



TSE Deney ve Kalibrasyon Merkezi Başkanlığı
Headship of TSE Test and Calibration Center

TÜRK STANDARDLARI ENSTİTÜSÜ

TURKISH STANDARDS INSTITUTION

TALEP NO: 237780-2
Request No.

**TSE DENEY ve KALİBRASYON MERKEZİ BAŞKANLIĞI YAPI MALZEMELERİ
YANGIN VE AKUSTİK LABORATUVAR MÜDÜRLÜĞÜ LABORATUVARI
MÜDÜRLÜĞÜ**

TSE Headship Of Test And Calibration Center Construction Materials Fire And Acoustics Laboratory Directorate

Yapı Malzemeleri Yönetmeliği(305/2011/AB)
Construction Products Regulation(305/2011/EU)

ONAYLANMIŞ KURULUŞ : 1783
NOTIFIED BODY : 1783

TS EN 13501-1

YANGINA TEPKİ SINIFLANDIRMA RAPORU
REACTION TO FIRE CLASSIFICATION REPORT

Talep Eden Applicant	: TEPE BETOPAN YAPI MALZ. SAN. VE TİC. A.Ş.
Adresi Address	: BİLKENT BEYTEPE KÖYÜ YOLU NO: 5 ÇANKAYA ANKARA
Üretim Yeri Adı ve Adresi Name and address of Production Place Address	: TEPE BETOPAN YAPI MALZ. SAN. VE TİC. A.Ş. ALÇI MAH. ASO 2. VE 3 ORGANİZE SAN.BÖLGESİ 2026. CD NO:12 ANKARA
Markası,Ticari Modeli,Tipi Trade Mark, Commercial Model,Type	: TEPEPAN, CATEGORY A
Ürün Tanımı Product description	: Fiber cement flat sheet (TS EN 12467:2013-04)

YANGINA TEPKİ SINIFI
REACTION TO FIRE CLASSIFICATION

A1

Rapor Değerlendirme Tarihi : 08.02.2019
Date of Issue

CE

Onaylayan
Approved

Sencer Güven

Bu rapor 3 sayfadır ve kısmen çoğaltılamaz.

This report is composed of 3 pages and cannot be copied partially.

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Sayfa 1 / 3

LAB-D-FR-45 / 08.01.2017 - 2

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TALEP NO: 237780-2

Request No.

1. INTRODUCTION

This classification report defines the classification assigned to the product “TEPEPAN - CATEGORY A” in accordance with the procedures given in TS EN 13501-1+A1: 2013-04.

This report was translated to English from the original report in Turkish with TSE report number 233939-1 and date 13.12.2018.

2. DETAILS OF CLASSIFIED PRODUCT

2.1. General

The classified product is defined as a cement based flat board reinforced with fibers.

2.2. Properties

Related product standard	TS EN 12467: 2013-04 (EN 12467:2012)
Intended use	As internal and external wall and ceiling finish
Details	The classified product is defined as a flat, fiber reinforced, cement sheet with the following properties: type NT, reinforcement fiber is in a totally dispersed form, category A, big sized, height and width tolerance level 1, bending strength class 2, apparent density at least 1 g/cm ³ .

3. TEST REPORTS AND RESULTS

3.1 Test Reports

Following test reports were taken into account in the determination of this classification.

Laboratory	Sponsor	Test Report Reference no	Test Method
TSE Yapı Malzemeleri Yangın ve Akustik Laboratuvarı Müdürlüğü	TEPE BETOPAN YAPI MALZ. SAN. VE TİC. A.Ş.	442697 / 11-18	TS EN ISO 1182: 2010-07
TSE Yapı Malzemeleri Yangın ve Akustik Laboratuvarı Müdürlüğü	TEPE BETOPAN YAPI MALZ. SAN. VE TİC. A.Ş.	442698 / 11-18	TS EN ISO 1716: 2011-01

3.2 Test Results

Test method	Parameter	Number of tests	Test results		
			Mean of continous parameters	Non continous parameters	A1 _n class criteria
TS EN ISO 1182	Δm (%)	5	13,8	(-)	≤ 50 %
	ΔT (°C)		7,6	(-)	≤ 30 °C
	tf (s)		0	(-)	= 0
TS EN ISO 1716	PCS (MJ.kg ⁻¹)	3	0,5889	(-)	≤ 2.0





4. CLASSIFICATION AND DIRECT FIELD OF APPLICATION

TALEP NO: 237780-2
Request No.

4.1. Reference

This classification has been carried out in accordance with TS EN 13501-1 + A1: 2013-04 clause 11.8.1

4.2. Classification

In relation to its reaction to fire behaviour the product "TEPEPAN - CATEGORY A" is classified as: **A1**

Fire behaviour	Smoke production	Flaming droplets
A1	(-)	(-)

Reaction to Fire Class: A1

4.3. Field of Application

This classification is valid for the products manufactured with the same recipe, same type, same formulation and under the same product name/description.

5. LIMITATIONS

At the time of publishing of the standard TS EN 13501-1+A1: 2014-04, there wasn't any decision concerning the duration of validity of a classification report.

Prepared by

Arda ATAKOL
TSE Specialist

Approved by

Sencer GUVEN
Laboratory Manager Dep.





TSE Deney ve Kalibrasyon Merkezi Başkanlığı
Headship of TSE Test and Calibration Center

TÜRK STANDARDLARI ENSTİTÜSÜ

TURKISH STANDARDS INSTITUTION

TALEP NO: 237780-1
Request No.

TSE DENEY ve KALİBRASYON MERKEZİ BAŞKANLIĞI YAPI MALZEMELERİ YANGIN VE AKUSTİK LABORATUVAR MÜDÜRLÜĞÜ LABORATUVARI MÜDÜRLÜĞÜ

TSE Headship Of Test And Calibration Center Construction Materials Fire And Acoustics Laboratory Directorate

Yapı Malzemeleri Yönetmeliği(305/2011/AB)
Construction Products Regulation(305/2011/EU)

ONAYLANMIŞ KURULUŞ : 1783
NOTIFIED BODY : 1783

TS EN 13501-1

YANGINA TEPKİ SINIFLANDIRMA RAPORU REACTION TO FIRE CLASSIFICATION REPORT

Talep Eden Applicant	: TEPE BETOPAN YAPI MALZ. SAN. VE TİC. A.Ş.
Adresi Address	: BİLKENT BEYTEPE KÖYÜ YOLU NO: 5 ÇANKAYA ANKARA
Üretim Yeri Adı ve Adresi Name and address of Production Place Address	: TEPE BETOPAN YAPI MALZ. SAN. VE TİC. A.Ş. ALÇI MAH. ASO 2. VE 3 ORGANİZE SAN.BÖLGESİ 2026. CD NO:12 ANKARA
Markası,Ticari Modeli,Tipi Trade Mark, Commercial Model,Type	: TEPEPAN, CATEGORY C
Ürün Tanımı Product description	: Fiber cement flat sheet (TS EN 12467:2013-04)

YANGINA TEPKİ SINIFI REACTION TO FIRE CLASSIFICATION

A1

Rapor Değerlendirme Tarihi : 08.02.2019
Date of Issue



Onaylayan
Approved

Sencer Güneş
Onay

Bu rapor 3 sayfadır ve kısmen çoğaltılamaz.
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Adres: Aydınli Mah Güllennur Sok. No:7/1 Tuzla İSTANBUL Tel: +90 216 560 0560 Faks: +90 216 560 0565 e-posta: yalitim@tse.org.tr web: www.tse.org.tr

LAB-D-FR-45 / 08.01.2017 - 2

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TALEP NO: 237780-1
Request No.

