

Thành phố Hồ Chí Minh, ngày 24 tháng 08 năm 2020

**THÔNG BÁO KẾT QUẢ KIỂM TRA  
CHẤT TRÁM CHỐNG CHÁY 90 PHÚT**

**Số: 03/TBKT/20**

**1. Đơn vị yêu cầu kiểm tra: Công ty TNHH Thương Mại Dịch Vụ Sản Xuất Thuận  
Thiên Thành.**

- Ông (bà) : Lê Trung Huy - Chức vụ: Giám Đốc
- Địa chỉ : Số 26/6 Nguyễn Minh Hoàng, Phường 12, Quận Tân Bình,  
TP.HCM
- Mã số thuế : 0305461301
- Tên công trình :
- Địa chỉ công trình :
- Mẫu đăng ký kiểm tra: **Chất trám chống cháy**
- Ký hiệu mẫu : SELSIL THT-MIC FIRE STOP
- Số lượng : 01
- Xuất xứ : Thổ Nhĩ Kỳ
- Hãng sản xuất : SELSIL
- Năm sản xuất : 2019
- Theo đơn đề nghị kiểm tra ngày: 14/08/2020
- Thời gian thử nghiệm : Từ 04h30 ngày 21/08/2020 đến 06h00 ngày 21/08/2020

**2. Đơn vị kiểm tra: Trung Tâm Thiết Bị Phòng Cháy Chữa Cháy 4/10**

- Ông (bà): **Lê Vĩnh Hà** - Chức vụ: Phó Giám Đốc Trung Tâm Thiết Bị PCCC 4/10
- Ông (bà): **Trần Văn Khóa** - Chức vụ: KS Phòng Kiểm định, Trung Tâm Thiết Bị PCCC 4/10.
- Chứng chỉ hành nghề số: **2016/155** - Ngày cấp: **13/09/2018** - Đơn vị cấp: **Cục Cảnh Sát PCCC & CNCH**

**3. Thiết bị:**

- Lò nung B001;
- Thiết bị đo nhiệt hiện số;





- Đồng hồ bấm giây;

#### 4. Cấu tạo mẫu:

- **Mẫu chất trám chống cháy (SELSIL THT-M1C FIRE STOP) độ dày 10mm**
- Kích thước mẫu thử: 230mm x 330mm
- Ký hiệu mẫu: **SELSIL THT-M1C FIRE STOP**
- Số lượng: 01 Mẫu

#### 5. Các bước tiến hành xác định giới hạn chịu lửa:

- Cố định mẫu thử vào sát miệng là nung, nhiệt lò nung sẽ tác dụng trực tiếp lên bề mặt mẫu thử.
- Cố định đầu đo của đồng hồ đo nhiệt độ lên bề mặt mẫu thử không bị nhiệt độ lò nung trực tiếp nung nóng. Trình tự thử nghiệm thực hiện theo đúng quy định trong TCXDVN342:2005 (ISO 834-1), TCVN 9311-1:2012 (ISO 834-8:2000)
- Bật điện lò nung, đặt chế độ của lò nung theo bảng sau:

| Qua thời gian (phút) | Nhiệt độ của lò nung phải đạt (°C) |
|----------------------|------------------------------------|
| 0                    | 300                                |
| 5                    | 361                                |
| 30                   | 545                                |
| 60                   | 650                                |
| 90                   | 760                                |

#### 6. Đánh giá giới hạn chịu lửa như sau:

- Tiêu chuẩn áp dụng: TCXDVN342:2005 (ISO 834-1); TCVN 384:2005 (ISO 834-1); TCVN 9311-1:2012 (ISO 834-8:2000).
- Giới hạn chịu lửa của vật liệu là thời hạn tính bằng phút, kể từ khi bắt đầu thử độ chịu lửa theo chế độ nhiệt như bảng trên, cho tới khi thấy hiện tượng như sau:  
 + Ở bất kỳ thời điểm nào, trên bề mặt không bị nhiệt lò nung trực tiếp đốt nóng đạt dưới 180°C so với nhiệt độ trước khi thử hay đạt dưới 220°C mà không phụ thuộc vào nhiệt độ trước khi thử.

