

**CLASSIFICATION OF REACTION TO FIRE IN
ACCORDANCE WITH EN 13501-1:2007+A1:2009**

Sponsor : TÜRK YTONG SAN. A.Ş.
Fevzi Çakmak Mah. Tevfik İleri Cad. No:95 34899
Pendik, İSTANBUL/TURKEY

Prepared by : EFFECTIS ERA AVRASYA TEST VE BELGELENDİRME
A.Ş.TOSB TAYSAD Organize San. Böl. 1. CD.
15. Yol No: 1 Şekerpınar - Çayırova
KOCAELİ, TURKEY

Product name : MULTIPOR THERMAL INSULATION SYSTEM

**Classification
report No.** : ERA - 17 - 069

Issue Number : 1/2

Date of issue : 21.04.2017

This classification report consists of 6 pages in total together with annex (Annex A) and may only be used or reproduced in its entirety.

1. INTRODUCTION

This classification report defines the classification assigned to “*MULTIPOR THERMAL INSULATION SYSTEM*” in accordance with the procedures given in EN 13501-1:2007+A1:2009

2. DETAILS OF CLASSIFIED PRODUCT

2.1. General:

The product *MULTIPOR THERMAL INSULATION SYSTEM* is defined as a „type of classified product“. Its classification is valid for the following end use application:

ETAG 004:2013 - Guideline for European Technical Approval of External Thermal Insulation Composite Systems with Rendering

2.2. Description:

The product *MULTIPOR THERMAL INSULATION SYSTEM* is fully described in the test reports in support of the classification listed in clause 3. The components of the system are described as indicated below:

MULTIPOR THERMAL INSULATION SYSTEM

Multipor Autoclaved Aerated Concrete Thermal Insulation Board: Density of autoclaved aerated concrete board is 104 kg/m^3 , thickness is 30 cm and mass per unit area of $31,2 \text{ kg/m}^2$.

Multipor Thermal Insulation Board Adhesive and Rendering: Density of cement based adhesive and rendering is $0,76 \text{ g/cm}^3$, total mass per unit area is 19 kg/m^2 . Mixing of A component (cement powder) and B component (water) is in proportion 25 kg : 10 kg.

Mesh: Mass per unit area of glass fiber mesh is 160 g/m^2 .

3. REPORTS AND RESULTS IN SUPPORT OF CLASSIFICATION

3.1. Reports

Name of laboratory	Name of sponsor	Report ref. no.	Test method and date Field of application rules and date
EFFECTIS ERA AVRASYA TEST VE BELGELENDİRME A.Ş.	TÜRK YTONG SAN. A.Ş.	FTST17265	EN ISO 1716:2010
		FTST17266	EN ISO 1716:2010
		FTST17267	EN ISO 1182:2010
		FTST17268	EN ISO 1716:2010
		FTST17269	EN ISO 1182:2010
		FTST17270	EXAP according to CEN/TS 15117:2005

3.2. Results

Test method	Parameter	Number of test	Results	
			Continuous parameter mean	Compliance parameters
EN ISO 1716	PCS [MJ/kg] ^(a)	3	-0,04	(-)
	PCS [MJ/kg] ^(b)		0,85	(-)
	PCS [MJ/kg] ^(c)		6,03	(-)
	PCS [MJ/m ²] ^(c)		0,96	(-)
	PCS [MJ/kg] ^(d)		0,34	(-)
EN ISO 1182 ^(a)	ΔT (°C)	5	4,82	(-)
	Δm (%)		17,9	(-)
	t_f (s)		0,0	(-)
EN ISO 1182 ^(b)	ΔT (°C)	5	2,89	(-)
	Δm (%)		12,9	(-)
	t_f (s)		0,0	(-)
(-): Not applicable		(a): Multipor Autoclaved Aerated Concrete Thermal Insulation Board		
Negative (-) values indicate that the material reacts as endothermic (heat absorbing) during the burning period.		(b): Multipor Thermal Insulation Board Adhesive and Rendering		
		(c): Mesh		
		(d): Product as whole		

Test method	Parameter	Parameter	Compliance parameters
EN ISO 1716	PCS [MJ/kg] ^(a)	-0,04	≤ 2 (A1)
	PCS [MJ/kg] ^(b)	0,85	≤ 2 (A1)
	PCS [MJ/kg] ^(c)	6,03	(-)
	PCS [MJ/m ²] ^(c)	0,96	≤ 1,4 (A1)
	PCS [MJ/kg] ^(d)	0,34	≤ 2 (A1)
EN ISO 1182 ^(a)	ΔT (°C)	4,82	≤ 30 (A1)
	Δm (%)	17,9	≤ 50 (A1)
	t_f (s)	0,0	= 0 (A1)
EN ISO 1182 ^(b)	ΔT (°C)	2,89	≤ 30 (A1)
	Δm (%)	12,9	≤ 50 (A1)
	t_f (s)	0,0	= 0 (A1)
(-): Not applicable		(a): Multipor Autoclaved Aerated Concrete Thermal Insulation Board	
Negative (-) values indicate that the material reacts as endothermic (heat absorbing) during the burning period.		(b): Multipor Thermal Insulation Board Adhesive and Rendering	
		(c): Mesh	
		(d): Product as whole	

4. CLASSIFICATION AND FIELD OF APPLICATION

4.1. Reference of classification

This classification has been carried out in accordance with the clauses 11.8.2 of EN 13501-1:2007+A1:2009

