

TEST REPORT

Your ref: 46917
Our ref: FPE/61334/20
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Page: 1 of 8
Date: 2020/12/15

P & H Protective Plaster Systems
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FIRE TESTING OF MATERIALS, COMPONENTS AND ELEMENTS USED IN BUILDINGS SANS 10177 Part 2: 2005 "FIRE RESISTANCE TEST FOR BUILDING ELEMENTS"

1 OBJECTIVE OF TEST

- 1.1 The sample as described under section 2 of this report was tested in accordance with SANS 10177-2: 2005 "Fire resistance test for building elements".

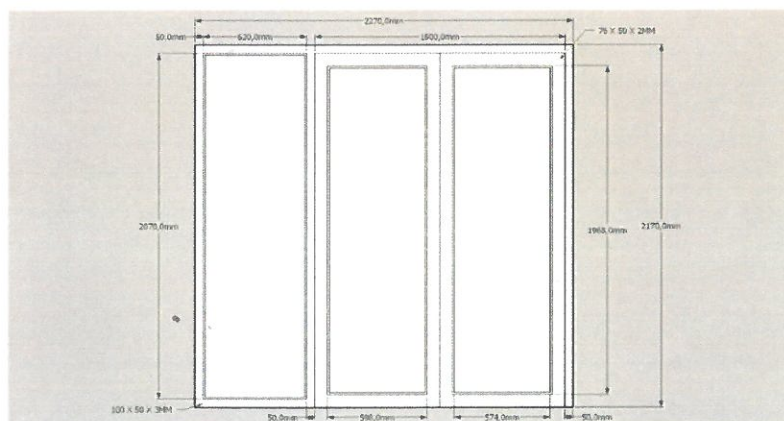
The system as described under section 2 of this report achieved a fire resistance rating of 70 minutes for stability and integrity. Where the addition of the measurement uncertainty to the calculated test results leads to an inconclusive statement of conformity, but the result is within the pass criteria of the specification, the outcome shall be stated as compliance.

2 DESCRIPTION OF SAMPLE

Test specimen consisted of a 2170 mm high by 2270 mm wide non-load bearing, steel framed glazed screen with a double door. The system was similar in appearance to a shop front.

Please refer to clause 8 "Components of tested system" on page 8 for detailed description of the tested system and its components.

Drawing 1.



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3 NATURE AND METHOD OF TEST

The fire resistance of the glazed screen was determined in accordance with SANS 10177: Part 2-2005 "Fire Resistance Test for Building Elements" as specified for fire resisting elements. Please note that only the Stability and Integrity requirements were accessed during this test. The insulation requirement was not accessed seeing that the glazing used permitted radiant heat (thermal radiation) to pass through it. Thus it can be said that the system as tested cannot conform to the insulation requirement. The aforementioned must be considered when assessing the tested system's suitability for a specific application with regards to the National Building Regulations.

4 DATE OF RECEIPT

2020/10/14.

DATE OF TEST

2020/11/12.

5 TEST APPARATUS

Table 1

Equipment	Serial number	Calibration certificate number	Re-Cal date	UoM
Vertical furnace	SABS PP&E0003143	Verified	N/A	± 2°C
Stopwatch	53935727	106513	2021-03-30	± 50 ms
Measuring tape	FHT	V1449	2021-08-20	± 0,6 mm

Photo 1: Photo of the exposed side of the specimen prior to testing.



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6 OBSERVATIONS

6.1 The following observations were made during the test:

Table 2

Time (min:sec)	Observation	Photograph No.
0	Test started.	2
15:00	Photo taken of unexposed side of system.	3
30:00	Photo taken of unexposed side of system.	4
41:00	Door closer starts dripping fluid.	-
45:00	Photo taken of unexposed side of system.	5
60:00	Photo taken of unexposed side of system.	6
71:00	Furnace anomaly. Furnace temperature drops below minimum allowable temperature.	7 (Photo taken at 70 minutes just prior to anomaly)
80:00	Photo taken of unexposed side of system.	8
105:00	Test terminated (prematurely due to earth leakage tripping)	9