1. INTRODUCTION

This classification report defines the classification assigned to the product "TEPEPAN - CATEGORY C" in accordance with the procedures given in TS EN 13501-1+A1: 2013-04.

This report was translated to English from the original report in Turkish with TSE report number 233939-1 and date 13.12.2018.

2. DETAILS OF CLASSIFIED PRODUCT

2.1. General

The classified product is defined as a cement based flat board reinforced with fibers.

2.2. Properties

Related product standard	TS EN 12467: 2013-04 (EN 12467:2012)
Intended use	As internal and external wall and ceiling finish
Details	The classified product is defined as a flat, fiber reinforced, cement sheet with the following properties: type NT, reinforcement fiber is in a totally dispersed form, category C, big sized, height and width tolerance level 1, bending strength class 2, apparent density at least 1 g/cm ³ .

3. TEST REPORTS AND RESULTS

3.1 Test Reports

Following test reports were taken into account in the determination of this classification.

Laboratory	Sponsor	Test Report Reference no	Test Method
TSE Yapı Malzemeleri Yangın ve Akustik Laboratuvarı Müdürlüğü	TEPE BETOPAN YAPI MALZ. SAN. VE TİC. A.Ş.	443769 / 12-18	TS EN ISO 1182: 2010-07
TSE Yapı Malzemeleri Yangın ve Akustik Laboratuvarı Müdürlüğü	TEPE BETOPAN YAPI MALZ. SAN. VE TİC. A.Ş.	443772 / 12-18	TS EN ISO 1716: 2011-01

3.2 Test Results

Test method	Parameter	Number of tests	Test results		
			Mean of continous parameters	Non continous parameters	A1 _n class criteria
TS EN ISO 1182	Δm (%)	5	13,1	(-)	≤ 50 %
	ΔT (°C)		7,7	(-)	≤ 30 °C
	tf (s)		0	(-)	= 0
TS EN ISO 1716	PCS (MJ.kg ⁻¹)	3	0,5018	(-)	≤ 2.0





4. CLASSIFICATION AND DIRECT FIELD OF APPLICATION

TALEP NO: 237780-1
Request No.

4.1. Reference

This classification has been carried out in accordance with TS EN 13501-1 + A1: 2013-04 clause 11.8.1

4.2. Classification

In relation to its reaction to fire behaviour the product "TEPEPAN – CATEGORY C" is classified as: **A1**

Fire behaviour	Smoke production	Flaming droplets
A1	(-)	(-)

Reaction to Fire Class: A1

4.3. Field of Application

This classification is valid for the products manufactured with the same recipe, same type, same formulation and under the same product name/description.

5. LIMITATIONS

At the time of publishing of the standard TS EN 13501-1+A1: 2014-04, there wasn't any decision concerning the duration of validity of a classification report.

Prepared by

Arda ATAKOL
TSE Specialist

Approved by

Sencer GUVEN
Laboratory Manager Dep.





TSE DENEY ve KALİBRASYON MERKEZİ BAŞKANLIĞI
Yapı Malzemeleri Yangın ve Akustik Laboratuvarı Müdürlüğü



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HEADSHIP OF TSE TEST and CALIBRATION CENTER
CONSTRUCTION MATERIALS FIRE AND ACOUSTICS LABORATORY DIRECTORATE

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Test
TS EN ISO/IEC 17025
AB-0001-T

AB-0001-T

454464

02-19

MUAYENE VE DENEY RAPORU
TEST REPORT

Deneysel Talep Eden/Firma (Adı,Adresi,Şehir vb.) Requesting/Customer (Name,Address, City etc.)	:	YAPI MALZEMELERİ SEKTÖRÜ BELGELENDİRME MÜDÜRLÜĞÜ (Belg. Uzmanı:SERKAN EYİMAYA) (TEPE BETOPAN YAPI MLZ.SAN.VE TİC.A.Ş.: ALÇI MAH. ASO 2. VE 3. O.S.B 2026 CAD. NO:12 --ANKARA)
Deneysel Talep Tarihi/No Order Date / No	:	28.09.2018 / 237780
Numunenin Tanımı (No,Cins, Marka, Tip, Tür, Model vb.) Sample Description (No,Type,Mark,Model etc.)	:	451599,ELYAF TAKVİYELİ ÇİMENTO LEVHA, TEPEPAN , KATEGORİ A , - , - , 5.00 adet 451599,FIBER CEMENT FLAT SHEET,TEPEPAN,CATEGORY A,-,-,5,00 item
Numune Kabul Tarihi Test Item Receipt Date	:	28.09.2018 Cert. Exp. Serkan EYİMAYA
Deneysel Yapıldığı Tarih Date of Test	:	28.09.2018 - 26.11.2018
Uygulanan Standard / Metod Applied Standard/Method	:	TS EN 13501-1 + A1:2013-04 Yapı mamulleri ve yapı elemanları - Yangın sınıflandırması- Bölüm 1: Yangın karşısındaki davranış deneylerinden elde edilen veriler kullanılarak sınıflandırma TS EN 13501-1 + A1:2013-04 Fire classification of construction products and building elements -Part 1: Classification using test data from reaction to fire tests
Raporun Sayfa Sayısı Number of pages of the report	:	4
Açıklamalar Remarks	:	

Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği(EA) ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanınma antlaşmasını imzalamıştır.

The Turkish Accreditation Agency(TURKAK) is signatory to the multilateral agreements of the European co-operation for the Accreditation(EA) and of the International Laboratory Accreditation(ILAC) for the Mutual recognition of test reports.

Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metodları bu raporun tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

Mühür Seal	Tarih Date	Deney Sorumlusu Person in charge of tests	Kontrol Eden Reviewer	Onaylayan Approved by
	8.12.2019	Arda ATAKOL Deney Personeli Testing Expert	Sencer GÜVEN Teknik Şef Technical Chief	Sencer GÜVEN Laboratuvar Müdürü V. Laboratory Manager Dep.

