EFECTIS ERA AVRASYA

Fire Test Laboratory

Accredited Body
No: AB-0556-T

Test
TS EN ISO/IEC 17025
AB-0556-T

CLASSIFICATION OF FIRE RESISTANCE PERFORMANCE

IN ACCORDANCE WITH EN 13501-2:2016

Sponsor : AKKİM YAPI KİMYASALLARI SAN. VE TİC. A.Ş.
Yeşilbayır Mah. Şimşir Sokak No:22 Hadımköy-
İSTANBUL/TURKEY

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

Product name : Linear joint seals for wall application:
820/820P - POLYURETHANE FOAM
P636 - POLYURETHANE SEALANT
AC607 FIRESTOP - ACRYLIC SEALANT

Classification report No. : EEA - 17 – 020 – Rev1

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1. INTRODUCTION

This classification report defines the classification in accordance with the procedures given in EN 13501-2:2016, assigned to Liner joint seals for wall application; **820/820P –** Polyurethane foam, **P636** - Polyurethane sealant**, AC607 FIRESTOP -** Acrylic sealant.

2. DETAILS OF CLASSIFIED PRODUCT

2.1. General:

The elements, Liner joint seals for wall application; **820/820P –** Polyurethane foam, **P636** - Polyurethane sealant**, AC607 FIRESTOP -** Acrylic sealant are defined as type of product.

2.2. Description:

Liner joint seals for wall application; **820/820P –** Polyurethane foam, **P636** - Polyurethane sealant**, AC607 FIRESTOP -** Acrylic sealant are fully described below.

2.2.1. General

Product identification	: Liner joint seals for wall application; **820/820P –** Polyurethane foam, **P636** - Polyurethane sealant**, AC607 FIRESTOP -** Acrylic sealant
Manufacturer	: AKKİM YAPI KİMYASALLARI SAN. VE TİC. A.Ş. Yeşilbayır Mah. Şimşir Sokak No:22 Hadımköy- İSTANBUL/TURKEY
Sponsor of test	: AKKİM YAPI KİMYASALLARI SAN. VE TİC. A.Ş. Yeşilbayır Mah. Şimşir Sokak No:22 Hadımköy- İSTANBUL/TURKEY

2.2.2. Construction

The specimens were filled into the joints of aerated concrete wall system.

The supporting construction was supplied by the test laboratory (Efectis Era Avrasya) and consisted of aerated concrete blocks which have a density of 650 kg/m^3 and thickness of 200 mm.

Details of the joints are mentioned below:

- Aerated concrete – horizontal joints:
  - Joint width : 10 (2 joint), 11, 20, 21, 30 mm
  - Joint length : 900 mm.

See figure 1 for joint locations.

2.2.3. Components

2.2.3.1. Joint seals

- Type: 820/820P AKFIX – Polyurethane prepolymer based foam
  - *Nominal specific gravity: 19 kg/m3*
  - *Fire class according to DIN 4102: B1*
- Type: P636 AKFIX– Polyurethane based sealant
  - *Nominal specific gravity: 1,25 g/ml*

- *Nominal tensile strength: 2,0 N/mm²*

- Type: AC607 FIRESTOP AKFIX– Water based acrylic sealant
  - *Nominal specific gravity: 1,58 g/ml*
  - *Nominal tensile strength: 0,4 N/mm².*

2.2.3.2. Backing material

Ceramic wool was used as backing material for Specimen nr.4.

- Type: Ceramic wool
  - *Nominal density: 128 kg/m³*
  - *Location : Between the PU sealants for Specimen nr.4.*

See table 1 for the details of the specimen.

Table 1: Details of the specimens.

Specimen Nr.	Joint seal	Gap width (mm)	Seal depth (mm)	Backing material & depth (mm)	Orientation
1	820/820P PU FOAM	30	200	-	Horizontal
2	820/820P PU FOAM	10	200	-	Horizontal
3	P636 PU SEALANT	11	10 + 10	-	Horizontal
4	P636 PU SEALANT	21	10 +10	Ceramic wool - 180	Horizontal
5	AC607 FIRE STOP ACRYLIC SEALANT	10	20 + 20	-	Horizontal
6	AC607 FIRE STOP ACRYLIC SEALANT	20	20 + 20	-	Horizontal

For further information, see figures 1-4.