4.2. Classification

The product, *MULTIPOR THERMAL INSULATION SYSTEM*, in relation to its reaction to fire behaviour is classified:

A1

The additional classification in relation to smoke production is:

not classified

The additional classification in relation to flaming droplets / particles is:

not classified

The format of the reaction to fire classification for *MULTIPOR THERMAL INSULATION SYSTEM* is:

Fire behaviour		Smoke production			Flaming droplets	
A1	-	s	not classified	,	d	not classified

Reaction to fire classification: A1

4.3. Direct field of application

This classification is valid for the following product parameters:

- Multipor Autoclaved Aerated Concrete Thermal Insulation Board: density : 104 kg/m³, thickness : 30 cm, mass per unit area : 31,2 kg/m²
- Multipor Thermal Insulation Board Adhesive and Rendering: density : 0,76 g/cm³, total consumption: 19 kg/m², mixing ratio : A (powder) / B(water) is 25/10.
- Mesh: mass per unit area : 160 g/m²

4.4. Expanded Field of application

Component	Organic content (%)	Density	Thickness	Consumption	Compound
Multipor Autoclaved Aerated Concrete Thermal Insulation Board	≤ 1,00	≤ 104 kg/m ³	≤ 30 cm	≤ 31,2 kg/m ²	Cement, lime, silisium, cell-forming agent, water
Multipor Thermal Insulation Board Adhesive and Rendering	≤ 1,89	≤ 0,76 g/cm ³	-	≤ 19 kg/m ²	cement based
Mesh	-	-	-	≤ 160 g/m ²	glass fiber

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5. LIMITATIONS

5.1. Restrictions

This classification report is valid provided that the technical specifications of product are within the limits in accordance with the field of application clause 4.3.

5.2. Warning

This classification document does not represent type approval or certification of the product.

This report only evaluates the reaction to fire performance of the products specified in Clause 2 according to ETAG 004 annex D. It does not include other performance assessments mentioned in ETAG 004 and does not represent the ETAG 004 type approval document.

Signed:

Şahin SAKAT

Person in the charge of tests



Approved:

Onur DAĞ

Operation Manager

REACTION TO FIRE CLASSIFICATION REPORT No. ERA-17-069-ANNEX A

MULTIPOR THERMAL INSULATION SYSTEM**1) Multipor Autoclaved Aerated Concrete Thermal Insulation Board:**

- Density of autoclaved aerated concrete board is 104 kg/m^3 and thickness is 30 cm.
- Manufacturer: TÜRK YTONG SAN. A.Ş.
Subaşı Mah. Sivrikaya Sok. NO:18A/1 Çatalca, İSTANBUL/TURKEY

2) Multipor Thermal Insulation Board Adhesive and Rendering:

- Density of cement based adhesive and rendering is $0,76 \text{ g/cm}^3$, total mass per unit area is 19 kg/m^2 .
- Manufacturer: TÜRK YTONG SAN. A.Ş.
Fevzi Çakmak Mah. Tevfik İleri Cad. No:95 34899 Pendik, İSTANBUL/TURKEY

3) Mesh:

- Mass per unit area of glass fiber mesh is 160 g/m^2 .
- Manufacturer: TECHNICAL TEXTILES S.R.O
Beethovenova 16 921 01 PIESTANY/SLOVAK REPUBLIC



EFFECTIS ERA AVRASYA TEST VE BELGELENDİRME A.Ş.

Fire Test Laboratory

**EXPANDED APPLICATION REPORT
IN ACCORDANCE WITH EN 15725:2010**

Sponsor : TÜRK YTONG SAN. A.Ş.
Fevzi Çakmak Mah. Tevfik İleri Cad. No:95 34899
Pendik, İSTANBUL/TURKEY

Prepared by : EFFECTIS ERA AVRASYA TEST VE BELGELENDİRME A.Ş.
TOSB TAYSAD Organize San. Böl. 1. CD.
15. Yol No: 1 Şekerpınar - Çayırova
KOCAELİ, TURKEY

Product name : MULTIPOR THERMAL INSULATION SYSTEM

**Classification
report No.** : FTST17270

Issue Number : 1/2

Date of issue : 21.04.2017

This classification report consists of 8 pages and may only be used or reproduced in its entirety.

Address: TOSB TAYSAD Organize San. Böl. 1. CD. ,15. Yol No: 1 Şekerpınar - Çayırova
Kocaeli, TURKEY

Tel: 0262 6581662

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Web: www.effectis.com

1. INTRODUCTION

This extended application report concerns test results obtained in accordance with Test Method EN ISO 1716:2010 and EN ISO 1182:2010.

The extended application process is carried out in conformity with the following extended application standard: CEN/TS 15117: Guidance on direct and extended application.

The extended application process also applies rules, as defined in the following standard:

- ETAG 004:2013 Annex D

2. DETAILS OF CLASSIFIED PRODUCT

2.1. General:

MULTIPOR THERMAL INSULATION SYSTEM is defined as a "type of classified product". Its classification is valid for the following end use application:

ETAG 004:2013 - Guideline for European Technical Approval of External Thermal Insulation Composite Systems with Rendering

2.2. Description:

MULTIPOR THERMAL INSULATION SYSTEM is fully described in the test reports in support of the classification listed in clause 3.

MULTIPOR THERMAL INSULATION SYSTEM:

Multipor Autoclaved Aerated Concrete Thermal Insulation Board: Density of autoclaved aerated concrete board is 104 kg/m^3 , thickness is 30 cm and mass per unit area of $31,2 \text{ kg/m}^2$.