Bu rapor, hazırlayan laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir.

Bu rapor, sadece deneyi yapılan numune için geçerlidir ve "Ürün Belgesi" yerine geçmez.

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This test report represents only tested sample(s), and shall not be used as Product Certificate



REACTION TO FIRE CLASSIFICATION

1. Introduction

This classification report defines the classification assigned to the product defined in 2.1 in accordance with the procedures given in TS EN 13501-1+A1: 2013-04.



REACTION TO FIRE CLASSIFICATION ACCORDING TO TS EN 13501-1

SPONSOR	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş. BİLKENT BEYTEPE KÖYÜ YOLU NO: 5 ÇANKAYA ANKARA
DEMANDED BY	TSE CONSTRUCTION MATERIALS SECTOR DIRECTORATE ANKARA
MANUFACTURER	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş. ALÇI MAH. ASO 2. VE 3 ORGANİZE SAN.BÖLGESİ 2026. CD NO:12/ ANKARA
PREPARED BY	TSE Yapı Malzemeleri Yangın ve Akustik Laboratuvarı Müdürlüğü
DATE OF ISSUE	8.2.2018

This classification report consists of 4 pages and may only be used or reproduced in its entirety. It was translated to English from the original report in Turkish with TSE report number and date : 442700 / 11-18

2. Details of Classified Product

2.1. General

GENERAL DESCRIPTION	Fiber reinforced cement board
TRADEMARK	TEPEPAN
MODEL	CATEGORY A





REACTION TO FIRE CLASSIFICATION

2.2 Product Description

PRODUCT DEFINITION	The classified product is defined as a flat, fiber reinforced, cement sheet with the following properties: type NT, reinforcement fiber is in a totally dispersed form, category A, big sized, height and width tolerance level 1, bending strength class 2, apparent density at least 1 g/cm ³ .
PRODUCT STANDARD	TS EN 12467:2016-12
PURPOSE OF ANALYSIS	STANDARD REVISION AND CERTIFICATION SCOPE EXPANSION

3.3 Test Reports and Results in Support of This Classification Report

3.1. Reports

Following test reports were taken into account in the determination of this classification.

Laboratory	Sponsor	Test Report Reference No	Test Method
TSE Yapı Malzemeleri Yangın ve Akustik Laboratuvar Müdürlüğü	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş.	454447	TS EN ISO 1182:2010-07
		02-19	
TSE Yapı Malzemeleri Yangın ve Akustik Laboratuvar Müdürlüğü	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş.	454463	TS EN ISO 1716: 2011-01
		02-19	

3.2. Results

Results of the test reports mentioned in 3.1 and the classification criteria corresponding to class A1 as stated in TS EN 13501-1+A1: 2013-04 are given in the following table.

Test Method	Parameter	Number of Tests	Test Results		A1 class criteria
			Mean of continous parameters	Non-continous parameters	
TS EN ISO 1182	Δm (%)	5	13,8	(-)	≤ 50
	ΔT (°C)		7,6	(-)	≤ 30
	tf (s)		0	(-)	= 0
TS EN ISO 1716	PCS (MJ/kg)	3	0,5889	(-)	≤ 2

(-) Not applicable





REACTION TO FIRE CLASSIFICATION

4. Classification and Direct Field of Application

4.1. Classification Reference

This classification has been carried out in accordance with TS EN 13501-1 + A1: 2013-04 clause 11.8.1.

4.2. Classification

In relation to its reaction to fire behaviour, the product defined in 2.1 is classified as: **A1**

Fire Behaviour	Smoke Production	Flaming Droplets
A1	(-)	(-)
REACTION TO FIRE CLASS: A1		

4.3. Field of Application

This classification is valid for the products manufactured with the same recipe, formulation and product name/description. Differences in the thickness of the product does not effect the classification.

5. Limitations

At the time of publishing of the standard TS EN 13501-1+A1: 2014-04, there wasn't any decision concerning the duration of validity of a classification report.

The present document represents neither type approval nor certification of the product.

End of classification report.

2





TSE DENEY ve KALİBRASYON MERKEZİ BAŞKANLIĞI
Yapı Malzemeleri Yangın ve Akustik Laboratuvarı Müdürlüğü



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HEADSHIP OF TSE TEST and CALIBRATION CENTER
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MUAYENE VE DENEY RAPORU
TEST REPORT

Test
TS EN ISO/IEC 17025
AB-0001-T

AB-0001-T

454447

02-19

Deneysel Talep Eden/Firma (Adı,Adresi,Şehir vb.) <i>Requesting/Customer</i> (Name,Address, City etc.)	:	YAPI MALZEMELERİ SEKTÖRÜ BELGELENDİRME MÜDÜRLÜĞÜ (Belg. Uzmanı:SERKAN EYİMAYA) (TEPE BETOPAN YAPI MLZ.SAN.VE TİC.A.Ş.: ALÇI MAH. ASO 2. VE 3. O.S.B 2026 CAD. NO:12 --ANKARA)
Deneysel Talep Tarihi/No <i>Order Date / No</i>	:	28.09.2018 / 237780
Numunenin Tanımı (No,Cins, Marka, Tip, Tür, Model vb.) <i>Sample Description</i> (No,Type,Mark,Model etc.)	:	451599,ELYAF TAKVİYELİ ÇİMENTO LEVHA, TEPEPAN , KATEGORİ A , - , - , 5.00 adet 451599,FIBER CEMENT FLAT SHEET,TEPEPAN,CATEGORY A,-,-,5.00 item
Numune Kabul Tarihi <i>Test Item Receipt Date</i>	:	28.09.2018 Cert. Exp. Serkan EYİMAYA
Deneyslerin Yapıldığı Tarih <i>Date of Test</i>	:	28.09.2018 - 26.11.2018
Uygulanan Standard / Metod <i>Applied Standard/Method</i>	:	TS EN ISO 1182:2010-04 Yapı mamullerinin yangın deneylerine tepkisi - Tutuşmazlık deneyi (ISO 1182:2010) TS EN ISO 1182:2010-04 Reaction to fire tests for products - Non-combustibility test (ISO 1182:2010)
Raporun Sayfa Sayısı <i>Number of pages of the report</i>	:	4
Açıklamalar <i>Remarks</i>	:	

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Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metodları bu raporun tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.
The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

Mühür
Seal



Tarih
Date

8.12.2019

Deneysel Sorumlusu
Person in charge of tests

Arda ATAKOL
Deneysel Personeli
Testing Expert

Kontrol Eden
Reviewer

Sencer GÜVEN
Teknik Şef
Technical Chief

Onaylayan
Approved by

Sencer GÜVEN
Laboratuvar Müdürü V.
Laboratory Manager Dep.

