FIRE RESISTANCE CLASSIFICATION REPORT No 9297E

Owner of the classification report:

SOUDAL NV
Everdongenlaan 18-20
B-2300 TURNHOUT

Introduction:

This classification report defines the classification assigned to linear joint seals named “SOUDAL FIRE RANGE”, in accordance with the procedures given in EN 13501-2: 2007+A1/2009: Fire classification of products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services.

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

1 Details of classified product

1.1 General

The specimens are defined as linear joint seals, named “SOUDAL FIRE RANGE”. They are evaluated in respect of the fire performance characteristics given in clause 5 of EN 13501-2: 2007+A1/2009.

1.2 Description

The elements are fully described in the test report provided in support of this classification listed in clause 2.1. A drawing of this test report is enclosed: see annex 1 of this classification report.

The elements are 5 linear joint seals in an aerated concrete wall with a thickness of 200 mm and a density of 550 kg/m³ and 6 linear joint seals in an aerated concrete wall with a thickness of 100 mm and a density of 550 kg/m³. All joint seals are vertically applied.

The joints sealed off with SOUDAFOAM FR [4] are completely filled.

The joints sealed off with FIRECRYL 4H [5] and FIRE SILICONE B1 [6] are filled until a certain depth both on the exposed and the unexposed side. To respect the depth of these joint seals, soft polyethylene backer rods with a diameter of 15 mm [7], 25 mm [8] and 40 mm [9] have been used.

In case of the joints filled with FIRE SILICONE B1 [6], the aerated concrete has been pre-treated with a layer of Soudal Primer 150 [10], applied by means of a brush.

<u>Joint seal I:</u>

Product:	SOUDAFOAM FR [4]
Width:	11 mm
Depth:	200 mm
Wall thickness:	200 mm [1]
Backer rod:	none

Joint seal II:

Product:	SOUDAFOAM FR [4]
Width:	41 mm
Depth:	200 mm
Wall thickness:	200 mm [1]
Backer rod:	none

Joint seal III:

Product:	SOUDAL FIRECRYL 4H [5]
Width:	20 mm
Depth:	± 20 mm
Wall thickness:	200 mm [1]
Backer rod:	soft polyethylene, diameter: 25 mm [8]

Joint seal IV:

Product:	FIRE SILICONE B1 [6]
Width:	11 mm
Depth:	10 mm
Wall thickness:	200 mm [1]
Backer rod:	soft polyethylene, diameter: 15 mm [7]

Joint seal V:

Product:	FIRE SILICONE B1 [6]
Width:	31 mm
Depth:	20 mm
Wall thickness:	200 mm [1]
Backer rod:	soft polyethylene, diameter: 40 mm [9]

Joint seal VI:

Product:	FIRE SILICONE B1 [6]
Width:	33 mm
Depth:	20 mm
Wall thickness:	100 mm [3]
Backer rod:	soft polyethylene, diameter: 40 mm [9]

Joint seal VII:

Product:	FIRE SILICONE B1 [6]
Width:	11 mm
Depth:	10 mm
Wall thickness:	100 mm [3]
Backer rod:	soft polyethylene, diameter: 15 mm [7]

Joint seal VIII:

Product:	SOUDAL FIRECRYL 4H [5]
Width:	21 mm
Depth:	20 mm
Wall thickness:	100 mm [3]
Backer rod:	soft polyethylene, diameter: 25 mm [8]

Joint seal IX:

Product:	FIRE SILICONE B1 [6]
Width:	11 mm
Depth:	10 mm
Wall thickness:	100 mm [3]
Backer rod:	soft polyethylene, diameter: 15 mm [7]

Joint seal X:

Product:	SOUDAFOAM FR [4]
Width:	31 mm
Depth:	100 mm
Wall thickness:	100 mm [3]
Backer rod:	none

Joint seal XI:

Product:	SOUDAFOAM FR [4]
Width:	11 mm
Depth:	100 mm
Wall thickness:	100 mm [3]
Backer rod:	none

2 Test reports and test results in support of the classification

2.1 Test reports

Name of the laboratory that carried out the test	Identification number of the reports	Owner of the report	Date of the test	Test method
WFRGENT nv	9297A	SOUDAL NV	07/12/1999	EN 1366-4: 1999 EN 1363-1: 1999
WFRGENT nv	9297D	SOUDAL NV	07/12/1999	FprEN 15882-4: 2011

Exposure conditions during the fire resistance test:

Temperature/time curve: standard as in EN 1363-1: 1999.