3. REPORTS AND RESULTS IN SUPPORT OF CLASSIFICATION

3.1. Reports

Name of laboratory	Name of sponsor	Test report ref. no.	Test method
EFECTIS ERA AVRASYA Test ve Belgelendirme A.Ş	AKKİM YAPI KİMYASALLARI SAN. VE TİC. A.Ş.	RFTR 17028	EN 1366-4:2006 +A1:2010

3.2. Results

Specimen Nr.	**Criteria**		
	Integrity (E)		**Insulation (I)**
	Cotton Pad	Flames longer than 10.s	
1	147th minute	Not observed	147th minute*
2	217th minute	Not observed	217th minute*
3	No failure	Not observed	No failure
4	No failure	Not observed	No failure
5	No failure	Not observed	No failure
6	No failure	Not observed	No failure
*: Insulation criteria failed due to failure of Integrity.			
The heating was terminated at 240 minutes after consulted with the sponsor.			

4. CLASSIFICATION AND FIELD OF APPLICATION

4.1. Reference of classification

This classification has been carried out in accordance with clause 7.5.9 of EN 13501-2:2016.

4.2. Classification

Liner joint seals for wall application; **820/820P –** Polyurethane foam, **P636** - Polyurethane sealant, **AC607 FIRESTOP -** Acrylic sealant are classified according to the following combinations of performance parameters and classes:

R	E	I	W		t	t	-	M	S	C	IncSlow	sn	ef	r

FIRE RESISTANCE CLASSIFICATION	
Specimen nr.	**Classification**
1	**EI 120 – T – X – W 10 to 30**
2	**EI 180 – T – X – W 10**
3	**EI 240 – T – X – W11**
4	**EI 240 – T – X – W 11 to 21**
5	**EI 240 – T – X – W 10**
6	**EI 240 – T – X – W 10 to 20**

The classes obtained for the linear joint seals are specified by the letters indicating the test conditions as given in table below:

Test conditions	Designation
Specimen orientation: • Horizontal supporting construction • Vertical supporting construction – vertical joint • Vertical supporting construction – horizontal joint	 H V T
Movement capability: No movement Movement induced (in %)	 X M000
Type of splices: Manufactured Field Both manufactured and field	 M F B
Joint widths range (in mm)	W00 to 99

4.3. Field of application

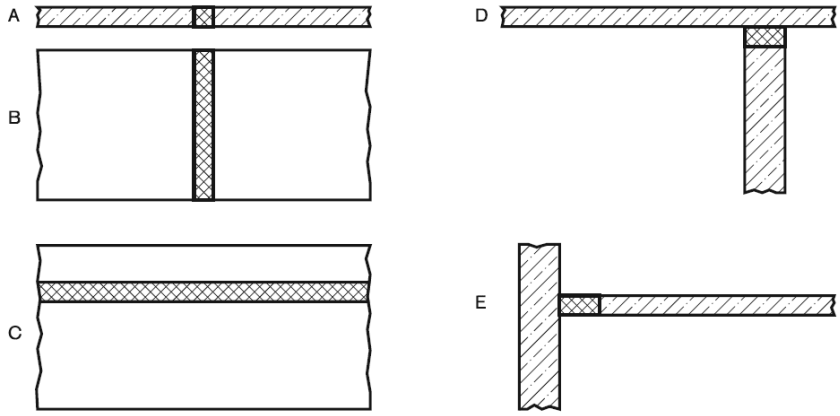
4.3.1 General

This report details the method of construction, the test conditions and the results obtained when the specific elements of construction described herein was tested following the procedure outlined in EN 1363-1:2012, and when appropriate EN 1363-2:1999. Any significant deviation with respect to size, constructional details, load stresses, edge or end conditions other than those allowed under the field of direct application in the relevant test method is not covered by this report.