Bu rapor, hazırlayan laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir.

Bu rapor, sadece deneyi yapılan numune için geçerlidir ve "Ürün Belgesi" yerine geçmez.

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This test report represents only tested sample(s), and shall not be used as Product Certificate



TEST RESULTS

TS EN ISO 1182:2010-07 Reaction to fire tests for products - Non-combustibility test

SPONSOR	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş. BİLKENT BEYTEPE KÖYÜ YOLU NO: 5 ÇANKAYA ANKARA
DEMANDED BY	TSE CONSTRUCTION MATERIALS SECTOR DIRECTORATE ANKARA
MANUFACTURER	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş. ALÇI MAH. ASO 2. VE 3 ORGANİZE SAN.BÖLGESİ 2026. CD NO:12/ ANKARA

Sample Details

ARRIVAL DATE	28.9.2018
TEST DATE	26.11.2018
GENERAL DESCRIPTION	Fiber reinforced cement board
TRADEMARK	TEPEPAN
MODEL	CATEGORY A
PRODUCT STANDARD	TS EN 12467:2016-12
PACKAGING	Wrapped in polyethylene film, in a cardbox
CONDITIONS AT ARRIVAL	Intact, cylindrical pieces with thicknesses 14 and 8 mm (30 pcs each).
INVESTIGATION NO	1859937
PURPOSE OF ANALYSIS	STANDARD REVISION AND CERTIFICATION SCOPE EXPANSION

This report was translated to English from the original report in Turkish with TSE report number and date : 442697 / 11-18

Sample Collection and Preparation

The samples were selected, taken and delivered to the laboratory under monitoring of related TSE Certification Directorate experts.

The products were cut and prepared in cylindrical form with appropriate thickness by the manufacturer.

The test samples were constructed by putting 6 of the 8 mm thick pieces on top of each other.





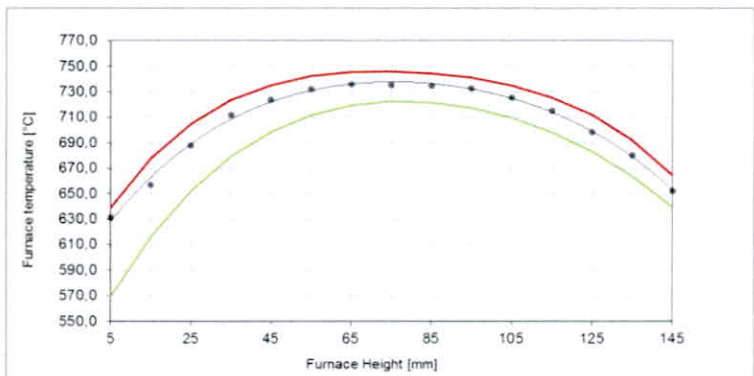
TEST RESULTS

Conditioning

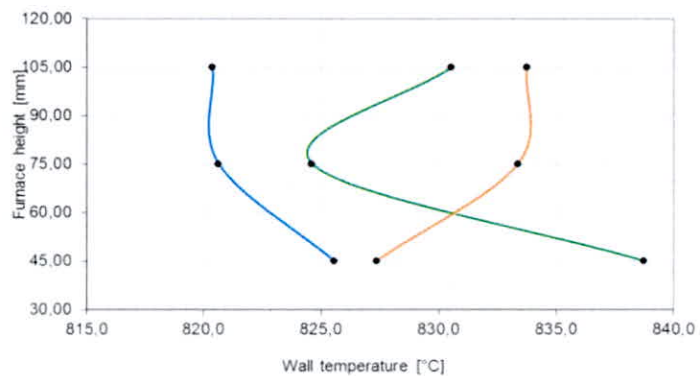
Standard, clause and criterion followed for conditioning: TS EN 13820:2004-01 clause 4.3 fixed period
 Samples were first conditioned in a conditioning chamber, at $23\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ and $\%50 \pm \%5$ relative humidity for 58 days
 and then they were allowed to stand in a ventilated oven, at $65\text{ }^{\circ}\text{C}$ for 24 hours

Calibration

Furnace Temperature					
Height [mm]	Tdown [°C]	Tup [°C]	Tmin [°C]	Tav. [°C]	Tmax [°C]
5	619,64	643,06	569,5	631,4	638,6
15	640,56	673,18	616,2	656,9	677,5
25	672,80	703,16	652,2	688,0	704,9
35	701,50	721,82	679,3	711,7	723,5
45	715,78	732,16	698,8	724,0	735,3
55	725,76	739,02	711,9	732,4	742,2
65	731,36	740,50	719,6	735,9	745,5
75	731,24	739,46	722,7	735,4	746,1
85	730,86	738,80	721,8	734,8	744,7
95	730,44	734,62	717,3	732,5	741,1
105	723,16	727,70	709,3	725,4	735,1
115	713,22	717,08	697,9	715,2	725,8
125	695,58	701,42	682,8	698,5	712,2
135	682,08	678,06	663,5	680,1	692,6
145	649,40	654,96	639,4	652,2	664,9



Furnace Wall Temperature					
	Axis 1	Axis 2	Axis 3	Mean Level	Deviation Level
Level 1 (105mm)	830,5	833,8	820,4	828,22	0,012
Level 2 (75mm)	824,6	833,4	820,6	826,20	0,256
Level 3 (45mm)	838,7	827,4	825,5	830,55	0,269
MeanAxis	831,29	831,50	822,17	828,32	0,18
	828,32				
	0,495			OK	OK
Deviation Axis	0,359	0,384	0,742		





TEST RESULTS

Test Results

Mass Loss						
Samples	1	2	3	4	5	Average
Initial mass(g)	90,95	91,14	91,08	91,95	90,56	91,14
Final mass(g)	78,19	78,46	78,28	79,66	78,22	78,56
Mass loss(%)	14,0	13,9	14,1	13,4	13,6	13,8

Continous Flaming						
Samples	1	2	3	4	5	Average
Period (s)	0	0	0	0	0	0

Furnace Temperature Rise						
Samples	1	2	3	4	5	Average
T _m (°C)	765,6	764,6	764,3	765,9	764,6	765,0
T _f (°C)	759,9	756,3	757,7	754,8	758,1	757,4
ΔT (°C)	5,7	8,3	6,6	11,1	6,5	7,6

T_m: Maxium temperature recorded during the test
T_f: Average temperature in the last minute of the test

Notes	(-)
-------	-----

TS EN ISO 1182 performance criteria presented in TS EN 13501-1:2013 for class A1		
Average ΔT	Average mass loss (%)	Any flaming longer than 5 s.
≤30	≤50	None

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

End of test report.