Direction of exposure: The joints sealers are exposed to the fire to one side. All joint seals are symmetrical.

The joint seals are applied vertically in an aerated concrete wall.

No application of load.

The joint seals have not been subjected to mechanically driven movements before or during the test.

The test has been carried out according to EN 1366-4: 1999. This test norm comprises no technical adaptations compared to EN 1366-4: 2006 which would make it impossible to classify these joint seals according to EN 13501-2: 2007+A1: 2009.

2.2 Test results

	Parameters		
	Thermal insulation	**Integrity**	
	ΔT_M = 180 °C	Ignition cotton pad	Spontaneous and continuous flames
Element failed after	results		
Joint seal I	229	229	229
Joint seal II	110	110	110
Joint seal III	≥ 240 (1)	≥ 240 (1)	≥ 240 (1)
Joint seal IV	≥ 240 (1)	≥ 240 (1)	≥ 240 (1)
Joint seal V	225	≥ 240 (1)	≥ 240 (1)
Joint seal VI	116	187	187
Joint seal VII	150	202	202
Joint seal VIII	210	≥ 240 (1)	≥ 240 (1)
Joint seal IX	187	≥ 240 (1)	≥ 240 (1)
Joint seal IX	50	50	50
Joint seal XI	103	104	104

(1) No failure at the end of the test

The test duration was 240 minutes.

3 Classification and field of application

3.1 Reference of classification

This classification has been carried out in accordance with clause 7.5.9 of EN 13501-2: 2007+A1/2009 and ETAG 026 Part 3 Linear Joint and Gap Seals (Feb. 2008-02-01).

3.2 Classification

The elements are classified according to the following combinations of performance parameters and classes as appropriate.

Joint seal I:

Product:	SOUDAFOAM FR
Width:	11 mm
Depth:	200 mm
Wall thickness:	200 mm
Backer rod:	none

EI 180 - V - X – W 00 to 11,	**E 180 - V - X – W 00 to 11**,
EI 120 - V - X – W 00 to 11,	E 120 - V - X – W 00 to 11,
EI 90 - V - X – W 00 to 11,	E 90 - V - X – W 00 to 11,
EI 60 - V - X – W 00 to 11,	E 60 - V - X – W 00 to 11,
EI 45 - V - X – W 00 to 11,	E 45 - V - X – W 00 to 11,
EI 30 - V - X – W 00 to 11,	E 30 - V - X – W 00 to 11,
EI 20 - V - X – W 00 to 11,	E 15 - V - X – W 00 to 11.
EI 15 - V - X – W 00 to 11.	

The classifications apply to joint seals with a width between 0 mm and 11 mm and a depth of 200 mm. (1)

Joint seal II:

Product:	SOUDAFOAM FR
Width:	41 mm
Depth:	200 mm
Wall thickness:	200 mm
Backer rod:	none

EI 90 - V - X – W 00 to 41,	**E 90 - V - X – W 00 to 41**,
EI 60 - V - X – W 00 to 41,	E 60 - V - X – W 00 to 41,
EI 45 - V - X – W 00 to 41,	E 45 - V - X – W 00 to 41,
EI 30 - V - X – W 00 to 41,	E 30 - V - X – W 00 to 41,
EI 20 - V - X – W 00 to 41,	E 15 - V - X – W 00 to 41.
EI 15 - V - X – W 00 to 41.	

The classifications apply to joint seals with a width between 0 mm and 41 mm and a depth of 200 mm. (1)

Joint seal III:

Product:	SOUDAL FIRECRYL 4H
Width:	20 mm
Depth:	20 mm
Wall thickness:	200 mm
Backer rod:	soft polyethylene, diameter: 25 mm

EI 240 - V - X – W 00 to 20,	**E 240 - V - X – W 00 to 20**,
EI 180 - V - X – W 00 to 20,	E 180 - V - X – W 00 to 20,
EI 120 - V - X – W 00 to 20,	E 120 - V - X – W 00 to 20,
EI 90 - V - X – W 00 to 20,	E 90 - V - X – W 00 to 20,
EI 60 - V - X – W 00 to 20,	E 60 - V - X – W 00 to 20,
EI 45 - V - X – W 00 to 20,	E 45 - V - X – W 00 to 20,
EI 30 - V - X – W 00 to 20,	E 30 - V - X – W 00 to 20,
EI 20 - V - X – W 00 to 20,	E 15 - V - X – W 00 to 20.
EI 15 - V - X – W 00 to 20.	