#### 7. Kết quả thử nghiệm như sau:

| Thời gian | Nhiệt độ đo được trong lò nung (°C) | Nhiệt độ trung bình đo được trên bề mặt mẫu thử không bị nhiệt lò nung trực tiếp nung nóng (°C) tại vị trí số 01 | Nhiệt độ trung bình đo được trên bề mặt mẫu thử không bị nhiệt lò nung trực tiếp nung nóng (°C) tại vị trí số 02 |
|-----------|-------------------------------------|--|--|
| 0         | 300                                 | 49,7   | 49,9   |
| 5         | 361                                 | 53,1   | 53,1   |
| 30        | 545                                 | 75,1   | 74,3   |
| 60        | 650                                 | 126,6  | 127,1  |
| 90        | 760                                 | 167  | 175,1  |



**8. Kết luận:**

- Tại thời điểm kiểm tra, Mẫu chất trám chống cháy SELSIL THT-M1C FIRE STOP, độ dày 10mm nêu trên đạt giới hạn chịu lửa 90 phút (chín mươi phút).
- Thông báo này không thay Giấy chứng nhận kiểm định. Các thiết bị, phương tiện trên trước khi lưu thông phải được kiểm định theo Thông tư 66/2014/TT-BCA ngày 16/12/2014 của Bộ Công an.

**NGƯỜI THỰC HIỆN**



**Kỹ sư Trần Văn Khoa**

**KT.GIÁM ĐỐC  
PHÓ GIÁM ĐỐC**



**Thượng tá Lê Vinh Hà**



**LGAI**

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X/F

**Title:**

Classification report for the determination of the fire resistance of a set of penetration seals and linear joints according to EN 13501-2:2016 Fire classification of construction products and building elements. Part 2: Classification using data from fire resistance tests, excluding ventilation services.

**Tested material:**

5 penetration seals and 8 linear joints protected with different products, everything supplied by the test sponsor.  
Test done in vertical configuration.

**File number: 18/14847-115-1****Test sponsor:**

Sel Dis Ticaret Ve Kimya Sanayi A.S  
Oruç Reis Mah. Tekstil Kent Cad. Tekstil Kent Koza  
Plaza B Blok, Kat 29  
NO:110/111 34235 Esenler (Turkey)

**Report Date:**

26 April 2018

**Tested on:**

18 January 2018

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This document consists of 13 pages.



## 1.- INTRODUCTION

This Fire Resistance classification report defines the classification for a set of penetration seals and linear joints supplied.

## 2.- DETAILS OF CLASSIFIED ELEMENT

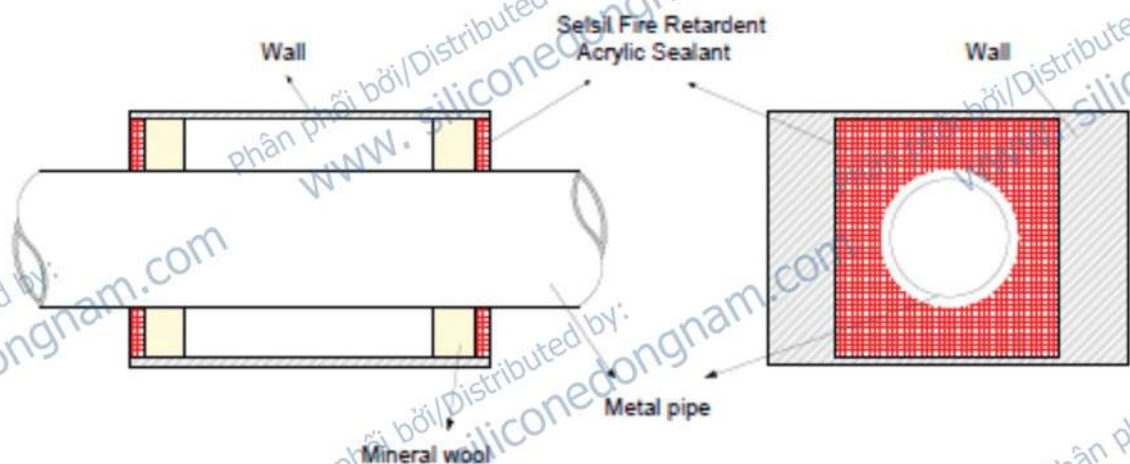
### 2.1.- Type of function

Tested elements are defined as penetration seals and linear joints. Their function is to withstand the integrity and thermal insulation criteria given in clause 5 of EN 13501-2:2016.

