The Building Test Centre
Fire Acoustics Structures

The Building Test Centre
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Report Number **BTC 18175F**

A REACTION TO FIRE TEST REPORT COVERING A SINGLE BURNING ITEM TEST ON CONTEGO HS INTUMESCENT FIRE BARRIER PAINT (HIGH SOLIDS VERSION), CONDUCTED IN ACCORDANCE WITH EN 13823: 2010.

Test Date: 18th April 2013

www.btconline.co.uk

Customer: **Contego International, Inc.**
PO Box 684
Westfield
Indiana 46074

UKAS TESTING
No. 0296

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FOREWORD

This test report details a single burning item test conducted on Contego HS Intumescent Fire Barrier Paint (High Solids Version), in accordance with EN 13823: 2010.

The test sponsor was JPQ International Consultants Ltd.

Contego International, Inc. manufactured and Biokjemi Norge as Norsk Trepleie supplied the products used to construct the test specimens. The products were received for testing by the Building Test Centre in April 2013. The test specimens were prepared and inspected prior to testing by the Building Test Centre in April 2013.

The Building Test Centre played no role in the design or selection of the materials comprising the test specimens.

REPORT AUTHORISATION

Report Author	Authorised by
Paul Davies MEng. (Hons.), *Scientist*	**Mark Shortland** BSc. (Hons.), *Scientist*

Report date 19/04/13

The Building Test Centre will not discuss the content of this report without written permission from the test sponsor. The Building Test Centre retains ownership of the test report content but authorises the test sponsor to reproduce the report as necessary in its entirety only.

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TEST MATERIALS

Norbord OSB Sheathing Board

Nominally 12mm thick Norbord OSB Sheathing Board supplied by Biokjemi Norge as Norsk Trepleie pre-painted with Contego HS Intumescent Fire Barrier Paint (High Solids Version).

Measured thickness	12.307 mm
Measured density	671.3 kg/m³

The thickness and density were calculated using a sample without paint applied of sufficient size to be representative of the product without paint.

Contego HS Intumescent Fire Barrier Paint (High Solids Version)

The test material was supplied pre-painted onto a timber OSB sheathing board.

Measured thickness	0.491 mm

The thickness of the paint was calculated using the test specimens.

Where measurements could not be taken then weight and dimensions were provided by the customer or the manufacturer e.g. from material labelling. Material information was recorded according to procedure MAT/1.

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TEST SPECIMEN CONSTRUCTION

The boards were tested in a corner configuration comprising two wings, constructed using GypFrame 72C50 channel and GypFrame 70S50 studs.
The boards were screw fixed to the metal frame using 36mm Gyproc Drywall Screws at 300mm ± 30mm centres measured along the length of each supporting member.
A calcium silicate backing board was positioned freely against the GypFrame with a second metal framework secured with brackets behind it to hold it in place.

The description of the test material was provided by the customer and was checked for accuracy wherever possible.

TEST PROCEDURE

The test was conducted following procedure EN/13823 issue 5. The test specimens were conditioned at 23 ± 2°C and 50 ± 5% RH prior to testing.
The test specimen and the main burner were mounted on a trolley, which for the test, was placed under a hood. The trolley fitted into a frame, which supported this hood. The frame was mounted in a small chamber with two windows, allowing observations to be made from the outside during the test.
Three minutes prior to the testing period a secondary burner, located away from the specimen, was used to adjust settings and measure the heat output of the burner alone. The test specimen, consisting of two vertical wings forming a right-angled corner, was then exposed to the main burner for a period of 21 minutes. The flames were obtained by combustion of propane gas, injected through a sandbox.

The material was tested in an unmodified form.