The classifications apply to joint seals with a width between 0 mm and 20 mm and a depth of 20 mm on both sides of the wall. (1)

Joint seal IV:

Product:	FIRE SILICONE B1
Width:	11 mm
Depth:	10 mm
Wall thickness:	200 mm
Backer rod:	soft polyethylene, diameter: 15 mm

EI 240 - V - X – W 00 to 11,	**E 240 - V - X – W 00 to 11**,
EI 180 - V - X – W 00 to 11,	E 180 - V - X – W 00 to 11,
EI 120 - V - X – W 00 to 11,	E 120 - V - X – W 00 to 11,
EI 90 - V - X – W 00 to 11,	E 90 - V - X – W 00 to 11,
EI 60 - V - X – W 00 to 11,	E 60 - V - X – W 00 to 11,
EI 45 - V - X – W 00 to 11,	E 45 - V - X – W 00 to 11,
EI 30 - V - X – W 00 to 11,	E 30 - V - X – W 00 to 11,
EI 20 - V - X – W 00 to 11,	E 15 - V - X – W 00 to 11.
EI 15 - V - X – W 00 to 11.	

The classifications apply to joint seals with a width between 0 mm and 11 mm and a depth of 10 mm on both sides of the wall. (1)

Joint seal V:

Product:	FIRE SILICONE B1
Width:	31 mm
Depth:	20 mm
Wall thickness:	200 mm
Backer rod:	soft polyethylene, diameter: 40 mm

EI 180 - V - X – W 00 to 31,	**E 180 - V - X – W 00 to 31**,
EI 120 - V - X – W 00 to 31,	E 120 - V - X – W 00 to 31,
EI 90 - V - X – W 00 to 31,	E 90 - V - X – W 00 to 31,
EI 60 - V - X – W 00 to 31,	E 60 - V - X – W 00 to 31,
EI 45 - V - X – W 00 to 31,	E 45 - V - X – W 00 to 31,
EI 30 - V - X – W 00 to 31,	E 30 - V - X – W 00 to 31,
EI 20 - V - X – W 00 to 31,	E 15 - V - X – W 00 to 31.
EI 15 - V - X – W 00 to 31.	

The classifications apply to joint seals with a width between 0 mm and 31 mm and a depth of 20 mm on both sides of the wall. (1)

Joint seal VI:

Product:	FIRE SILICONE B1
Width:	33 mm
Depth:	20 mm
Wall thickness:	100 mm
Backer rod:	soft polyethylene, diameter: 40 mm

EI 90 - V - X – W 00 to 33,	**E 180 - V - X – W 00 to 33**,
EI 60 - V - X – W 00 to 33,	E 120 - V - X – W 00 to 33,
EI 45 - V - X – W 00 to 33,	E 90 - V - X – W 00 to 33,
EI 30 - V - X – W 00 to 33,	E 60 - V - X – W 00 to 33,
EI 20 - V - X – W 00 to 33,	E 45 - V - X – W 00 to 33,
EI 15 - V - X – W 00 to 33.	E 30 - V - X – W 00 to 33,
	E 15 - V - X – W 00 to 33.

The classifications apply to joint seals with a width between 0 mm and 33 mm and a depth of 20 mm on both sides of the wall. (1)

Joint seal VII:

Product:	FIRE SILICONE B1
Width:	11 mm
Depth:	10 mm
Wall thickness:	100 mm
Backer rod:	soft polyethylene, diameter: 15 mm

EI 120 - V - X – W 00 to 11,	**E 180 - V - X – W 00 to 11**,
EI 90 - V - X – W 00 to 11,	E 120 - V - X – W 00 to 11,
EI 60 - V - X – W 00 to 11,	E 90 - V - X – W 00 to 11,
EI 45 - V - X – W 00 to 11,	E 60 - V - X – W 00 to 11,
EI 30 - V - X – W 00 to 11,	E 45 - V - X – W 00 to 11,
EI 20 - V - X – W 00 to 11,	E 30 - V - X – W 00 to 11,
EI 15 - V - X – W 00 to 11.	E 15 - V - X – W 00 to 11.