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MUAYENE VE DENEY RAPORU
TEST REPORT



Test
TS EN ISO/IEC 17025
AB-0001-T

AB-0001-T

454463

02-19

Deneysel Talep Eden/Firma : YAPI MALZEMELERİ SEKTÖRÜ BELGELENDİRME MÜDÜRLÜĞÜ
(Adı,Adresi,Şehir vb.) (Belg. Uzmanı:SERKAN EYİMAYA)
Requesting/Customer (TEPE BETOPAN YAPI MLZ.SAN.VE TİC.A.Ş.: ALÇI MAH. ASO 2. VE 3. O.S.B
(Name,Address, City etc.) 2026 CAD. NO:12 --ANKARA)

Deneysel Talep Tarihi/No : 28.09.2018 / 237780
(Order Date / No)

Numunenin Tanımı : 451599,ELYAF TAKVİYELİ ÇİMENTO LEVHA, TEPEPAN , KATEGORİ A , - , - , 5.00 adet
(No,Cins, Marka, Tip, Tür, Model vb.)
Sample Description(No,Type,Mark,Model etc.) 451599,FIBER CEMENT FLAT SHEET,TEPEPAN,CATEGORY A,-,-,5,00 item

Numune Kabul Tarihi : 28.09.2018
(Test Item Receipt Date)
Cert. Exp. Serkan EYİMAYA

Deneysel Yapıldığı Tarih : 28.09.2018 - 16.11.2018
(Date of Test)

Uygulanan Standard / Metod : TS EN ISO 1716:2011-01 Yapı ürünlerinin yangına tepki deneyleri - Yanma ısısının
(Applied Standard/Method) tayini (kalorifik değer) (ISO 1716:2010)
TS EN ISO 1716:2011-01 Reaction to fire tests for products - Determination of the gross heat of combustion (calorific value) (ISO 1716:2010)

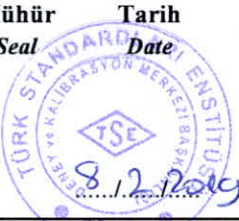
Raporun Sayfa Sayısı : 3
(Number of pages of the report)

Açıklamalar :
(Remarks)

Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği(EA) ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanınma anlaşmasını imzalamıştır.
The Turkish Accreditation Agency(TURKAK) is signatory to the multilateral agreements of the European co-operation for the Accreditation(EA) and of the International Laboratory Accreditation(ILAC) for the Mutual recognition of test reports.
Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metodları bu raporun tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.
The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

Mühür
Seal

Tarih
Date



Deneysel Sorumlusu
Person in charge of tests

Arda ATAOL
Deneysel Personeli
Testing Expert

Kontrol Eden
Reviewer

Sencer GÜVEN
Teknik Şef
Technical Chief

Onaylayan
Approved by

Sencer GÜVEN
Laboratuvar Müdürü V.
Laboratory Manager Dep.

Bu rapor, hazırlayan laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir.

Bu rapor, sadece deneyi yapılan numune için geçerlidir ve "Ürün Belgesi" yerine geçmez.

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This test report represents only tested sample(s), and shall not be used as Product Certificate



TEST RESULTS

TS EN ISO 1716:2011-01 Reaction to fire tests for products Determination of the gross heat of combustion

SPONSOR	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş. BİLKENT BEYTEPE KÖYÜ YOLU NO: 5 ÇANKAYA ANKARA
DEMANDED BY	TSE CONSTRUCTION MATERIALS SECTOR DIRECTORATE ANKARA
MANUFACTURER	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş. ALÇI MAH. ASO 2. VE 3 ORGANİZE SAN.BÖLGESİ 2026. CD NO:12/ ANKARA

Sample Details

ARRIVAL DATE	28.9.2018
TEST DATE	26.11.2018
GENERAL DESCRIPTION	Fiber reinforced cement board
TRADEMARK	TEPEPAN
MODEL	CATEGORY A
PRODUCT STANDARD	TS EN 12467:2016-12
PACKAGING	Wrapped in polyethylene film, in a cardbox
CONDITIONS AT ARRIVAL	Intact, cylindrical pieces with thicknesses 14 and 8 mm (30 pcs each).
INVESTIGATION NO	1859937
PURPOSE OF ANALYSIS	STANDARD REVISION AND CERTIFICATION SCOPE EXPANSION

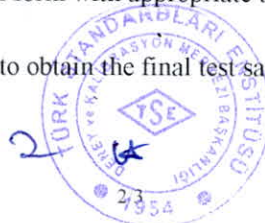
This report was translated to English from the original report in Turkish with TSE report number and date : 442698 / 11-18

Sample Collection and Preparation

The samples were selected, taken and delivered to the laboratory under monitoring of related TSE Certification Directorate experts.

The products were cut and prepared in cylindrical form with appropriate thickness by the manufacturer.

One of the pieces was crumbled in a brass mortar to obtain the final test sample in powder form.





TEST RESULTS

Conditioning

Standard, clause and criterion followed for conditioning: TS EN 13820:2004-01 clause 4.3 fixed period
Samples were conditioned in a conditioning chamber, at 23 °C ± 2 °C and %50 ± %5 relative humidity for 59 days

Deviation From the Test Method

There was no deviation from the test method

Test Results

Method	Crucible
Combustion aid	Benzoic Acid
Energy equivalent	932,982
An average gross total heat of combustion value was calculated from 3 consecutive test results. The determined values are expressed as follows.	

Sample	1	2	3	Average
Q _{pc} (MJ/kg)	0,5901	0,6616	0,5149	0,5889

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

End of test report.





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CONSTRUCTION MATERIALS FIRE AND ACOUSTICS LABORATORY DIRECTORATE

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MUAYENE VE DENEY RAPORU
TEST REPORT