### 2.2.- Description

#### Sample 1.

- General description: metal pipe penetration seal.
- Metal pipe:
  - Material: ST37 steel
  - Diameter: 75 mm
  - Thickness: 4 mm
  - Total length: 640 mm, of which 240 mm are exposed
  - Pipe is capped at both ends (C/C).
- Penetration seal.
  - Dimensions: (160 x 160) mm
  - Composed by:
    - 10 mm of "Selsil Fire-Acrylic sealant"
    - 40 mm of mineral wool "ODE Rockflex" of 80 kg/m<sup>3</sup>
    - Internal core of air chamber



Detail 1. Sample 1

### Sample 2.

- General description: metal pipe penetration seal.

- Metal pipe:

Material: ST37 steel

Diameter: 44 mm

Thickness: 4 mm

Total length: 640 mm, of which 240 mm are exposed

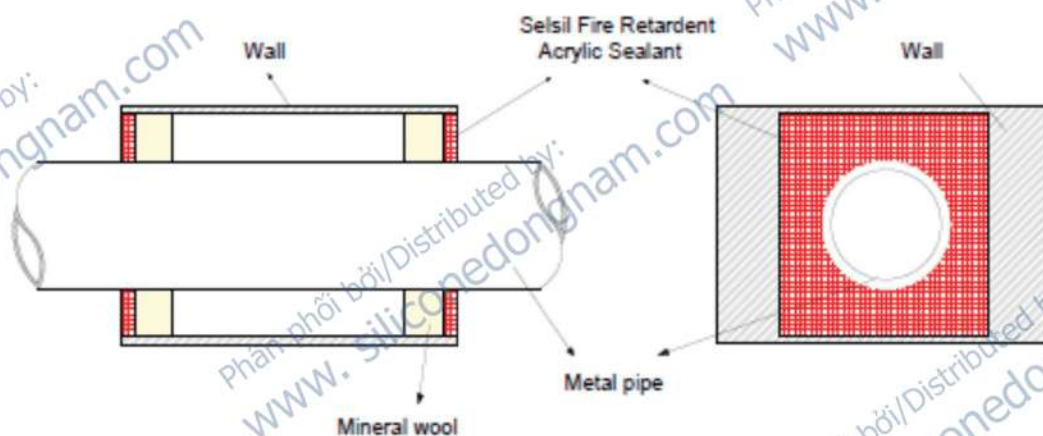
Pipe is capped at both ends (C/C).

- Penetration seal.

Dimensions: (100 x 100) mm

Composed by:

- 10 mm of "Selsil Fire-Acrylic sealant"
- 40 mm of mineral wool "ODE Rockflex" of 80 kg/m<sup>3</sup>
- Internal core of air chamber



Detail 2: Sample 2

### Sample 3

- General description: metal pipe penetration seal.

- Metal pipe:

Material: ST37 steel

Diameter: 44 mm

Thickness: 4 mm

Total length: 640 mm of which 240 mm are exposed.

Pipe is capped at both ends (C/C)

- Penetration seal:

External collar of dimensions: 105 mm in diameter, covering the entire exposed and unexposed length from the supporting wall. Composed by:

- 10 mm of "Selsil Fire-Acrylic sealant"
- 25 mm of mineral wool "ODE Rockflex" of 80 kg/m<sup>3</sup>

Penetration seal inside supporting wall composed by:

- 10 mm of "Selsil Fire-Acrylic sealant"



- 25 mm of mineral wool "ODE Rockflex" of 80 kg/m<sup>3</sup>
- Internal core of air chamber

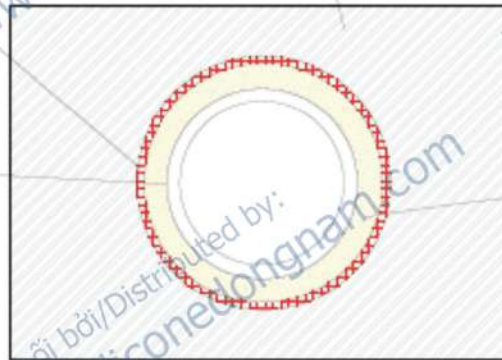


**Selsil Fire Retardent  
Acrylic Sealant**

**Wall**

**Metal pipe**

**Mineral wool**



Detail 3.a and 3.b. Sample 3

#### Sample 4

- General description: cable tray penetration seals.