The classifications apply to joint seals with a width between 0 mm and 11 mm and a depth of 10 mm on both sides of the wall. (1)

Joint seal VIII:

Product:	SOUDAL FIRECRYL 4H
Width:	21 mm
Depth:	20 mm
Wall thickness:	100 mm
Backer rod:	soft polyethylene, diameter: 25 mm

EI 180 - V - X – W 00 to 21,	**E 240 - V - X – W 00 to 21**,
EI 120 - V - X – W 00 to 21,	E 180 - V - X – W 00 to 21,
EI 90 - V - X – W 00 to 21,	E 120 - V - X – W 00 to 21,
EI 60 - V - X – W 00 to 21,	E 90 - V - X – W 00 to 21,
EI 45 - V - X – W 00 to 21,	E 60 - V - X – W 00 to 21,
EI 30 - V - X – W 00 to 21,	E 45 - V - X – W 00 to 21,
EI 20 - V - X – W 00 to 21,	E 30 - V - X – W 00 to 21,
EI 15 - V - X – W 00 to 21.	E 15 - V - X – W 00 to 21.

The classifications apply to joint seals with a width between 0 mm and 21 mm and a depth of 20 mm on both sides of the wall. (1)

Joint seal IX:

Product:	FIRE SILICONE B1
Width:	11 mm
Depth:	10 mm
Wall thickness:	100 mm
Backer rod:	soft polyethylene, diameter: 15 mm

EI 180 - V - X – W 00 to 11,	**E 240 - V - X – W 00 to 11**,
EI 120 - V - X – W 00 to 11,	E 180 - V - X – W 00 to 11,
EI 90 - V - X – W 00 to 11,	E 120 - V - X – W 00 to 11,
EI 60 - V - X – W 00 to 11,	E 90 - V - X – W 00 to 11,
EI 45 - V - X – W 00 to 11,	E 60 - V - X – W 00 to 11,
EI 30 - V - X – W 00 to 11,	E 45 - V - X – W 00 to 11,
EI 20 - V - X – W 00 to 11,	E 30 - V - X – W 00 to 11,
EI 15 - V - X – W 00 to 11.	E 15 - V - X – W 00 to 11.

The classifications apply to joint seals with a width between 0 mm and 11 mm and a depth of 10 mm on both sides of the wall. (1)

Joint seal X:

Product:	SOUDAFOAM FR
Width:	31 mm
Depth:	100 mm
Wall thickness:	100 mm
Backer rod:	none

EI 45 - V - X – W 00 to 31,	**E 45 - V - X – W 00 to 31,**
EI 30 - V - X – W 00 to 31,	E 30 - V - X – W 00 to 31,
EI 20 - V - X – W 00 to 31,	E 15 - V - X – W 00 to 31.
EI 15 - V - X – W 00 to 31.	

The classifications apply to joint seals with a width between 0 mm and 31 mm and a depth of 200 mm. (1)

Joint seal XI:

Product:	SOUDAFOAM FR
Width:	11 mm
Depth:	100 mm
Wall thickness:	100 mm
Backer rod:	none

EI 90 - V - X – W 00 to 11,	**E 90 - V - X – W 00 to 11,**
EI 60 - V - X – W 00 to 11,	E 60 - V - X – W 00 to 11,
EI 45 - V - X – W 00 to 11,	E 45 - V - X – W 00 to 11,
EI 30 - V - X – W 00 to 11,	E 30 - V - X – W 00 to 11,
EI 20 - V - X – W 00 to 11,	E 15 - V - X – W 00 to 11.
EI 15 - V - X – W 00 to 11.	

The classifications apply to joint seals with a width between 0 mm and 11 mm and a depth of 200 mm. (1)

The joint seals, tested in an aerated concrete wall, can also be applied in walls out of concrete, blocks and masonry with a thickness and a density equal or greater to those tested. (2)

(1) Extended field of application according to FprEN 15882-: 2011 (and ETAG 026 Part 3).

(2) Direct field of application according to EN 1366-4.

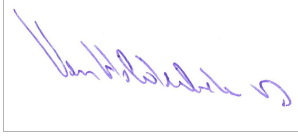
4 Duration of the validity of the classification report

At the time the standard EN 13501-2:2007+A1:2009 was published, no decision was made concerning the duration of validity of the classification document.

5 Limitations

This classification document does not represent type approval nor certification of the product.