Test
TS EN ISO/IEC 17025
AB-0001-T

AB-0001-T

454467

02-19

Deneysel Talep Eden/Firma (Adı,Adresi,Şehir vb.) <i>Requesting/Customer</i> (Name,Address,City etc.)	:	YAPI MALZEMELERİ SEKTÖRÜ BELGELENDİRME MÜDÜRLÜĞÜ (Belg. Uzmanı:SERKAN EYİMAYA) (TEPE BETOPAN YAPI MLZ.SAN.VE TİC.A.Ş.: ALÇI MAH. ASO 2. VE 3. O.S.B 2026 CAD. NO:12 --ANKARA)
Deneysel Talep Tarihi/No <i>Order Date / No</i>	:	28.09.2018 / 237780
Numunenin Tanımı (No,Cins, Marka, Tip, Tür, Model vb.) <i>Sample Description</i> (No,Type,Mark,Model etc.)	:	451601,ELYAF TAKVİYELİ ÇİMENTO LEVHA, TEPEPAN , KATEGORİ C , - , - , 5.00 adet 451601,FIBER CEMENT FLAT SHEET,TEPEPAN,CATEGORY C,-,-,5.00 item
Numune Kabul Tarihi <i>Test Item Receipt Date</i>	:	28.09.2018 Cert. Exp. Serkan EYİMAYA
Deneylerin Yapıldığı Tarih <i>Date of Test</i>	:	26.09.2018 - 28.11.2018
Uygulanan Standard / Metod <i>Applied Standard/Method</i>	:	TS EN 13501-1 + A1:2013-04 Yapı mamulleri ve yapı elemanları - Yangın sınıflandırması- Bölüm1: Yangın karşısındaki davranış deneylerinden elde edilen veriler kullanılarak sınıflandırma TS EN 13501-1 + A1:2013-04 Fire classification of construction products and building elements -Part 1: Classification using test data from reaction to fire tests
Raporun Sayfa Sayısı <i>Number of pages of the report</i>	:	4
Açıklamalar <i>Remarks</i>	:	

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Mühür
Seal

Tarih
Date

Deneysel Sorumlusu
Person in charge of tests

Kontrol Eden
Reviewer

Onaylayan
Approved by



Arda ATAKOL
Deneysel Personeli
Testing Expert

Sencer GÜVEN
Teknik Şef
Technical Chief

Sencer GÜVEN
Laboratuvar Müdürü V.
Laboratory Manager Dep.

Bu rapor, hazırlayan laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir.

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REACTION TO FIRE CLASSIFICATION

1. Introduction

This classification report defines the classification assigned to the product defined in 2.1 in accordance with the procedures given in TS EN 13501-1+A1: 2013-04.



REACTION TO FIRE CLASSIFICATION ACCORDING TO TS EN 13501-1

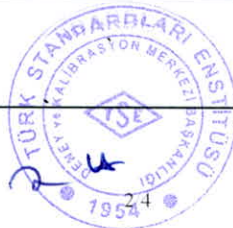
SPONSOR	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş. BİLKENT BEYTEPE KÖYÜ YOLU NO: 5 ÇANKAYA ANKARA
DEMANDED BY	TSE CONSTRUCTION MATERIALS SECTOR DIRECTORATE ANKARA
MANUFACTURER	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş. ALÇI MAH. ASO 2. VE 3 ORGANİZE SAN.BÖLGESİ 2026. CD NO:12/ ANKARA
PREPARED BY	TSE Yapı Malzemeleri Yangın ve Akustik Laboratuvarı Müdürlüğü
DATE OF ISSUE	8.2.2018

This classification report consists of 4 pages and may only be used or reproduced in its entirety. It was translated to English from the original report in Turkish with TSE report number and date : 443774 / 12-18

2. Details of Classified Product

2.1. General

GENERAL DESCRIPTION	Fiber reinforced cement board
TRADEMARK	TEPEPAN
MODEL	CATEGORY C





REACTION TO FIRE CLASSIFICATION

2.2 Product Description

PRODUCT DEFINITION	The classified product is defined as a flat, fiber reinforced, cement sheet with the following properties: type NT, reinforcement fiber is in a totally dispersed form, category C, big sized, height and width tolerance level 1, bending strength class 2, apparent density at least 1 g/cm ³ .
PRODUCT STANDARD	TS EN 12467:2016-12
PURPOSE OF ANALYSIS	STANDARD REVISION AND CERTIFICATION SCOPE EXPANSION

3. 3 Test Reports and Results in Support of This Classification Report

3.1. Reports

Following test reports were taken into account in the determination of this classification.

Laboratory	Sponsor	Test Report Reference No	Test Method
TSE Yapı Malzemeleri Yangın ve Akustik Laboratuvar Müdürlüğü	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş.	454465	TS EN ISO 1182:2010-07
		02-19	
TSE Yapı Malzemeleri Yangın ve Akustik Laboratuvar Müdürlüğü	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş.	454466	TS EN ISO 1716: 2011-01
		02-19	

3.2. Results

Results of the test reports mentioned in 3.1 and the classification criteria corresponding to class A1 as stated in TS EN 13501-1+A1: 2013-04 are given in the following table.

Test Method	Parameter	Number of Tests	Test Results		A1 class criteria
			Mean of continous parameters	Non-continous parameters	
TS EN ISO 1182	Δm (%)	5	13,1	(-)	≤ 50
	ΔT (°C)		7,6	(-)	≤ 30
	tf (s)		0	(-)	= 0
TS EN ISO 1716	PCS (MJ/kg)	3	0,5018	(-)	≤ 2

(-) Not applicable





REACTION TO FIRE CLASSIFICATION

4. Classification and Direct Field of Application

4.1. Classification Reference

This classification has been carried out in accordance with TS EN 13501-1 + A1: 2013-04 clause 11.8.1.

4.2. Classification

In relation to its reaction to fire behaviour, the product defined in 2.1 is classified as: **A1**

Fire Behaviour	Smoke Production	Flaming Droplets
A1	(-)	(-)
REACTION TO FIRE CLASS: A1		

4.3. Field of Application

This classification is valid for the products manufactured with the same recipe, formulation and product name/description. Differences in the thickness of the product does not effect the classification.

5. Limitations

At the time of publishing of the standard TS EN 13501-1+A1: 2014-04, there wasn't any decision concerning the duration of validity of a classification report.

The present document represents neither type approval nor certification of the product.

End of classification report.





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MUAYENE VE DENEY RAPORU
TEST REPORT



AB-0001-T

454465

02-19

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Deneysel Talep Tarihi/No <i>Order Date / No</i>	:	28.09.2018 / 237780
Numunenin Tanımı (No, Cins, Marka, Tip, Tür, Model vb.) <i>Sample Description</i> (No, Type, Mark, Model etc.)	:	451601, ELYAF TAKVIYELİ ÇİMENTO LEVHA, TEPEPAN, KATEGORİ C, -, -, 5.00 adet 451601, FIBER CEMENT FLAT SHEET, TEPEPAN, CATEGORY C, -, -, 5.00 item
Numune Kabul Tarihi <i>Test Item Receipt Date</i>	:	28.09.2018 Cert. Exp. Serkan EYİMAYA
Deneysel Yapıldığı Tarih <i>Date of Test</i>	:	28.09.2018 - 26.11.2018
Uygulanan Standard / Metod <i>Applied Standard/Method</i>	:	TS EN ISO 1182:2010-04 Yapı mamullerinin yangın deneylerine tepkisi - Tutuşmazlık deneyi (ISO 1182:2010) TS EN ISO 1182:2010-04 Reaction to fire tests for products - Non-combustibility test (ISO 1182:2010)
Raporun Sayfa Sayısı <i>Number of pages of the report</i>	:	4
Açıklamalar <i>Remarks</i>	:	

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Seal



Tarih
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Deneysel Sorumlusu
Person in charge of tests

[Signature]
Arda ATAKOL
Deneysel Personeli
Testing Expert

Kontrol Eden
Reviewer

[Signature]
Sencer GUVEN
Teknik Şef
Technical Chief

Onaylayan
Approved by

[Signature]
Sencer GUVEN
Laboratuvar Müdürü V.
Laboratory Manager Dep.