Multipor Thermal Insulation Board Adhesive and Rendering: Density of cement based adhesive and rendering is $0,76 \text{ g/cm}^3$, total mass per unit area is 19 kg/m^2 . Mixing of A component (cement powder) and B component (water) is in proportion 25 kg : 10 kg.

Mesh: Mass per unit area of glass fiber mesh is 160 g/m^2 .

3. EXTENDED APPLICATION REPORTS AND RESULTS IN SUPPORT OF CLASSIFICATION

3.1. Reports

Name of laboratory	Name of sponsor	Test report ref. no.	Date
EFFECTIS ERA AVRASYA TEST VE BELGELENDİRME A.Ş.	TÜRK YTONG SAN. A.Ş.	FTST17265	21.04.2017
		FTST17266	
		FTST17267	
		FTST17268	
		FTST17269	

3.2. Test Samples

Test report ref. no.	Sampling procedure	Conditioning	Number of samples tested
FTST17265	The samples were delivered by sponsor	EN 13238:2010 Article 4.3.c, (23 ± 2) °C temperature and % (50 ± 5) humidity.	3
FTST17266	The samples were delivered by sponsor	EN 13238:2010 Article 4.2, (23 ± 2) °C temperature and % (50 ± 5) humidity.	3
FTST17267	The samples were delivered by sponsor	EN 13238:2010 Article 4.2, (23 ± 2) °C temperature and % (50 ± 5) humidity.	5
FTST17268	The samples were delivered by sponsor	EN 13238:2010 Article 4.2, (23 ± 2) °C temperature and % (50 ± 5) humidity.	3
FTST17269	The samples were delivered by sponsor	EN 13238:2010 Article 4.2, (23 ± 2) °C temperature and % (50 ± 5) humidity.	5

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3.3. Test Results

Test method	Parameter	Number of test	Results	
			Continuous parameter mean	Compliance parameters
EN ISO 1716	PCS [MJ/kg] ^(a)	3	-0,04	(-)
	PCS [MJ/kg] ^(b)		0,85	(-)
	PCS [MJ/kg] ^(c)		6,03	(-)
	PCS [MJ/m ²] ^(c)		0,96	(-)
	PCS [MJ/kg] ^(d)		0,34	(-)
EN ISO 1182 ^(a)	ΔT (°C)	5	4,82	(-)
	Δm (%)		17,9	(-)
	t_f (s)		0,0	(-)
EN ISO 1182 ^(b)	ΔT (°C)	5	2,89	(-)
	Δm (%)		12,9	(-)
	t_f (s)		0,0	(-)

(-): Not applicable

Negative (-) values indicate that the material reacts as endothermic (heat absorbing) during the burning period.

(a): Multipor Autoclaved Aerated Concrete Thermal Insulation Board

(b): Multipor Thermal Insulation Board Adhesive and Rendering

(c): Mesh

(d): Product as whole

Test method	Parameter	Parameter	Compliance parameters
EN ISO 1716	PCS [MJ/kg] ^(a)	-0,04	≤ 2 (A1)
	PCS [MJ/kg] ^(b)	0,85	≤ 2 (A1)
	PCS [MJ/kg] ^(c)	6,03	(-)
	PCS [MJ/m ²] ^(c)	0,96	≤ 1,4 (A1)
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EN ISO 1182 ^(a)	ΔT (°C)	4,82	≤ 30 (A1)
	Δm (%)	17,9	≤ 50 (A1)
	t_f (s)	0,0	= 0 (A1)
EN ISO 1182 ^(b)	ΔT (°C)	2,89	≤ 30 (A1)
	Δm (%)	12,9	≤ 50 (A1)
	t_f (s)	0,0	= 0 (A1)
(-): Not applicable Negative (-) values indicate that the material reacts as endothermic (heat absorbing) during the burning period.		(a): Multipor Autoclaved Aerated Concrete Thermal Insulation Board (b): Multipor Thermal Insulation Board Adhesive and Rendering (c): Mesh (d): Product as whole	

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4. EXTENDED APPLICATION

4.1. Principles applied for the extension of the field of application

This extended application procedure is based on:

Method 1: Established influence(s) of product and end use parameters in accordance with:

CEN/TS 15117:2005, Annex A

ETAG 004:2013 Annex D

4.2. Procedure

Product Name	Organic content	Density	Thickness	Consumption
MULTIPOR THERMAL INSULATION SYSTEM	Highest organic content	Highest density	Highest thickness	Highest consumption

4.3. Extended application results

4.3.1 Application range- product family

Component	Organic content (%)	Density	Thickness	Consumption	Compound
Multipor Autoclaved Aerated Concrete Thermal Insulation Board	$\leq 1,00$	$\leq 104 \text{ kg/m}^3$	$\leq 30 \text{ cm}$	$\leq 31,2 \text{ kg/m}^2$	Cement, lime, silisium, cell-forming agent, water
Multipor Thermal Insulation Board Adhesive and Rendering	$\leq 1,89$	$\leq 0,76 \text{ g/cm}^3$	-	$\leq 19 \text{ kg/m}^2$	cement based
Mesh	-	-	-	$\leq 160 \text{ g/m}^2$	glass fiber