4.3.2 Orientation

The possible orientation and the scope of application are defined in EN 1366-4:2006+A1:2010 and table below. According to the table the specimens were tested C orientation which means the scope of application is C.

Tested Orientation	Application
~~A~~	~~A, D, E~~
~~B~~	~~B~~
C	**C**, ~~D~~



Key

A linear joint in a horizontal test construction

B vertical linear joint in a vertical test construction

C horizontal linear joint in a vertical test construction

D horizontal wall joint abutting a floor, ceiling or roof

E horizontal floor joint abutting a wall

4.3.3 Supporting construction

Rigid block (concrete, block work, masonry) with a density of at least 650 kg/m^3, having a thickness of at least 200 mm.

4.3.4 Seal position

Test results are valid only for the position in which the specimens were tested. Polyurethane foam should fill the joint, polyurethane and acrylic sealant should implement with air cavities same as tested.

4.3.5 Mechanically induced movement

The movement capability of the linear joint seal is not allowed to exceed ±7,5 % due to be tested without mechanically induced movement.

5. LIMITATIONS

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

Signed:

.....
e-signed
Yiğitcan KEPİR
Person in the charge of tests

Efectis

Approved:

.....
e-signed
Ali BAYRAKTAR
Laboratory Manager

Drawings:

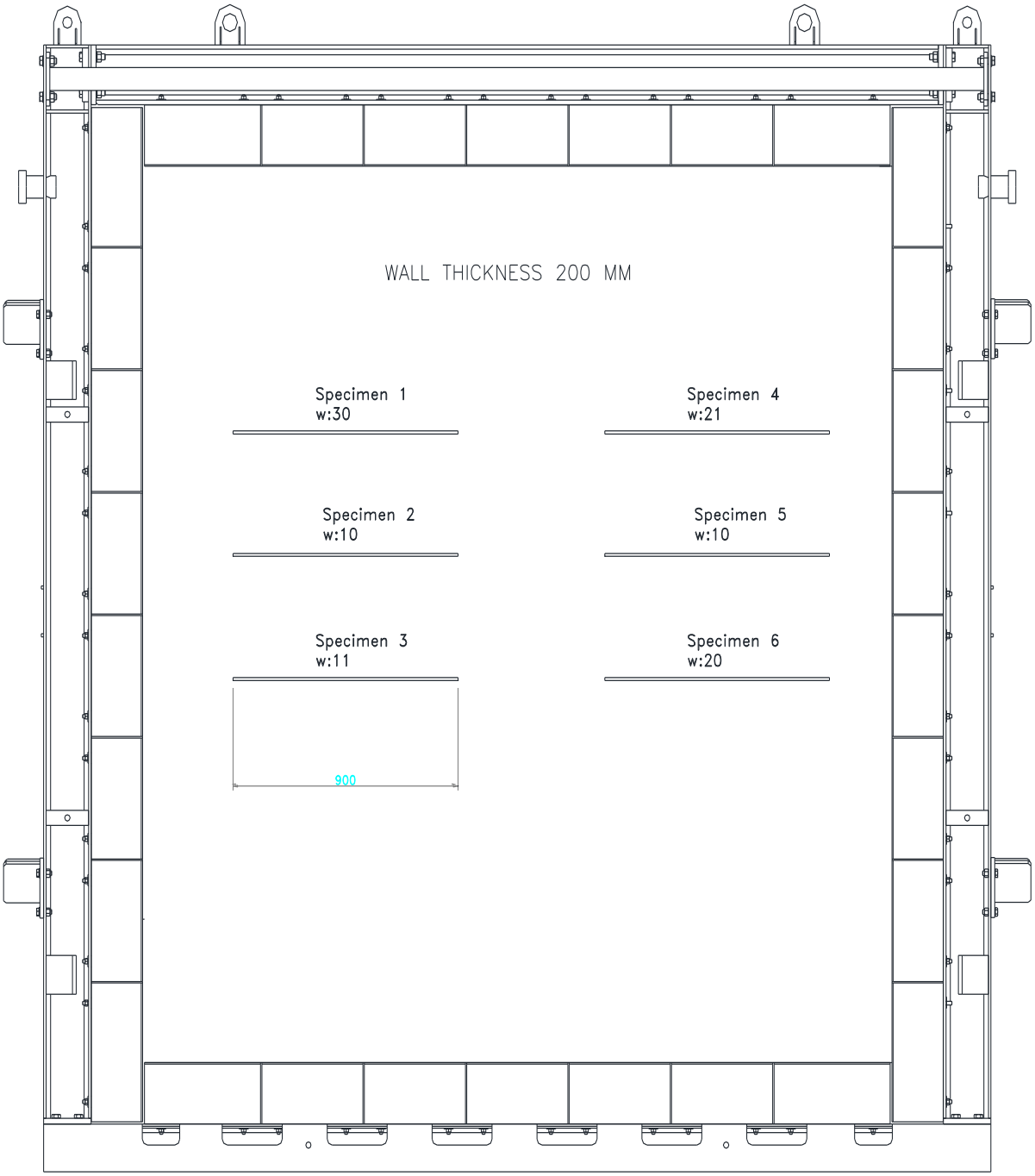


Figure 1: Unexposed side view of the construction.

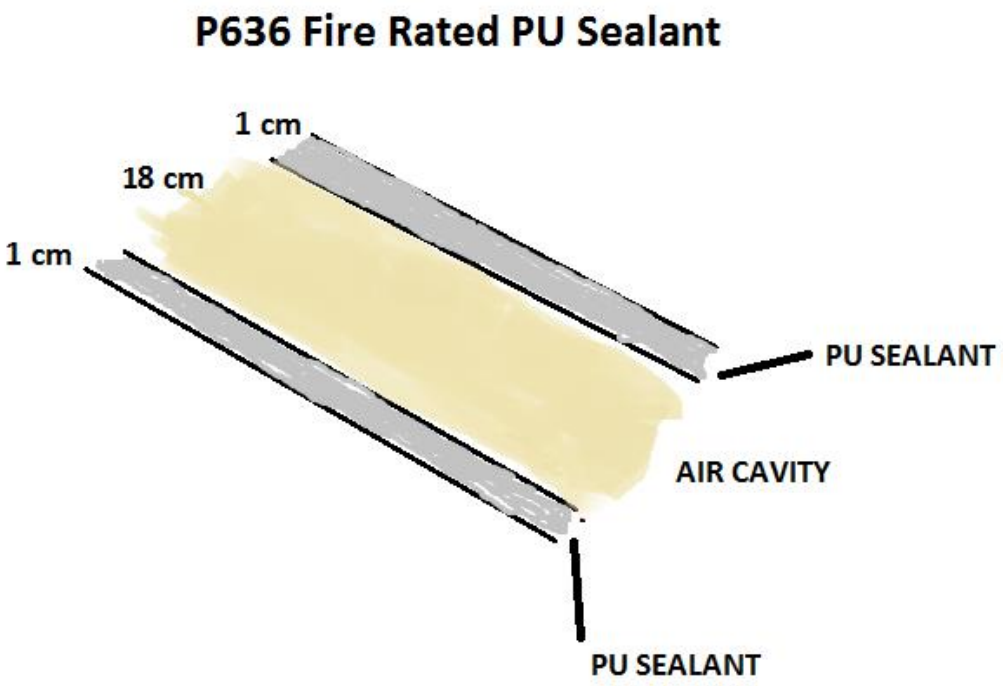


Figure 2: Cross section detail of the specimen nr.3.