- Cable types:

- A1: NYY-J-5x1.5 RE
- A3: N2XH-J 5x1.5 RE
- B: NYY-J 1x95 RM

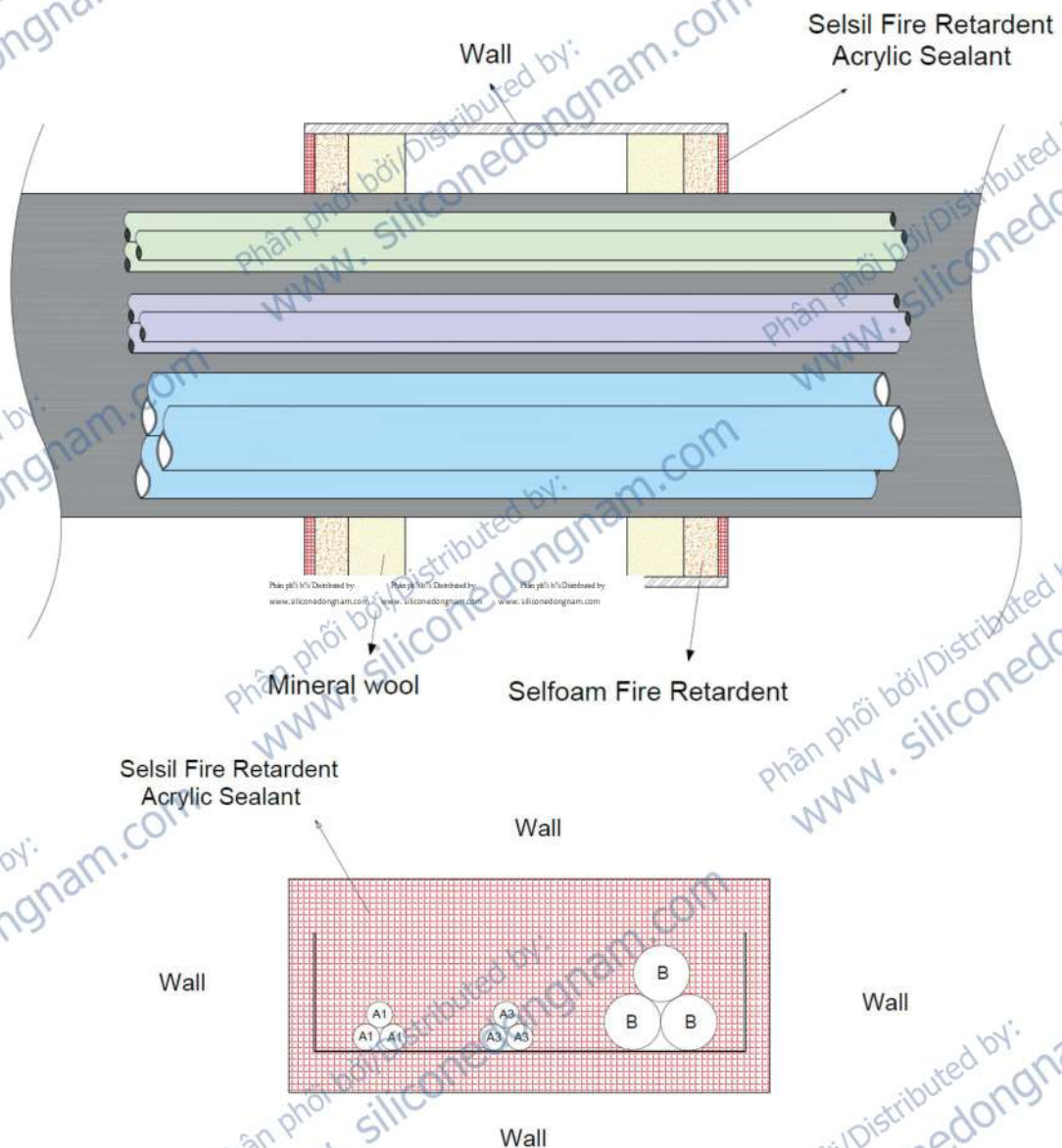
- Cable tray: 150 mm width – 40 mm high perforated ST37 steel  
cable tray - Penetration seal:

File number: 18/14847-115-1

Dimensions: 250 mm x 100 mm (width x height)

Composed by:

- 10 mm of "Selsil Fire-Acrylic sealant"
- 20 mm of "Selfoam Fire Resistant Foam 0783"
- 30 mm of mineral wool "ODE Rockflex" of 80 kg/m<sup>3</sup>
- Internal core of air chamber



Detail 4.a and 4.b. Sample 4

#### Sample 5

- General description: cable tray penetration seals.
- Cable types:
  - C1: NYCW 4x95 SM/50
  - C3: N2XH-J 4x95 SM
- Cable tray: 150 mm width – 40 mm high perforated ST37 steel cable tray

File number: 18/14847-115-1

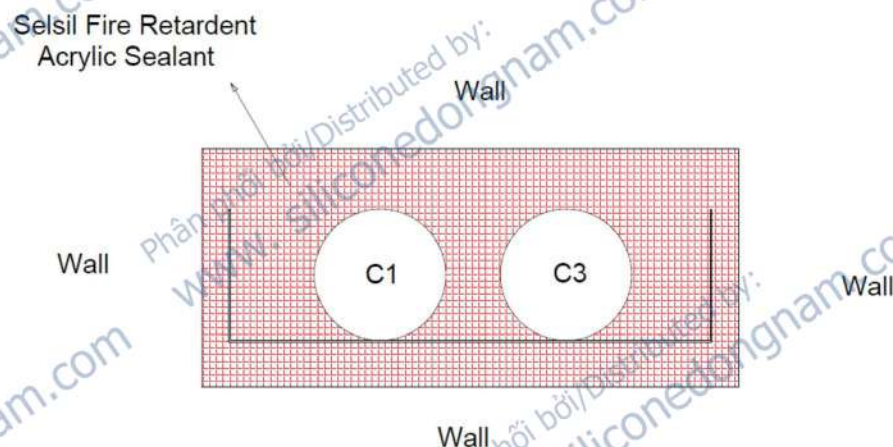
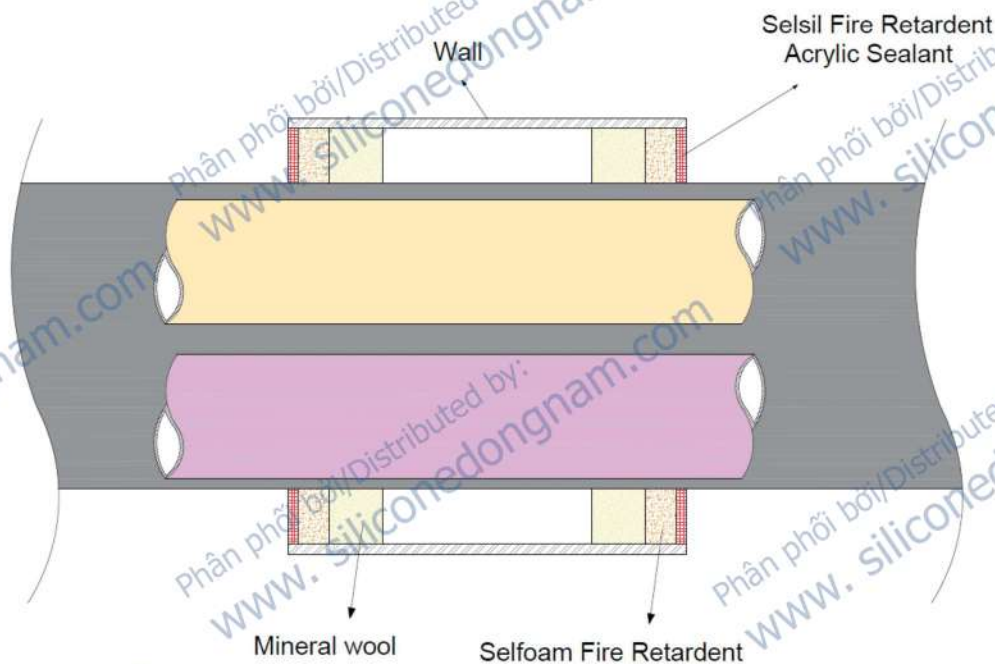


- Penetration seal:

Dimensions: 250 mm x 100 mm (width x height)

Composed by:

- 10 mm of "Selsil Fire-Acrylic sealant"
- 20 mm of "Selfoam Fire Resistant Foam 0783"
- 30 mm of mineral wool "ODE Rockflex" of 80 kg/m<sup>3</sup>
- Internal core of air chamber



Detail 5.a and 5.b, Sample 5

Sample 6, 7 and 9

General description: vertical linear joints.