4.3.2 Fire performance parameters

MULTIPOR THERMAL INSULATION SYSTEM (Mesh component) – EN ISO 1716

MEASURED VALUES AND THE TEST RESULTS					
Fire technical characteristics	Measured values			Results	Expanded uncertainty
	1st	2nd	3rd		
PCS [MJ/kg]	6,10	6,05	5,93	6,03	0,19
PCS [MJ/m ²]	0,98	0,97	0,95	0,96	0,16
(-): not applicable					

MULTIPOR THERMAL INSULATION SYSTEM (Multipor Autoclaved Aerated Concrete Thermal Insulation Board component) – EN ISO 1716

MEASURED VALUES AND THE TEST RESULTS					
Fire technical characteristics	Measured values			Results	Expanded uncertainty
	1st	2nd	3rd		
PCS [MJ/kg]	-0,07	-0,06	-0,01	-0,04	0,17
(-): not applicable					

MULTIPOR THERMAL INSULATION SYSTEM (Multipor Autoclaved Aerated Concrete Thermal Insulation Board component) – EN ISO 1182

MEASURED VALUES AND THE TEST RESULTS							
Test sample no.	1	2	3	4	5	Ø	Expanded uncertainty
Test date	17.04	17.04	17.04	17.04	17.04		
$\Delta T_{\text{furnace}}$ [°C]	1,67	2,24	1,27	18,16	0,76	4,82	6,7
ΔT_{center} [°C]	(-)	(-)	(-)	(-)	(-)	(-)	(-)
$\Delta T_{\text{surface}}$ [°C]	(-)	(-)	(-)	(-)	(-)	(-)	(-)
t_f [s]	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Δm [%]	18,0	18,2	18,1	17,2	17,9	17,9	0,5
(-): not applicable							
Negative (-) values indicate that the material reacts as endothermic (heat absorbing) during the burning period.							

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MULTIPOR THERMAL INSULATION SYSTEM ("Multipor Thermal Insulation Board Adhesive and Rendering" component) – EN ISO 1716

MEASURED VALUES AND THE TEST RESULTS					
Fire technical characteristics	Measured values			Results	Expanded uncertainty
	1st	2nd	3rd		
PCS [MJ/kg]	0,83	0,95	0,78	0,85	0,19
(-): not applicable					

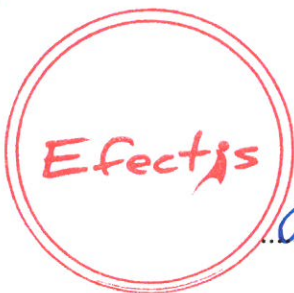
MULTIPOR THERMAL INSULATION SYSTEM ("Multipor Thermal Insulation Board Adhesive and Rendering" component) – EN ISO 1182

MEASURED VALUES AND THE TEST RESULTS							
Test sample no.	1	2	3	4	5	Ø	Expanded uncertainty
Test date	18.04	18.04	18.04	18.04	18.04		
$\Delta T_{\text{furnace}}$ [°C]	2,65	0,52	9,15	1,20	0,92	2,89	3,3
ΔT_{center} [°C]	(-)	(-)	(-)	(-)	(-)	(-)	(-)
$\Delta T_{\text{surface}}$ [°C]	(-)	(-)	(-)	(-)	(-)	(-)	(-)
t_f [s]	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Δm [%]	13,9	15,1	10,6	13,0	12,1	12,9	1,6
(-): not applicable							

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4.3.3 Additional statement

The extended application results relate to the behaviour of a product/product family 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/product family in use.

Signed:  Şahin SAKAT Person in the charge of tests		Approved:  Onur DAĞ Operation Manager
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TÜRK AKREDİTASYON KURUMU
TURKISH ACCREDITATION AGENCY
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EFFECTIS ERA AVRASYA TEST VE BELGELENDİRME A.Ş.

TOSB TAYSAD Organize San. Böl. 1. CD. ,15. Yol No: 1

Şekerpınar – Çayırova, KOCAELİ

DENEY RAPORU

TEST REPORT

AB-0556-T

FTST17266

21.04.2017

Müşterinin adı/adresi : TÜRK YTONG SAN. A.Ş.
Customer name/address : Fevzi Çakmak Mah. Tevfik İleri Cad. No:95 34899 Pendik, İSTANBUL/TURKEY

İstek numarası : EEA-17-000276
Order No.

Numunenin adı ve tarifi : MULTIPOR THERMAL INSULATION SYSTEM
Name and identity of test sample (Multipor Autoclaved Aerated Concrete Thermal Insulation Board component)

Numunenin kabul tarihi : 17.03.2017
The date of receipt of sample

Açıklamalar :
Remarks

Deneyin yapıldığı tarih : 17.04.2017
Date of test

Raporun sayfa sayısı : 3
Number of pages of the Report

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 sertifikanın 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 test

Operasyon Müdürü
Operation Manager



21.04.2017

Şahin SAKAT

Onur DAĞ

Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

İmzasız ve mühürlü raporlar geçersizdir.

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TEST REPORT

on Fire and Technical Characteristics

Our ref.: EEA-17-000276

Sponsor: TÜRK YTONG SAN. A.Ş.

Fevzi Çakmak Mah. Tevfik İleri Cad. No:95 34899 Pendik, İSTANBUL/TURKEY

TEST ITEM

Product name : MULTIPOR THERMAL INSULATION SYSTEM

(Multipor Autoclaved Aerated Concrete Thermal Insulation Board component)

Manufacturer : TÜRK YTONG SAN. A.Ş.