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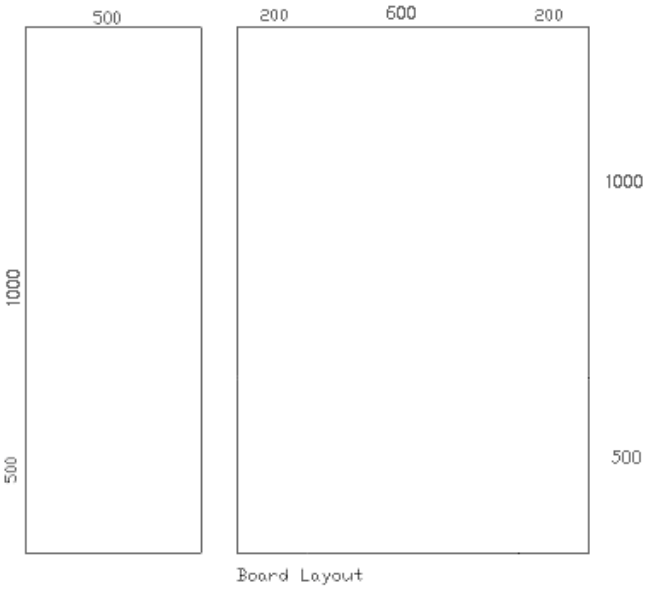
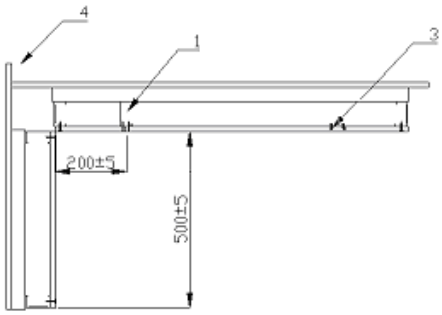
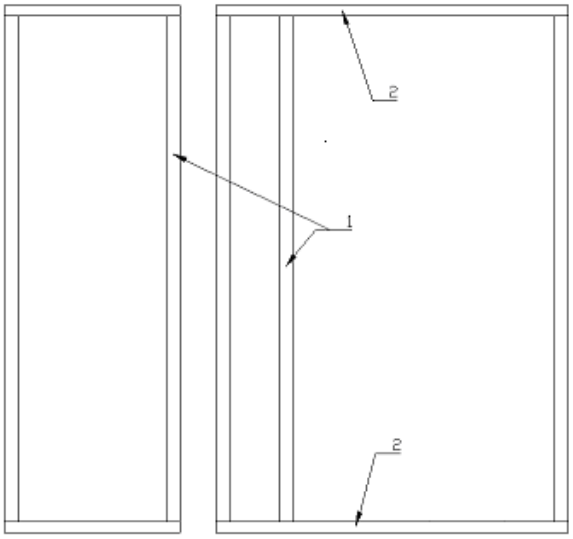
TEST SPECIMEN MOUNTING



Board Layout



Plan Detail



Stud Layout

1. 70S50 Stud
2. 72C50 Channel
3. Specimen
4. Backing Board

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TEST RESULTS

Specimen No.→	1	2	3	Graph reference
Total Heat Release of specimen in first 600 s of the exposure period (MJ)	1.03	0.92	0.88	b
Fire Growth Rate Index FIGRA 0.2MJ (W/s)	56.46	48.23	2.722	c
Fire Growth Rate Index FIGRA 0.4MJ (W/s)	3.04	0	2.722	-
Total smoke production from the specimen in first 600 s of the exposure period (m^2)	24.82	25.97	28.11	-
Smoke Growth Rate Index SMOGRA (cm^2/s^2)	0	0	0	f
Lateral flame spread < edge of specimen	Yes	Yes	Yes	-
Fallen droplet / particle	No	No	No	-
Fallen droplet / particle > 10 seconds	No	No	No	-
Other observations	None	None	None	-

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LIMITATIONS

The specification and interpretation of fire test methods are the subject of ongoing development and refinement. It is therefore recommended that, following further developments of the standard, the relevance of this report should be considered by the user. The laboratory that issued the report will be able to offer, on behalf of the legal owner, a review of the procedures adopted for a particular test to ensure that they are consistent with current practices, and if required may endorse the test report.

The test results relate only to the behaviour of the test specimens of a product under the particular conditions of test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

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APPENDIX 1 - TEST DATA

Specimen 1

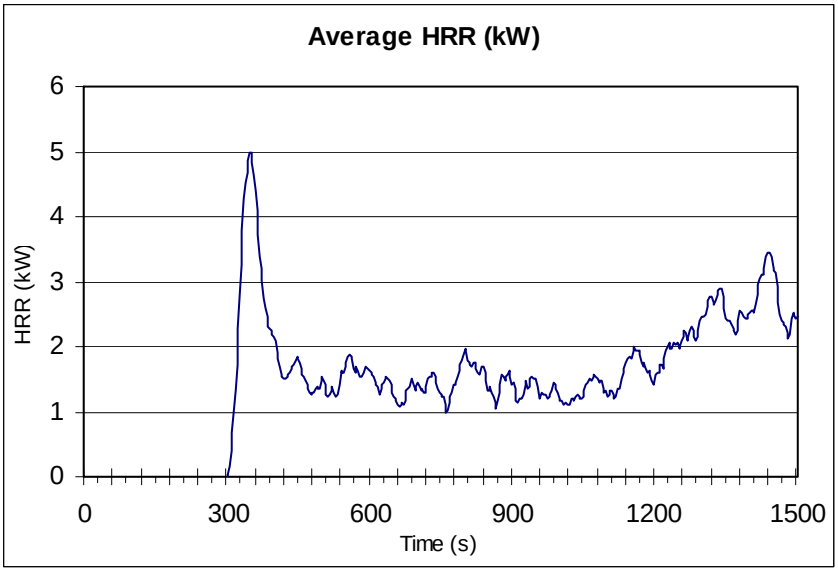

Figure 1a. Relative heat release for specimen 1.