6.2 The evaluation of the window during the test was as follows:

Table 3

Criteria	Requirement	Results
Stability	Deem any element to have failed if the test specimen collapses in such a way that it no longer continues to perform the function for which it was constructed.	Specimen did not collapse.
Integrity	Deem any element whose function is to separate two parts of a building to have failed if cracks, holes or other openings through which flames or hot gasses can pass are formed in the test specimen	No holes, cracks or openings formed.
Insulation	Deem any element whose function is to separate two parts of a building to have failed if the unexposed side of the separating element exceeds the initial temperature by more than 180 °C.	N/A (See clause 3 on page 2)
Overall achieved fire resistance rating in minutes.		70 minutes

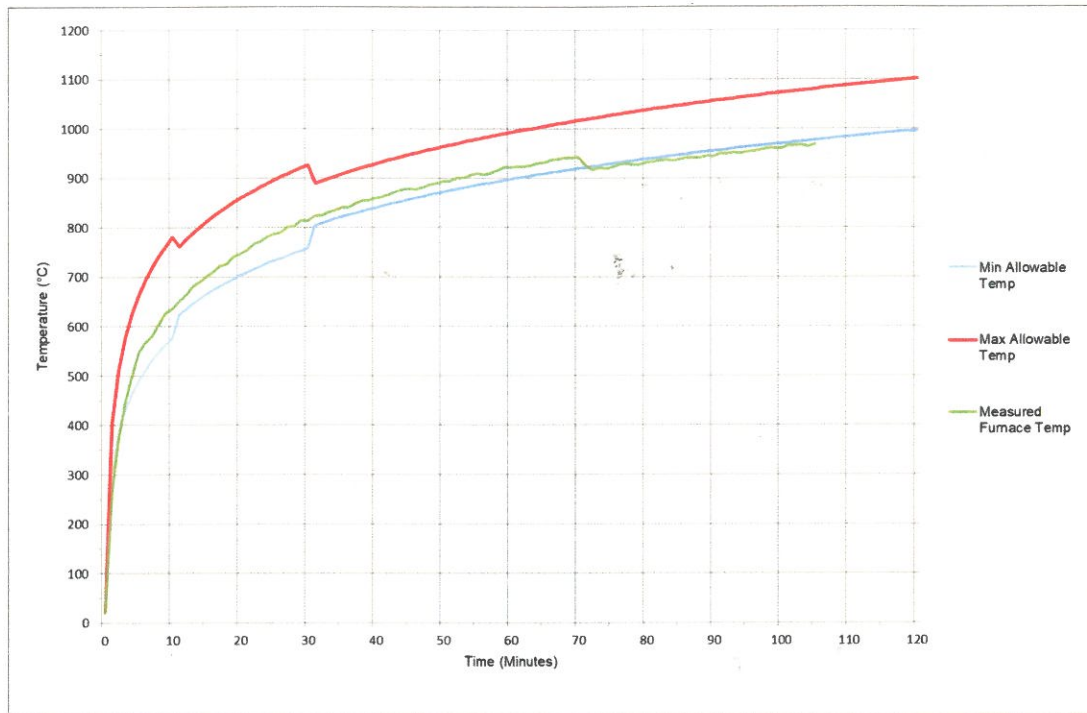
NOTE 1: During the 71st minute into the test there occurred an anomaly that resulted in the furnace temperature dipping and staying below the allowable minimum furnace temperature (See furnace time-temperature curve on next page). This was unplanned and out of the control of the test officers performing the test. We believe it was caused by dirty diesel fuel blocking some of the furnace burners resulting in the burners extinguishing during the test. **At 105 minutes the electrical grid that the furnace worked of tripped due to an earth leakage breaker tripping. This effectively stopped the test.** Due to the above unforeseen occurrence the testing authority is only able to access and report on the stability and integrity requirements up to 70 minutes into the test. All data and observations in this report that occurred after 70 minutes into the test are only for informative purposes as the furnace temperature was outside the allowable temperature range as specified in the test method.

NOTE 2: The sample complied with the stability and integrity requirements of the test method after the anomaly mentioned in Note 1 occurred until the test was eventually terminated. This however has no bearing on the achieved and reported test result due to the reasons mentioned in Note 1.

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Figure 1: Furnace temperatures recorded during the test:



7 PHOTOGRAPHS

Photo 2: Photo taken of the unexposed side of the system when the test commenced.