Subaşı Mah. Sivrikaya Sok. NO:18A/1 Çatalca, İSTANBUL/TURKEY

Composition : Cement, lime, silisium, cell-forming agent, water

Appearance : Test specimens were prepared from autoclaved aerated concrete board which has density of 104 kg/m³, thickness of 30 cm and mass per unit area of 31,2 kg/m².

Date of receipt of the sample: 17.03.2017

Sampling: The samples were delivered by the sponsor

Date of realization of tests: 17.04.2017

TEST METHOD: EN ISO 1716:2010

Conditioning: According to the EN 13238:2010, Article 4.2, (23 ± 2) °C and % (50 ± 5) relative humidity.

Water equivalent of the calorimeter: 2390,7060 MJ/K

MEASURED VALUES AND THE TEST RESULTS

Fire technical characteristics	Measured values			Results	Expanded uncertainty
	1 st	2 nd	3 rd		
PCS [MJ/kg]	-0,07	-0,06	-0,01	-0,04	0,17

(-): not applicable

Negative (-) values indicate that the material reacts as endothermic (heat absorbing) during the burning period.

Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

İmzasız ve mühürlü raporlar geçersizdir.

This report shall not be reproduced other than in full except with the permission of the laboratory. Testing reports without signature and seal are not valid



Conclusion:

The mentioned expanded uncertainty is obtained by multiplying the standard uncertainty by a coverage factor $k=2$, which corresponded to a level of confidence of 95 %.

The test results relate to the behaviour of the test specimen 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 of use. The results of tests are concerned only with the subject of testing.

The protocol shall not be reproduced except in full without the written approval of the testing laboratory.

Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

İmzasız ve mühürlü raporlar geçersizdir.

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TÜRK AKREDİTASYON KURUMU
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EFFECTIS ERA AVRASYA TEST VE BELGELENDİRME A.Ş.

TOSB TAYSAD Organize San. Böl. 1. CD. ,15. Yol No: 1

Şekerpınar – Çayırova, KOCAELİ

DENEY RAPORU

TEST REPORT

AB-0556-T

FTST17267

21.04.2017

Müşterinin adı/adresi

Customer name/address

: TÜRK YTONG SAN. A.Ş.

Fevzi Çakmak Mah. Tevfik İleri Cad. No:95 34899 Pendik, İSTANBUL/TURKEY

İstek numarası

Order No.

: EEA-17-000276

Numunenin adı ve tarifi

Name and identity of test sample

: MULTIPOR THERMAL INSULATION SYSTEM

(Multipor Autoclaved Aerated Concrete Thermal Insulation Board component)

Numunenin kabul tarihi

The date of receipt of sample

: 17.03.2017

Açıklamalar

Remarks

:

Deneyin yapıldığı tarih

Date of test

: 17.04.2017

Raporun sayfa sayısı

Number of pages of the Report

: 3 (4 pages including appendixes)

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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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 test

Operasyon Müdürü

Operation Manager



21.04.2017

Şahin SAKAT

Onur DAĞ

Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

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TEST REPORT

on Fire and Technical Characteristics

Our ref.: EEA-17-000264

Sponsor: TÜRK YTONG SAN. A.Ş.

Fevzi Çakmak Mah. Tevfik İleri Cad. No:95 34899 Pendik, İSTANBUL/TURKEY

TEST ITEM

Product name : MULTIPOR THERMAL INSULATION SYSTEM

(Multipor Autoclaved Aerated Concrete Thermal Insulation Board component)

Manufacturer : TÜRK YTONG SAN. A.Ş.

Subaşı Mah. Sivrikaya Sok. NO:18A/1 Çatalca, İSTANBUL/TURKEY

Composition : Cement, lime, silisium, cell-forming agent, water

Appearance : Cylindrical test specimens in dimensions of ca 45 mm diameter and ca. 50 mm height were prepared from autoclaved aerated concrete board which has density of 104 kg/m³, thickness of 30 cm and mass per unit area of 31,2 kg/m².

Date of receipt of the sample: 17.03.2017 **Sampling:** The samples were delivered by the sponsor

Date of realization of tests: 17.04.2017

TEST METHOD: EN ISO 1182:2010

Calibration results: See appendix 1

Conditioning: According to the EN 13238:2010, Article 4.2, (23 ± 2) °C and % (50 ± 5) relative humidity.

MEASURED VALUES AND TEST RESULTS

Test sample no.	1	2	3	4	5	Ø	Expanded uncertainty
Test date	17.04	17.04	17.04	17.04	17.04		
ΔT _{furnace} [°C]	1,67	2,24	1,27	18,16	0,76	4,82	6,7
ΔT _{center} [°C]	(-)	(-)	(-)	(-)	(-)	(-)	(-)
ΔT _{surface} [°C]	(-)	(-)	(-)	(-)	(-)	(-)	(-)
t _f [s]	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Δm [%]	18,0	18,2	18,1	17,2	17,9	17,9	0,5

Behaviour during the tests: No flaming on the samples was observed.

Annotation : (-): data was not determined / measured

Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

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Conclusion:

The product “*MULTIPOR THERMAL INSULATION SYSTEM (Multipor Autoclaved Aerated Concrete Thermal Insulation Board component)*” gives the average furnace thermocouple temperature rise 4,82 °C, the average mass loss % 17,9 and the mean duration of sustained flaming 0 s. The mentioned expanded uncertainty is obtained by multiplying the standard uncertainty by a coverage factor $k=2$, which corresponded to a level of confidence of 95 %.

The test results relate to the behaviour of the test specimen 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 of use. The results of tests are concerned only with the subject of testing.

