

# Synthefoc fire protection system



## DESCRIPTION

Synthefoc is a construction solution composed of polyurethane foam and a flame-retardant lining of high performance, one-component mortar.

The lining consists of cement, fillers, fibres and special additives designed to achieve a reaction to fire rating of B-s1,d0.

## APPLICATION ON VENTILATED FACADES

If the facade extends beyond 18 m vertically, there are two options:

A) Spray Euroclass E polyurethane and protect the entire exposed surface with a mortar. (See Figure 1)

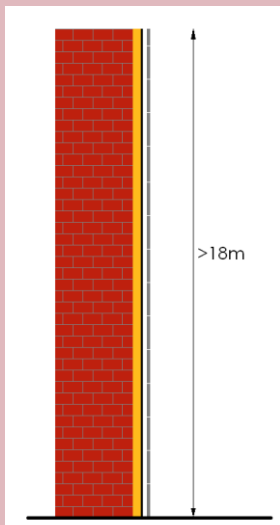


Figure 1

B) Spray Euroclass C-s3,d0 polyurethane and make an EI-30 fire barrier every 10 m of height shared by the chamber. (See Figure 2)

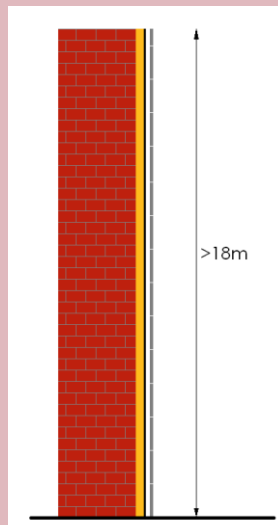


Figure 2

If the start is accessible but the ventilated facade does not extend beyond 18 m of height, you only need to protect the first 3.5 m of the accessible areas with a mortar applied over the Euroclass E foam. (See Figure 3)

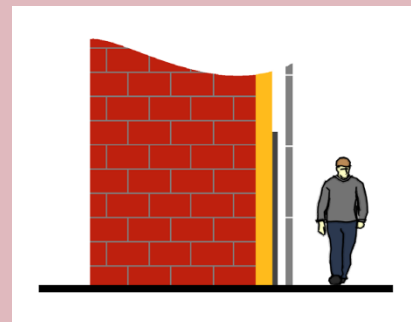


Figure 3

## MORTAR CHARACTERISTICS

Mixing water	50%
Powder density g/cm <sup>3</sup>	0.7
Compressive strength (28 days): Kg/cm <sup>2</sup>	> to 45+-5
Flexural strength (28 days): Kg/cm <sup>2</sup>	> to 20+-5
Adhesion on concrete: Kg/cm <sup>2</sup>	> to 20+-5
Adhesion to Poliuretano Spray S-303-HFO	Cohesive, breaks the polyurethane
Synthesia system reaction to fire rating	B-s1,d0
Application temperature	From +5°C to +35°C

## FOAM CHARACTERISTICS

Characteristics		Units	S-303HFO
Apparent core density	EN 1602	kg/m <sup>3</sup>	35 – 45
Closed cells	ISO-4590	%	≥ 90
Thermal resistance and thermal conductivity	EN 12667 EN 12939		See the data table
Compressive strength	EN 826	KPa	≥ 150
Reaction to fire	EN 13501-1	Euroclass	E <sub>(1)</sub>
Water absorption	EN 1609	kg/m <sup>2</sup>	≤ 0.2
Water vapour resistance factor (μ)	EN 12086	-	≥ 70
Dimensional stability <sup>(2)</sup>	EN 1604	%	DS(TH)2

(1) Test result valid for any thickness applied (test conducted on thickness of 60 mm)

(2) Level not stated

## DATA TABLE

e <sub>p</sub>	25	30	35	40	45	50	55	60	65
λ <sub>0</sub>	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
R <sub>0</sub>	0.90	1.10	1.25	1.45	1.65	1.80	2.00	2.20	2.35
e <sub>p</sub>	70	75	80	85	90	95	100	105	110
λ <sub>0</sub>	0.028	0.028	0.026	0.026	0.026	0.026	0.026	0.026	0.026
R <sub>0</sub>	2.55	2.75	3.05	3.25	3.45	3.65	3.85	4.00	4.20
e <sub>p</sub>	115	120	125	130	135	140	145	150	155
λ <sub>0</sub>	0.026	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
R <sub>0</sub>	4.40	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20
e <sub>p</sub>	160	165	170	175	180	185	190	195	200
λ <sub>0</sub>	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
R <sub>0</sub>	6.40	6.60	6.80	7.00	7.20	7.40	7.60	7.80	8.00

e<sub>p</sub> Thickness of foam in mm

λ<sub>0</sub> Stated aged thermal conductivity (W/mk)

R<sub>0</sub> Thermal resistance level (m<sup>2</sup> K/W)