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TEST RESULTS

TS EN ISO 1182:2010-07 Reaction to fire tests for products - Non-combustibility test

SPONSOR	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş. BİLKENT BEYTEPE KÖYÜ YOLU NO: 5 ÇANKAYA ANKARA
DEMANDED BY	TSE CONSTRUCTION MATERIALS SECTOR DIRECTORATE ANKARA
MANUFACTURER	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş. ALÇI MAH. ASO 2. VE 3 ORGANİZE SAN.BÖLGESİ 2026. CD NO:12/ ANKARA

Sample Details

ARRIVAL DATE	28.9.2018
TEST DATE	26.11.2018
GENERAL DESCRIPTION	Fiber reinforced cement board
TRADEMARK	TEPEPAN
MODEL	CATEGORY C
PRODUCT STANDARD	TS EN 12467:2016-12
PACKAGING	Wrapped in polyethylene film, in a cardboard
CONDITIONS AT ARRIVAL	Intact, cylindrical pieces with thicknesses 14 and 8 mm (30 pcs each).
INVESTIGATION NO	1859937
PURPOSE OF ANALYSIS	STANDARD REVISION AND CERTIFICATION SCOPE EXPANSION

This report was translated to English from the original report in Turkish with TSE report number and date : 443769 / 12-18

Sample Collection and Preparation

The samples were selected, taken and delivered to the laboratory under monitoring of related TSE Certification Directorate experts.

The products were cut and prepared in cylindrical form with appropriate thickness by the manufacturer.

The test samples were constructed by putting 6 of the 8 mm thick pieces on top of each other.



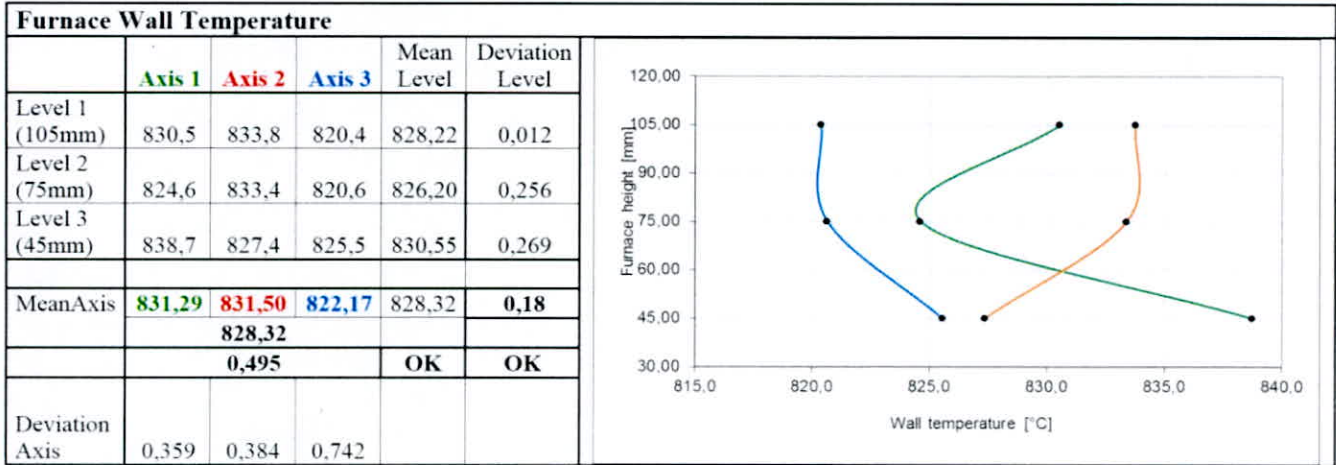
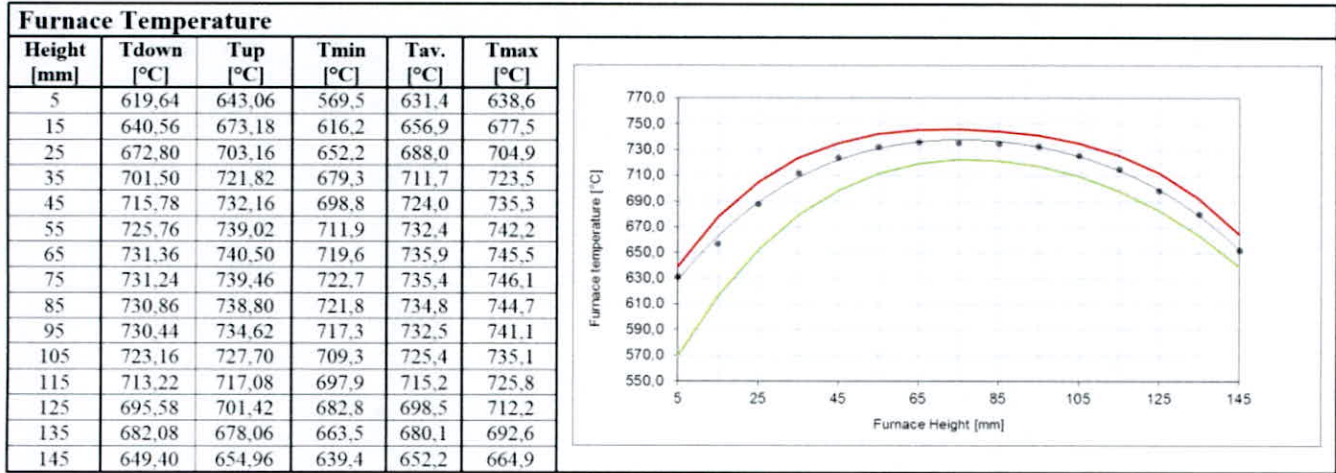


TEST RESULTS

Conditioning

Standard, clause and criterion followed for conditioning: TS EN 13820:2004-01 clause 4.3 fixed period
 Samples were first conditioned in a conditioning chamber, at $23\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ and $\%50 \pm \%5$ relative humidity for 58 days
 and then they were allowed to stand in a ventilated oven, at $65\text{ }^{\circ}\text{C}$ for 24 hours