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Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

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Date of calibration: 23 May 2014

Furnace wall temperature [°C]:

Vertical axis	a 30 mm	Level	b 0 mm	c -30 mm
1	757,4	755,5	736,7	
2	757,3	758,8	734,5	
3	760,2	756,2	735,0	

T avg = 750,2 °C

T avg.axis1 =

T avg.axis2 =

T avg.axis3 =

T dev.axis1 =

T dev.axis2 =

T dev.axis3 =

T avg.dev.axis = 0,03

T avg.level a =

T avg.level b =

T avg.level c =

T dev.level a =

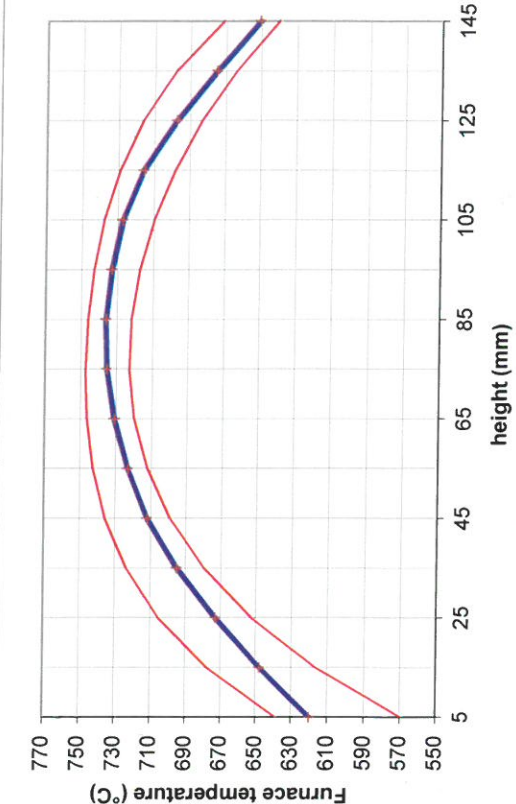
T dev.level b =

T dev.level c =

T avg.dev.level = 1,31

Furnace height [mm]	T min [°C]	T max [°C]	T down [°C]	T up [°C]	T avg [°C]
145	639,4	671,0	653,4	647,3	650,4
135	663,5	697,5	674,7	670,3	674,7
125	682,8	716,1	697,2	696,9	697,2
115	697,9	728,9	714,9	716,7	715,8
105	709,3	737,4	726,4	728,5	727,5
95	717,3	742,8	732,5	733,8	733,2
85	721,8	745,9	736,1	736,2	736,2
75	722,7	747,0	735,6	735,1	735,4
65	719,6	746,0	730,6	731,3	730,9
55	711,9	742,5	724,1	732,3	723,3
45	698,8	735,5	712,4	711,7	712,0
35	679,3	723,5	691,3	698,6	695,0
25	652,2	705,0	672,2	673,5	672,9
15	616,2	677,5	645,3	650,0	647,6
5	569,5	638,6	619,9	619,3	619,6

Furnace temperature
profile:



E-Factory



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EFFECTIS ERA AVRASYA TEST VE BELGELENDİRME A.Ş.

TOSB TAYSAD Organize San. Böl. 1. CD. ,15. Yol No: 1

Şekerpınar – Çayırova, KOCAELİ

DENEY RAPORU

TEST REPORT

AB-0556-T

FTST17269

21.04.2017

Müşterinin adı/adresi

Customer name/address

: TÜRK YTONG SAN. A.Ş.

Fevzi Çakmak Mah. Tefik İleri Cad. No:95 34899 Pendik, İSTANBUL/TURKEY

İstek numarası

Order No.

: EEA-17-000276

Numunenin adı ve tarifi

Name and identity of test sample

: MULTIPOR THERMAL INSULATION SYSTEM

("Multipor Thermal Insulation Board Adhesive and Rendering" component)

Numunenin kabul tarihi

The date of receipt of sample

: 17.03.2017

Açıklamalar

Remarks

:

Deneyin yapıldığı tarih

Date of test

: 18.04.2017

Raporun sayfa sayısı

Number of pages of the Report

: 3 (4 pages including appendixes)

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Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metodları bu sertifikanın 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 test

Operasyon Müdürü

Operation Manager



21.04.2017

Şahin SAKAT

Onur DAĞ

Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

İmzasız ve mühürsüz raporlar geçersizdir.

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TEST REPORT

on Fire and Technical Characteristics

Our ref.: EEA-17-000264

Sponsor: TÜRK YTONG SAN. A.Ş.

Fevzi Çakmak Mah. Tevfik İleri Cad. No:95 34899 Pendik, İSTANBUL/TURKEY

TEST ITEM

Product name : MULTIPOR THERMAL INSULATION SYSTEM ("Multipor Thermal Insulation Board Adhesive and Rendering" component)

Manufacturer : TÜRK YTONG SAN. A.Ş.

Fevzi Çakmak Mah. Tevfik İleri Cad. No:95 34899 Pendik, İSTANBUL/TURKEY

Composition : Cement, lime, silisium, cell-forming agent, water

Appearance : Cylindrical test specimens in dimensions of ca 45 mm diameter and ca. 50 mm height were prepared from adhesive and rendering mortar which has the density of 0,76 g/cm³ and total consumption of 19 kg/m². Test samples were prepared by mixing A component (cement powder) and B component (water) in proportion 25 kg : 10 kg.