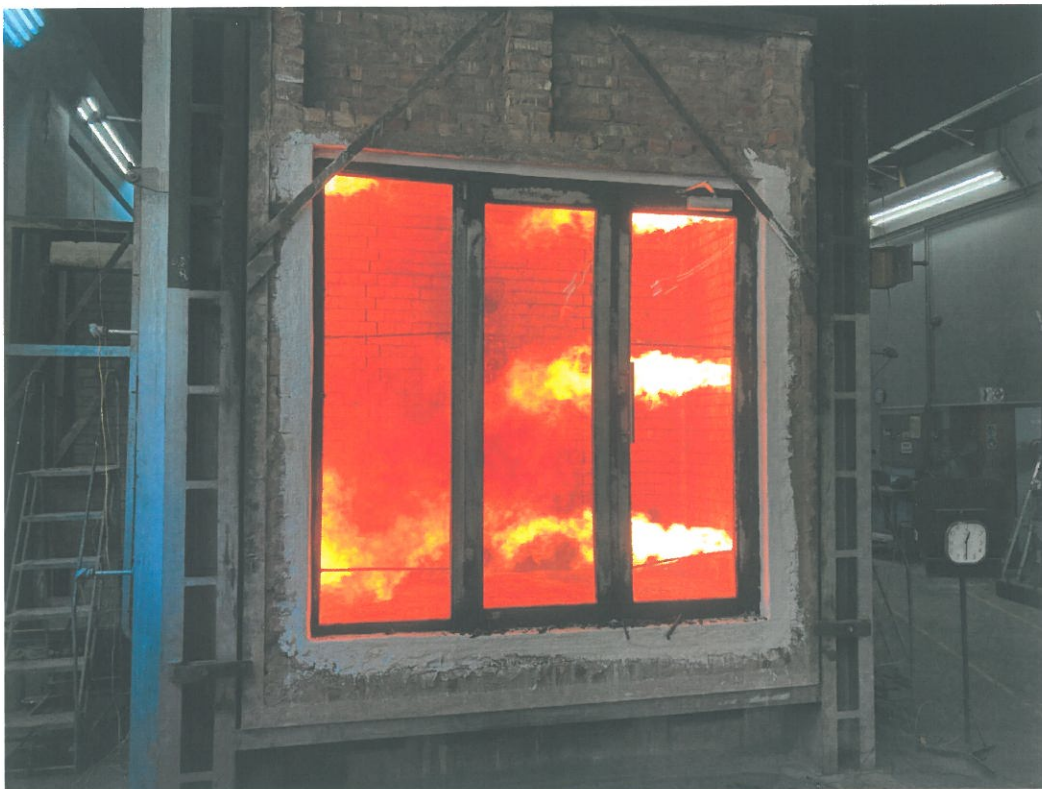
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Photos 3: Photo taken of the unexposed side of the system at 15 minutes.



Photo 4: Photo taken of the unexposed side of the system at 30 minutes.



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Photo 5: Photo taken of the unexposed side of the system at 45 minutes



Photo 6: Photo taken of the unexposed side of the system at 60 minutes.



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Photo 7: Photo taken of the unexposed side of the system at 70 minutes. Note glass softening but still intact. Also note deflection of framing material.



Photo 8: Photo taken of the unexposed side of the system at 80 minutes. Note smoke (unburnt diesel fumes) visible inside furnace due to anomaly at 71 minutes.



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Photo 9: Photo taken of the exposed side of system after termination of test and removal from the furnace. The cracks and holes visible on the glazing only formed after test termination when the class cooled down.



8 COMPONENTS OF TESTED SYSTEM (as provided by test sponsor)

Overall Size: 2270 mm Wide x 2170 mm High x 100mm Deep – 100x50x3mm Tubular Frame

Unit Description:

- Construction: Frame - 100 x 50 x 3mm Rectangular Tubing
Panels – 76 x 50 x 2mm Rectangular Tubing
Glazing Beads - 12 x 12 x 2mm Square Tubing
2 Pairs Heavy Duty Bullet Hinges + Stainless Steel Pins
- Glazing: 6.0mm Toughened Schott Pyran S Borofloat 120 min glass (2 x 580 mm by 1945 mm and 1 x 613 mm by 2062 mm)
- Seals: 10 mm ceramic fibre seals between glass, glazing beads and frame rebates.
Lpsk Intumescent seal at door leaf meeting stile.
- Ironmongery: 2 off 150mm Flush Bolts – Top & Bottom of Inactive Door Leaf
Deadlock with Knob Cylinder
Set of Pull Handles
Door Closer with insulation padding.

A Van Der Walt
Test Officer: Fire Protection Engineering

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Manager: Civil Laboratories

END OF REPORT

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