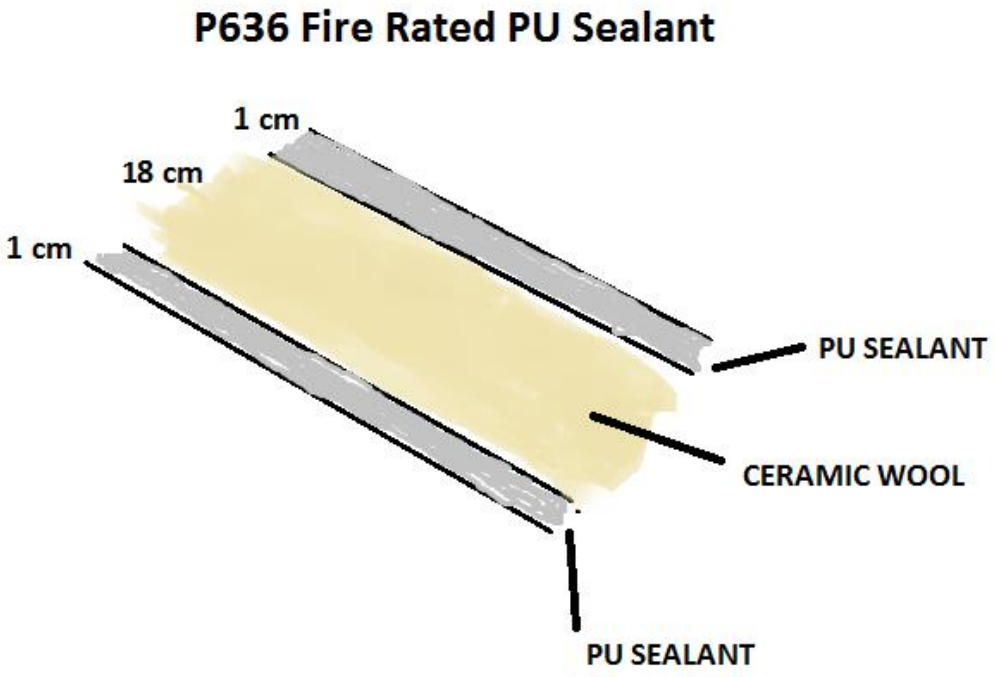


Figure 3: Cross section detail of the specimen nr.4.

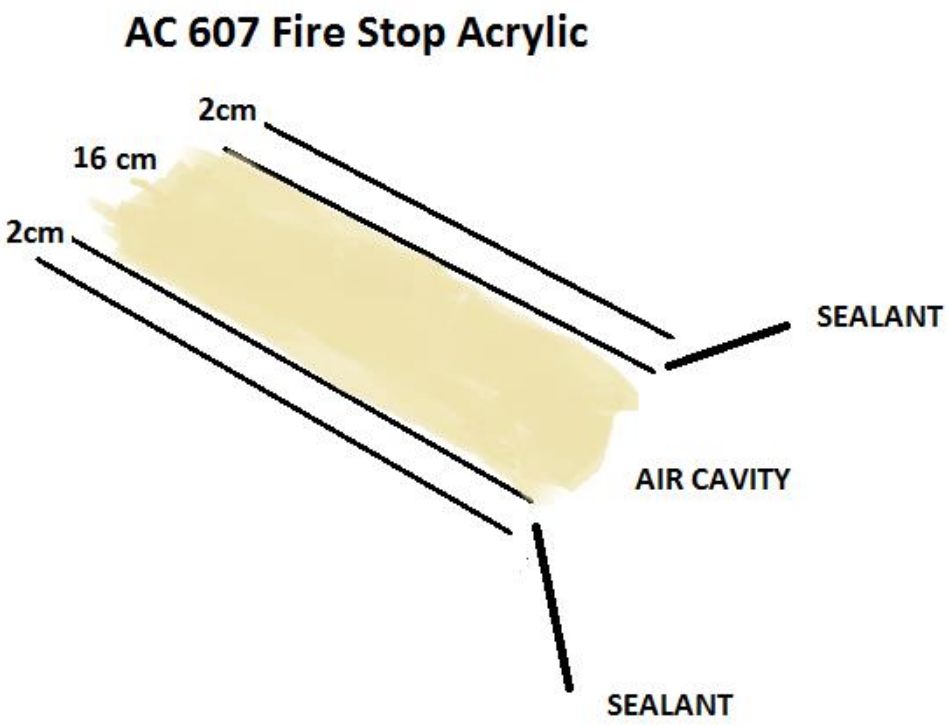


Figure 4: Cross section view of the test specimen nr. 5-6