Date of receipt of the sample: 17.03.2017 **Sampling:** The samples were delivered by the sponsor

Date of realization of tests: 18.04.2017

TEST METHOD: EN ISO 1182:2010

Calibration results: See appendix 1

Conditioning: According to the EN 13238:2010, Article 4.2, (23 ± 2) °C and % (50 ± 5) relative humidity.

MEASURED VALUES AND TEST RESULTS

Test sample no.	1	2	3	4	5	Ø	Expanded uncertainty
Test date	18.04	18.04	18.04	18.04	18.04		
ΔT _{furnace} [°C]	2,65	0,52	9,15	1,20	0,92	2,89	3,3
ΔT _{center} [°C]	(-)	(-)	(-)	(-)	(-)	(-)	(-)
ΔT _{surface} [°C]	(-)	(-)	(-)	(-)	(-)	(-)	(-)
t _f [s]	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Δm [%]	13,9	15,1	10,6	13,0	12,1	12,9	1,6

Behaviour during the tests: No flaming on the samples was observed.

Annotation : (-): data was not determined / measured

Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

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Conclusion:

The product “*MULTIPOR THERMAL INSULATION SYSTEM (Multipor Thermal Insulation Board Adhesive and Rendering component)*” gives the average furnace thermocouple temperature rise 2,89 °C, the average mass loss % 12,9 and the mean duration of sustained flaming 0 s. The mentioned expanded uncertainty is obtained by multiplying the standard uncertainty by a coverage factor $k=2$, which corresponded to a level of confidence of 95 %.

The test results relate to the behaviour of the test specimen 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 of use. The results of tests are concerned only with the subject of testing.

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Date of calibration: 23 May 2014

Furnace wall temperature [°C]:

Vertical axis	a 30 mm	b 0 mm	c -30 mm
1	757,4	755,5	736,7
2	757,3	758,8	734,5
3	760,2	756,2	735,0

T avg = 750,2 °C

T avg.axis1 = 749,8 °C

T avg.axis2 = 750,2 °C

T avg.axis3 = 750,4 °C

T dev.axis1 = 0,043 %

T dev.axis2 = 0,006 %

T dev.axis3 = 0,037 %

T avg.dev.axis = 0,03 %

T avg.level a = 758,3 °C

T avg.level b = 756,8 °C

T avg.level c = 735,4 °C

T dev.level a = 1,085 %

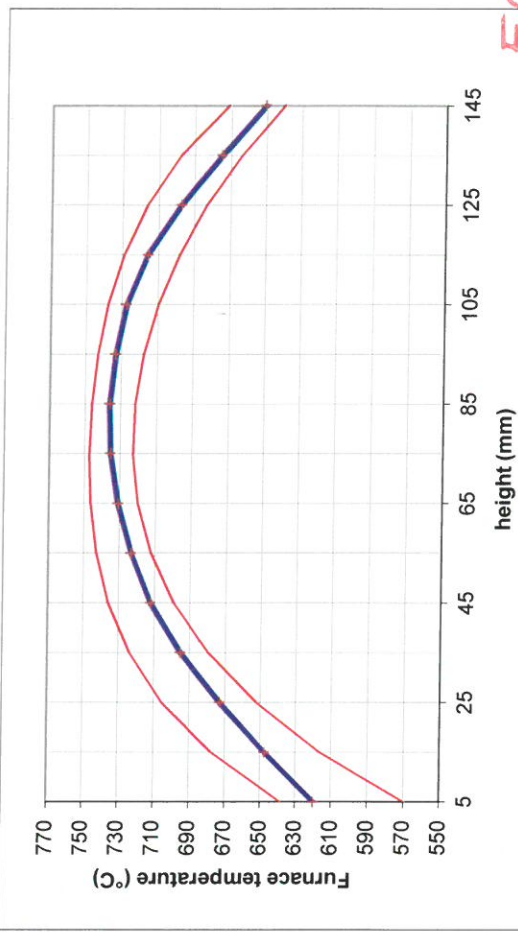
T dev.level b = 0,884 %

T dev.level c = 1,969 %

T avg.dev.level = 1,31 %

Furnace height [mm]	T min [°C]	T max [°C]	T down [°C]	T up [°C]	T avg [°C]
145	639,4	671,0	653,4	647,3	650,4
135	663,5	697,5	674,7	670,3	674,7
125	682,8	716,1	697,2	696,9	697,2
115	697,9	728,9	714,9	716,7	715,8
105	709,3	737,4	726,4	728,5	727,5
95	717,3	742,8	732,5	733,8	733,2
85	721,8	745,9	736,1	736,2	736,2
75	722,7	747,0	735,6	735,1	735,4
65	719,6	746,0	730,6	731,3	730,9
55	711,9	742,5	724,1	732,3	723,3
45	698,8	735,5	712,4	711,7	712,0
35	679,3	723,5	691,3	698,6	695,0
25	652,2	705,0	672,2	673,5	672,9
15	616,2	677,5	645,3	650,0	647,6
5	569,5	638,6	619,9	619,3	619,6

Furnace temperature profile:



E-Cell



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EFFECTIS ERA AVRASYA TEST VE BELGELENDİRME A.Ş.

TOSB TAYSAD Organize San. Böl. 1. CD. ,15. Yol No: 1

Şekerpınar – Çayırova, KOCAELİ

DENEY RAPORU

TEST REPORT

AB-0556-T

FTST17268

21.04.2017

Müşterinin adı/adresi : TÜRK YTONG SAN. A.Ş.
Customer name/address : Fevzi Çakmak Mah. Tevfik İleri Cad. No:95 34899 Pendik, İSTANBUL/TURKEY

İstek numarası : EEA-17-000276
Order No.