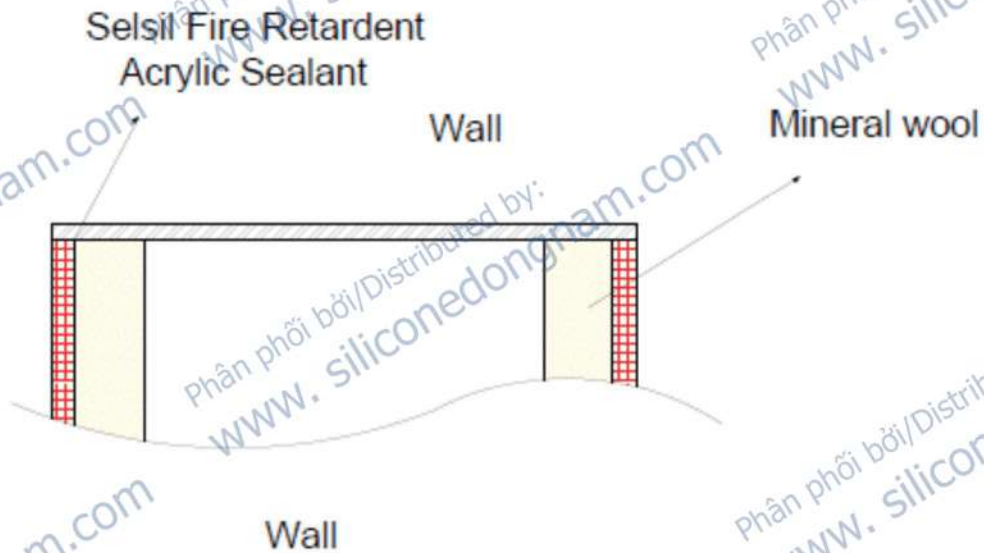
Dimensions:

File number: 18/14847-115-1

Length: 900 mm  
Width sample 6: 10 mm  
Width sample 7: 20 mm  
Width sample 9: 30 mm

**Composition:**

- 10 mm of Selsil Fire-Acrylic sealant
- 20 mm of mineral wool "ODE Rockflex" of 80 kg/m<sup>3</sup>
- Internal core of air chamber



Detail 6. Sample 6, 7 and 9

**Sample 8**

General description: vertical linear joints.

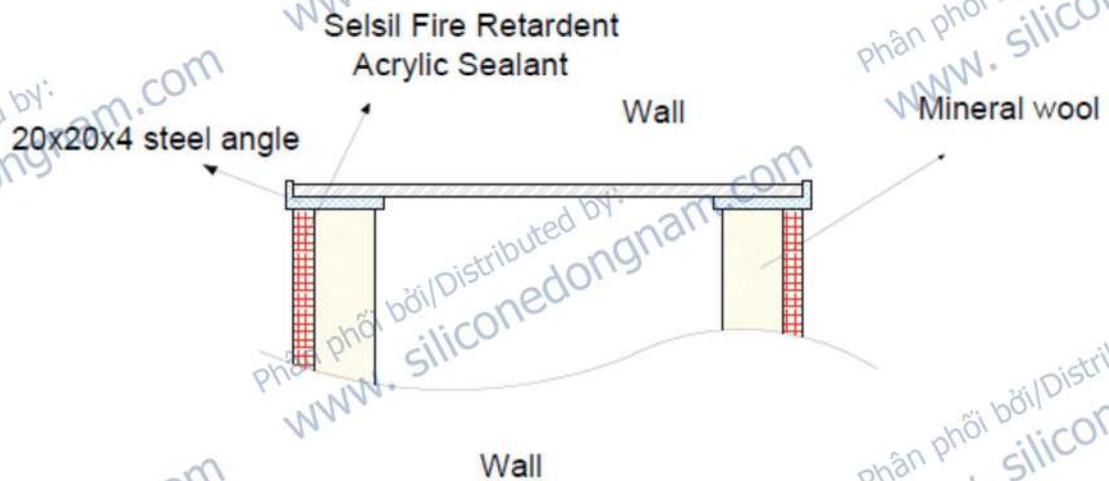
Dimensions:

Length: 900 mm  
Width: 20 mm

**Composition:**

- 10 mm of Selsil Fire-Acrylic sealant
- 20 mm of mineral wool "ODE Rockflex" of 80 kg/m<sup>3</sup>
- Internal core of air chamber
- Includes steel angle of 20x20x4 mm as indicated in detail 7





Detail 7. Sample 8

Samples 10, 11 and 13 are the same than 6, 7 and 9, respectively, but horizontally assembled.

Sample 12 is the same than sample 8, but horizontally assembled.

#### Supporting construction.

Supporting construction is made of aerated concrete bricks of 150 mm in thickness and 500 kg/m<sup>3</sup>.

The complete description of the tested elements can be consulted in the test report (see clause 3 of this classification report).

### **3.- TEST REPORT**

This classification report is based on the following test report:

**File n°: 18/14847-115**

**Issued with date: 26 of April of 2018**

**Test carried out on: 18 of January of 2018**

### **4.- TEST RESULTS**

#### **4.1.- Test standard:**

EN 1366-3: 2009 "Fire resistance tests for service installations. Part 3: Penetration seals" (equivalent to UNE EN 1366-3: 2011) and EN 1366-4:2006+A1:2010 "Fire Resistance tests for service installations. Part 4: Linear joint seals" (equivalent to UNE EN 1366-4:2008+A1:2010).

#### 4.2.- Exposure conditions

|                                |   |
|--------------------------------|---|
| <b>Time/temperature curve</b>  | $T = 345 \log_{10} (8t + 1) + 20$   |
| <b>Number of exposed sides</b> | Symmetrical samples   |
| <b>Applied load</b>            | No load applied   |
| <b>Support conditions</b>      | Supporting construction is made of aerated concrete bricks of 150 mm in thickness and 500 kg/m <sup>3</sup> . |

#### 4.3.- Result table.

| Sample    | Integrity criterion                                   | Thermal insulation criterion  |
|-----------|---|---|
| Sample 1  | It was maintained during the entire test, 182 minutes | Failed at 35 minutes, when temperature rise of thermocouple 12 exceeds 180°C  |
| Sample 2  | It was maintained during the entire test, 182 minutes | Failed at 97 minutes, when temperature rise of thermocouple 25 exceeds 180°C  |
| Sample 3  | Failed at 172 minutes, ignition of cotton pad         | Failed at 160 minutes, when temperature rise of thermocouple 27 exceeds 180°C |
| Sample 4  | It was maintained during the entire test, 182 minutes | Failed at minute 62, when temperature rise of thermocouple 17 exceeds 180°C.  |
| Sample 5  | Failed at 173 minutes, ignition of cotton pad.        | Failed at minute 55, when temperature rise of thermocouple 32 exceeds 180°C   |
| Sample 6  | It was maintained during the entire test, 182 minutes | It was maintained during the entire test, 182 minutes                         |
| Sample 7  | It was maintained during the entire test, 182 minutes | It was maintained during the entire test, 182 minutes                         |
| Sample 8  | It was maintained during the entire test, 182 minutes | It was maintained during the entire test, 182 minutes                         |
| Sample 9  | It was maintained during the entire test, 182 minutes | It was maintained during the entire test, 182 minutes                         |
| Sample 10 | It was maintained during the entire test, 182 minutes | It was maintained during the entire test, 182 minutes                         |
| Sample 11 | It was maintained during the entire test, 182 minutes | It was maintained during the entire test, 182 minutes                         |
| Sample 12 | It was maintained during the entire test, 182 minutes | It was maintained during the entire test, 182 minutes                         |
| Sample 13 | It was maintained during the entire test, 182 minutes | It was maintained during the entire test, 182 minutes                         |