Calibration





TEST RESULTS

Test Results

Mass Loss						
Samples	1	2	3	4	5	Average
Initial mass(g)	90,37	92,04	92,21	91,97	89,28	91,17
Final mass(g)	78,17	80,18	80	80,17	77,61	79,23
Mass loss(%)	13,5	12,9	13,2	12,8	13,1	13,1

Continous Flaming						
Samples	1	2	3	4	5	Average
Period (s)	0	0	0	0	0	0

Furnace Temperature Rise						
Samples	1	2	3	4	5	Average
T _m (°C)	765,6	764,6	764,3	765,9	764,6	765,0
T _f (°C)	759,9	756,3	757,7	754,8	758,1	757,4
ΔT (°C)	5,7	8,3	6,6	11,1	6,5	7,6

T_m: Maxium temperature recorded during the testT_f: Average temperature in the last minute of the test

Notes	(-)

TS EN ISO 1182 performance criteria presented in TS EN 13501-1:2013 for class A1

Average ΔT	Average mass loss (%)	Any flaming longer than 5 s.
≤30	≤50	None

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

End of test report.





TSE DENEY ve KALİBRASYON MERKEZİ BAŞKANLIĞI
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HEADSHIP OF TSE TEST and CALIBRATION CENTER
CONSTRUCTION MATERIALS FIRE AND ACOUSTICS LABORATORY DIRECTORATE

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MUAYENE VE DENEY RAPORU
TEST REPORT



AB-0001-T
454466
02-19

Deneysel Talep Eden/Firma (Adı,Adresi,Şehir vb.) <i>Requesting/Customer</i> (Name,Address,City etc.)	: YAPI MALZEMELERİ SEKTÖRÜ BELGELENDİRME MÜDÜRLÜĞÜ (Belg. Uzmanı:SERKAN EYİMAYA) (TEPE BETOPAN YAPI MLZ.SAN.VE TİC.A.Ş.: ALÇI MAH. ASO 2. VE 3. O.S.B 2026 CAD. NO:12 --ANKARA)
Deneysel Talep Tarihi/No <i>Order Date / No</i>	: 28.09.2018 / 237780
Numunenin Tanımı (No,Cins, Marka, Tip, Tür, Model vb.) <i>Sample Description</i> (No,Type,Mark,Model etc.)	: 451601,ELYAF TAKVİYELİ ÇİMENTO LEVHA, TEPEPAN , KATEGORİ C , - , - , 5.00 adet 451601,FIBER CEMENT FLAT SHEET,TEPEPAN,CATEGORY C,-,-,5,00 item
Numune Kabul Tarihi <i>Test Item Receipt Date</i>	: 28.09.2018 Cert. Exp. Serkan EYİMAYA
Deneysel Yapıldığı Tarih <i>Date of Test</i>	: 26.09.2018 - 28.11.2018
Uygulanan Standard / Metod <i>Applied Standard/Method</i>	: TS EN ISO 1716:2011-01 Yapı ürünlerinin yangına tepki deneyleri - Yanma ısısının tayini (kalorifik değer) (ISO 1716:2010) TS EN ISO 1716:2011-01 Reaction to fire tests for products - Determination of the gross heat of combustion (calorific value) (ISO 1716:2010)
Raporun Sayfa Sayısı <i>Number of pages of the report</i>	: 3
Açıklamalar <i>Remarks</i>	:

Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği(EA) ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanınma antlaşmasını imzalamıştır.
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Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metodları bu raporun tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.
The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

Mühür
Seal



Deneysel Sorumlusu
Person in charge of tests

Arda ATAKOL
Arda ATAKOL
Deney Personeli
Testing Expert

Kontrol Eden
Reviewer

Sencer GÜVEN
Sencer GÜVEN
Teknik Şef
Technical Chief

Onaylayan
Approved by

Sencer GÜVEN
Sencer GÜVEN
Laboratuvar Müdürü V.
Laboratory Manager Dep.

Bu rapor, hazırlayan laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir.

Bu rapor, sadece deneyi yapılan numune için geçerlidir ve "Ürün Belgesi" yerine geçmez.

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This test report represents only tested sample(s), and shall not be used as Product Certificate



TEST RESULTS

TS EN ISO 1716:2011-01 Reaction to fire tests for products Determination of the gross heat of combustion

SPONSOR	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş. BİLKENT BEYTEPE KÖYÜ YOLU NO: 5 ÇANKAYA ANKARA
DEMANDED BY	TSE CONSTRUCTION MATERIALS SECTOR DIRECTORATE ANKARA
MANUFACTURER	TEPE BETOPAN YAPI MALZEMELERİ SAN. VE TİC. A.Ş. ALÇI MAH. ASO 2. VE 3 ORGANİZE SAN.BÖLGESİ 2026. CD NO:12/ ANKARA

Sample Details

ARRIVAL DATE	28.9.2018
TEST DATE	26.11.2018
GENERAL DESCRIPTION	Fiber reinforced cement board
TRADEMARK	TEPEPAN
MODEL	CATEGORY C
PRODUCT STANDARD	TS EN 12467:2016-12
PACKAGING	Wrapped in polyethylene film, in a cardboard
CONDITIONS AT ARRIVAL	Intact, cylindrical pieces with thicknesses 14 and 8 mm (30 pcs each).
INVESTIGATION NO	1859937
PURPOSE OF ANALYSIS	STANDARD REVISION AND CERTIFICATION SCOPE EXPANSION

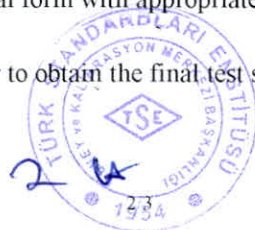
This report was translated to English from the original report in Turkish with TSE report number and date : 443772 / 12-18

Sample Collection and Preparation

The samples were selected, taken and delivered to the laboratory under monitoring of related TSE Certification Directorate experts.

The products were cut and prepared in cylindrical form with appropriate thickness by the manufacturer.

One of the pieces was crumbled in a brass mortar to obtain the final test sample in powder form.





TEST RESULTS

Conditioning

Standard, clause and criterion followed for conditioning: TS EN 13820:2004-01 clause 4.3 fixed period
Samples were conditioned in a conditioning chamber, at 23 °C ± 2 °C and %50 ± %5 relative humidity for 59 days

Deviation From the Test Method

There was no deviation from the test method

Test Results

Method	Crucible
Combustion aid	Benzoic Acid
Energy equivalent	932,982
An average gross total heat of combustion value was calculated from 3 consecutive test results. The determined values are expressed as follows.	

Sample	1	2	3	Average
Q _{pc} (MJ/kg)	0,5234	0,4596	0,5224	0,5018

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

End of test report.

