EN 13823	FIGRA _{0,2MJ} (W/s)	3	40,5	(-)
	LFS > kenar	3	(-)	Hayır
	THR _{600s} (MJ)	3	1,9	(-)
	SMOGRA (m ² /s ²)	3	60,0	(-)
	TSP _{600s} (m)	3	90,7	(-)
	Drops and droplets (s)	3	(-)	Hayır

(-): Not applicable

(1) Exposure of the surface to flame

(2): Exposure of the edge to flame (c) EN 14509: 2014 standard C.1.2.2.a)

<u>Test method</u>	<u>Parameter</u>	<u>Parameter</u>	<u>Compliance criteria</u>
TS EN 13823	FIGRA _{p 2 MJ} [W/s]	40,5	< 120 (B)
	THR _{600s} (MJ)	1,9	<7,5(B)
	LFS < kenar	(-)	Evet(B)
	SMOGRA [m ² /s ²]	60,0	<180 (s1)
	TSP _{600s} [m]	90,7	<200 (s1)
	burning drops / particles burning time (s)	No	No (d0)

(-): Not applicable

Classification of *COTTON PLASTER* based on fire behavior:

A1

Additional classification for smoke formation:

S1

Additional classification for burning drops / beads:

d0

Reaction to fire for COTTON PLASTER

<u>Flammability Behavior</u>		<u>Smoke</u>			<u>Burning Drops</u>	
A1	-	s	1	-	d	0

2. MOISTURE RESISTANCE TEST

ASTM D2247

This application covers the basic principles and operating procedures for testing the water resistance of coatings by exposing coated samples in an atmosphere maintained at 100% relative humidity of the coated samples.

Sample Name	Test	Standard	Environmental conditions	Result
Cotton Plaster	Moisture Resistance	ASTM D2247	38 °C, % 100 RH 336 h	No View Changes.

General Evaluation, The sample of cotton plaster was exposed to 100% humidity at 38 °C for 336 hours (14 days) and the appearance of cracking, discoloration and appearance did not occur.

2. SOUND INSULATION TEST

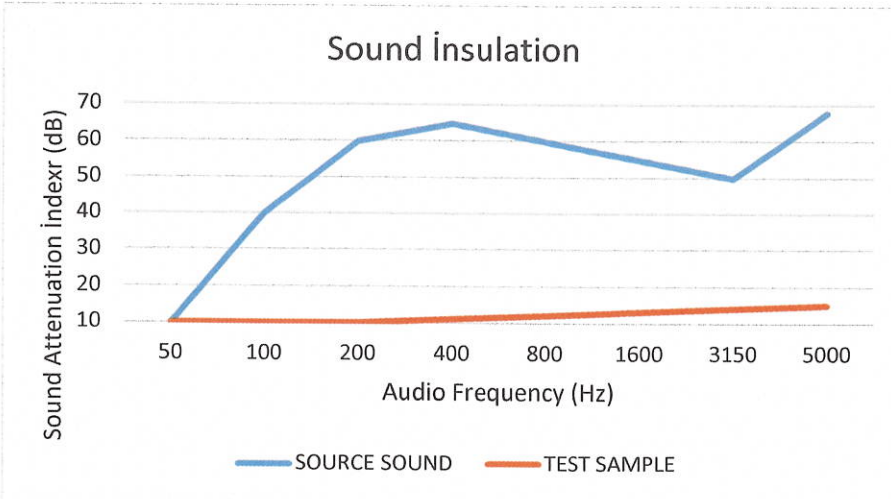
TS EN ISO 717-1

This standard covers building elements, such as walls, floors, doors and windows, and single number quantities of insulation against airborne noise in buildings and the rules for determining these quantities.

Test results

The weighted noise reduction index obtained according to TS EN ISO 717-1 standard is given below.

$R_w (C ; Ctr) = 32,6 (- 1,6 ; - 3,8) \text{ dB}$



Frequency F [Hz]	R 1/3 octave [dB]
50	33,0*
63	39,0*
80	32,0
100	34,2
125	29,1
160	28,4
200	32,6
250	30,7
315	32,8
400	33,6
500	37,2
630	38,8
800	41,2
1000	42,0
1250	46,5
1600	46,7
2000	44,3
2500	51,5
3150	52,9
4000	58,6
5000	62,7

* Minimum values

General Evaluation; As a result of the test, the R_w value is 36.2 dB.

4. ANTİBACTERIALITY TEST

Microorganism	Staphylococcus aureus ATCC 6538 P (Gram (+))
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Sample	Name of the Reproduction Microorganism (cfu/cm ²)		Logarithmic Reduction Log (cfu/cm ²)	
	Contact moment (0 saat)	After incubation (24 s, 35° C)	Log (A)	Log (B)
Untreated Control	3.75x10 ³	1x10 ⁷	3.57	7

Sample	Result (cfu/cm ²)	Logarithmic Reduction
	After incubation (24 s, 35° C)	Log (C) (At)
Treated	1.38x10 ⁷	4,32

Log (R) = B-C	R = 2.68
	Effective

Microorganism	Escherichia Coli ATCC 8739 Gram (-)
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Sample	Name of the Reproduction Microorganism (cfu/cm ²)		Logarithmic Reduction Log (cfu/cm ²)	
	Contact moment (0 saat)	After incubation (24 s, 35° C)	Log (A)	Log (B)
Untreated Control	5x10 ³	1.13x10 ⁷	3.69	7.05

Sample	Result (cfu/cm ²)	Logarithmic Reduction
	After incubation (24 s, 35° C)	Log (C) (At)
Treated	1.26x10 ⁷	4.58

Log (R) = B-C	R = 2.47
	Effective

R: Antibacterial activity A: Average logarithmic value of the untreated sample immediately after incubation. (0 hours contact moment) B: Average logarithmic value of untreated sample at the end of 24 hours. A: The average logarithmic value of the processed test sample at the end of 24 hours.

General Evaluation; According to JIS Z 2801: 2012 method, antibacterial activity value should be $R \geq 2$ and Cotton Plaster is antibacterial.