## 5.- CLASSIFICATION

According to clause 7.5 of EN 13501-2:2016 standard, classification of the tested elements is:

| Sample            | Classification                 |
|-------------------|--------------------------------|
| Sample 1          | <b>E 180 EI 30-C/C</b>         |
| Sample 2          | <b>E 180 EI 90-C/C</b>         |
| Sample 3          | <b>EI 120-C/C</b>              |
| Sample 4          | <b>E 180 EI 60</b>             |
| Sample 5          | <b>E 120 EI 45</b>             |
| Sample 6, 7, 9    | <b>EI 180-V-X-M-W10 to W30</b> |
| Sample 8          | <b>EI 180-V-X-M-W20</b>        |
| Sample 10, 11, 13 | <b>EI 180-T-X-M-W10 to W30</b> |
| Sample 12         | <b>EI 180-T-X-M-W20</b>        |

## 6.- FIELD OF DIRECT APPLICATION

### 6.1 Penetration seals according to EN 1366-3:2009 (samples 1 to 5).

#### 6.1.1 General.

##### - Orientation

Test results are applicable to penetration seals assembled in vertical division (wall).

##### - Supporting construction

Test results are applicable to concrete or masonry elements of a thickness and density equal to or greater than that of the used in the test.

**- Service support construction.**

Metal trays with melting point higher than the furnace temperature at the classification time (e.g: stainless steel, galvanised steel) are covered.

**- Seal size and distances (not applicable to cable penetration seals):**

The test results obtained using standard wall and floor configurations are valid for any seal (in terms of linear dimensions) equal to or smaller than the tested provided that:

- Total amount of cross sections of the services (including insulation) does not exceed 60 % of the penetration area.
- Working clearances are not smaller than the minimum working clearances (defined in the annexes A, B, E and F of EN 1366-3:2009 and according to figure 1 of the test report.
- Distance between a single service and the seal edge shall remain within the tested range.

**6.1.2 Metal pipes (samples 1, 2, 3).**

**- Pipe diameter and pipe wall thickness.**

Samples 1 and 2.

Pipe Diameters from 44 mm to 75 mm

Pipe Wall thickness: up to 14.2 mm

Sample 3

Valid for the tested pipe diameter and pipe wall thickness up to 14.2 mm.

**- Type of pipe material**

Results of test covers pipe materials with a thermal conductivity lower than that tested, subject to the material having a melting point at least equal to that of the material tested or greater than the furnace temperature achieved at the required classification period.

**- Pipe arrangement.**

Test result covers arrangement as tested.

**- Number of pipes.**

Results cover only single penetration seals of the same type.

**- Pipe end configuration.**

Result covers only C/C configurations.

**- Pipes fitted with an insulation material (only Sample 3).**

According to test sponsor data, sample 3 fitted with an insulation material having class A2 class (ODE Rockflex with aluminium foil coating).



Test results covers only insulated pipes.

Test conducted on non-insulated pipes covers the integrity criterion of pipes with interrupted insulation.

Thickness of the insulation can be increased but not reduced.

Density of the insulation may be increased but may not be reduced.

Test results does not cover pipe insulated with glass wool.

Test results cover all angles between 90° and 45°.

### **6.1.3 Cable penetration seals (samples 4 and 5)**

Test results cover circular seals.

- **Cable type and size**

Test results cover tested cable types.

- **Cable support**

Test results cover situations where the support does not pass through the seal.

## 6.2 Linear joints, according to EN 1366-4:2006+A1:2010 (samples 6 to 13)

### 6.2.1 Orientation.

Test results are applicable to vertical and horizontal linear joints in a vertical construction, provided that the supporting construction and the location of the seal within the linear joint remain unchanged.

### 6.2.2 Supporting construction.

Test results are applicable to concrete, block work and masonry separating elements of a thickness and density equal to or greater than that tested.

### 6.2.3 Seal position.

Test results are valid only for the position in which the seal was tested.

### 6.2.4 Mechanically induced movement.

Not tested. Not applicable

The validity period is the one indicated in the product certification system.  
This document is not neither a type approval nor a product certification.



Digitally signed by  
Jordi Mirabent Junyent



Digitally Signed By  
Albert Ger

Fire Laboratory Responsible  
LGAi Technological Center, S.A.

Fire Resistance Responsible  
LGAi Technological Center, S.A.

The results refer exclusively to the sample, product or material surrendered to the Laboratory, just as it is informed in the section of received material and tested under the conditions indicated in the norms mentioned in this document.

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