SIGNED



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APPROVED

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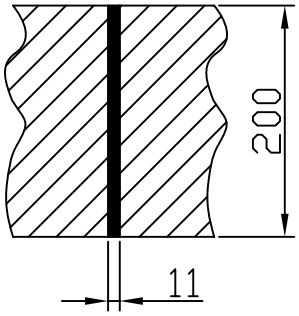
This document is a translation into English of the classification report No. 9297E, originally issued in Dutch. This translated classification report has been issued under the responsibility of and checked by WFRGENT nv. This translation is issued according to the “Interpretations of the European standard EN ISO/IEC 17025: 2005” which applies to fire test laboratories, as defined in the EGOLF agreement EGA 08rev:2012.

In case of doubt, the original version in Dutch prevails.

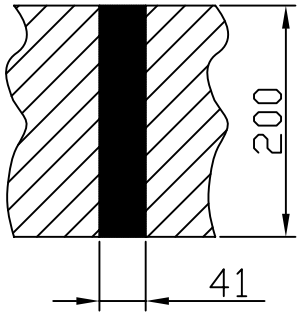
Horizontal sections

joint seal I



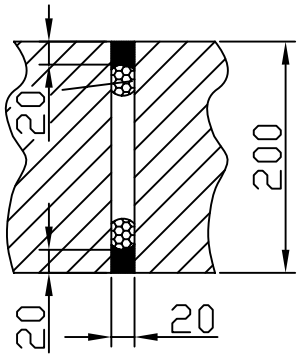
SOUDAFOAM FR

joint seal II



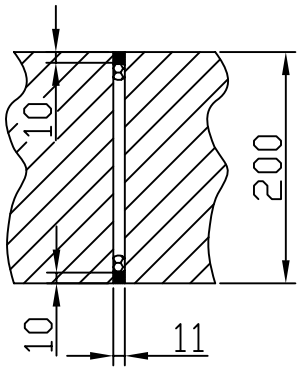
SOUDAFOAM FR

joint seal III



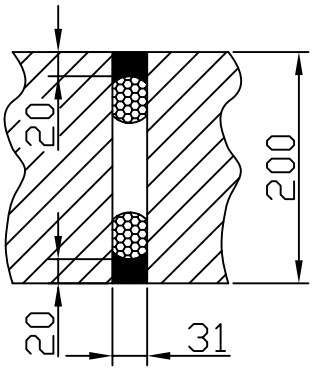
SOUDAL FIRECRYL 4H

joint seal IV



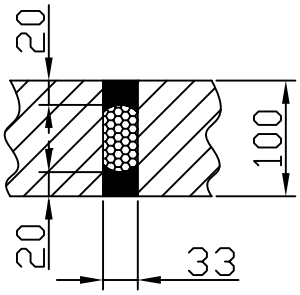
FIRE SILICONE B1

joint seal V



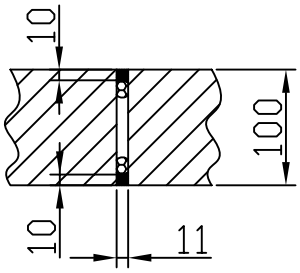
FIRE SILICONE B1

joint seal VI



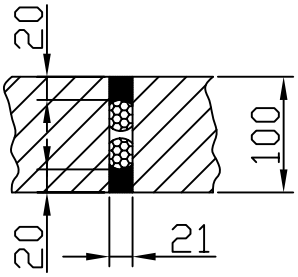
FIRE SILICONE B1

joint seal VII



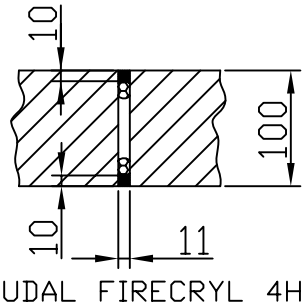
FIRE SILICONE B1

joint seal VIII



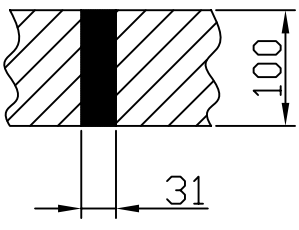
SOUDAL FIRECRYL 4H

joint seal IX



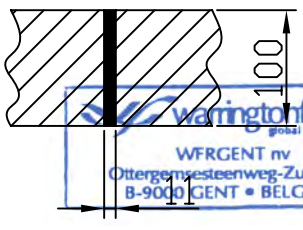
SOUDAL FIRECRYL 4H

joint seal X



SOUDAFOAM FR

joint seal XI



SOUDAFOAM FR