Numunenin adı ve tarifi : MULTIPOR THERMAL INSULATION SYSTEM
Name and identity of test sample ("Multipor Thermal Insulation Board Adhesive and Rendering" component)

Numunenin kabul tarihi : 17.03.2017
The date of receipt of sample

Açıklamalar :
Remarks

Deneyin yapıldığı tarih : 18.04.2017
Date of test

Raporun sayfa sayısı : 3
Number of pages of the Report

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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 test

Operasyon Müdürü
Operation Manager

21.04.2017

Şahin SAKAT

Onur DAĞ

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TEST REPORT

on Fire and Technical Characteristics

Our ref.: EEA-17-000276

Sponsor: TÜRK YTONG SAN. A.Ş.

Fevzi Çakmak Mah. Tevfik İleri Cad. No:95 34899 Pendik, İSTANBUL/TURKEY

TEST ITEM

Product name : MULTIPOR THERMAL INSULATION SYSTEM

("Multipor Thermal Insulation Board Adhesive and Rendering" component)

Manufacturer : TÜRK YTONG SAN. A.Ş.

Fevzi Çakmak Mah. Tevfik İleri Cad. No:95 34899 Pendik, İSTANBUL/TURKEY

Composition : Cement based adhesive and rendering

Appearance : Test specimens were prepared from adhesive and rendering mortar which has the density of 0,76 g/cm³ and total consumption of 19 kg/m². Test samples were prepared by mixing A component (cement powder) and B component (water) in proportion 25 kg : 10 kg.

Date of receipt of the sample: 17.03.2017

Sampling: The samples were delivered by the sponsor

Date of realization of tests: 18.04.2017

TEST METHOD: EN ISO 1716:2010

Conditioning: According to the EN 13238:2010, Article 4.2, (23 ± 2) °C and % (50 ± 5) relative humidity.

Water equivalent of the calorimeter: 2390,7060 MJ/K

MEASURED VALUES AND THE TEST RESULTS

Fire technical characteristics	Measured values			Results	Expanded uncertainty
	1 st	2 nd	3 rd		
PCS [MJ/kg]	0,83	0,95	0,78	0,85	0,19

(-): not applicable

Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

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Conclusion:

The mentioned expanded uncertainty is obtained by multiplying the standard uncertainty by a coverage factor $k=2$, which corresponded to a level of confidence of 95 %.

The test results relate to the behaviour of the test specimen 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 of use. The results of tests are concerned only with the subject of testing.

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Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

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EFFECTIS ERA AVRASYA TEST VE BELGELENDİRME A.Ş.

TOSB TAYSAD Organize San. Böl. 1. CD. ,15. Yol No: 1

Şekerpınar – Çayırova, KOCAELİ

DENEY RAPORU

TEST REPORT

AB-0556-T

FTST17265

21.04.2017

Müşterinin adı/adresi : TÜRK YTONG SAN. A.Ş.
Customer name/address : Fevzi Çakmak Mah. Tefvik İleri Cad. No:95 34899 Pendik, İSTANBUL/TURKEY

İstek numarası : EEA-17-000238
Order No.

Numunenin adı ve tarifi : MULTIPOR THERMAL INSULATION SYSTEM (Mesh component)
Name and identity of test sample

Numunenin kabul tarihi : 17.03.2017
The date of receipt of sample

Açıklamalar :
Remarks

Deneyin yapıldığı tarih : 03.04.2017
Date of test

Raporun sayfa sayısı : 3
Number of pages of the Report

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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 test

Operasyon Müdürü
Operation Manager

21.04.2017

Şahin SAKAT

Onur DAĞ

Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

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TEST REPORT

on Fire and Technical Characteristics

Our ref.: EEA-17-000238

Sponsor: TÜRK YTONG SAN. A.Ş.

Fevzi Çakmak Mah. Tevfik İleri Cad. No:95 34899 Pendik, İSTANBUL/TURKEY

TEST ITEM

Product name : MULTIPOR THERMAL INSULATION SYSTEM (Mesh component)

Manufacturer : TECHNICAL TEXTILES S.R.O

Beethovenova 16 921 01 PIESTANY/SLOVAK REPUBLIC

Composition : Glass fiber

Appearance : Test specimens were prepared from glass fiber mesh which has mass per unit area of 160 g/m².

Date of receipt of the sample: 17.03.2017

Sampling: The samples were delivered by the sponsor

Date of realization of tests: 03.04.2017

TEST METHOD: EN ISO 1716:2010

Conditioning: According to the EN 13238:2010, Article 4.3.c, (23 ± 2) °C and % (50 ± 5) relative humidity.

Water equivalent of the calorimeter: 2390,7060 MJ/K

MEASURED VALUES AND THE TEST RESULTS

Fire technical characteristics	Measured values			Results	Expanded uncertainty
	1 st	2 nd	3 rd		
PCS [MJ/kg]	6,10	6,05	5,93	6,03	0,19
PCS [MJ/m ²]	0,98	0,97	0,95	0,96	0,16

(-): not applicable



Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

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Conclusion:

The mentioned expanded uncertainty is obtained by multiplying the standard uncertainty by a coverage factor $k=2$, which corresponded to a level of confidence of 95 %.

The test results relate to the behaviour of the test specimen 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 of use. The results of tests are concerned only with the subject of testing.

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