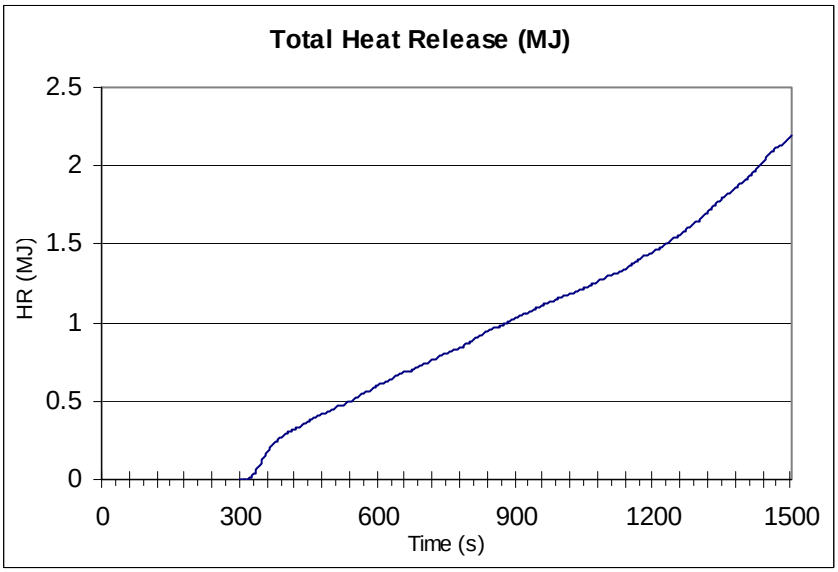

Figure 1b. Total heat release for specimen 1.

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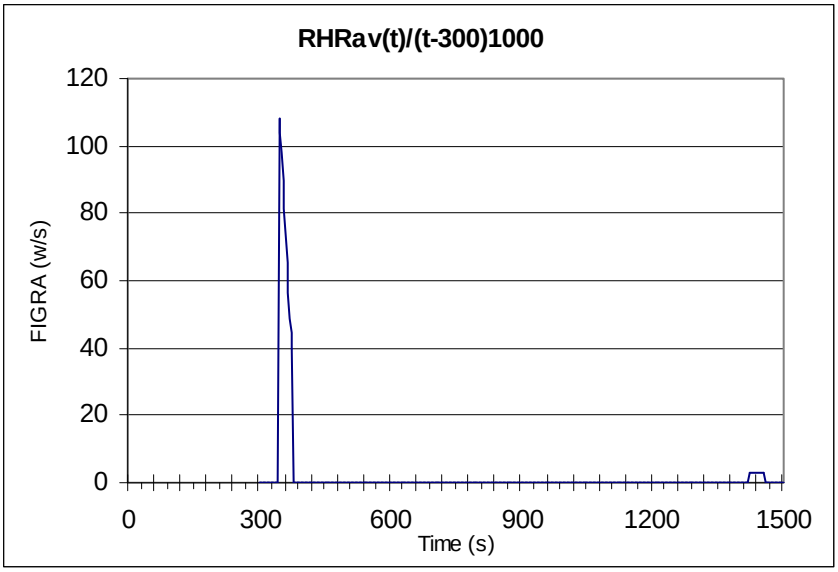

Figure 1c. Fire growth rate for specimen 1.

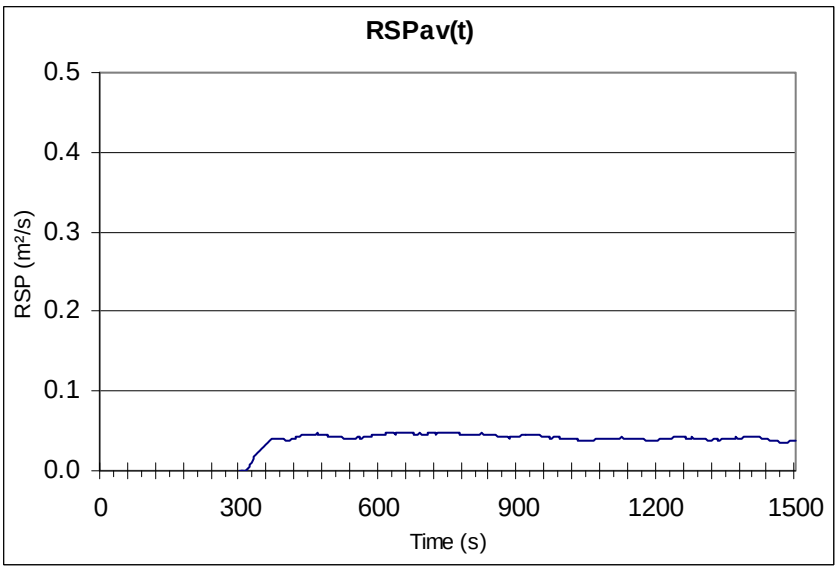

Figure 1d. Relative smoke production for specimen 1.

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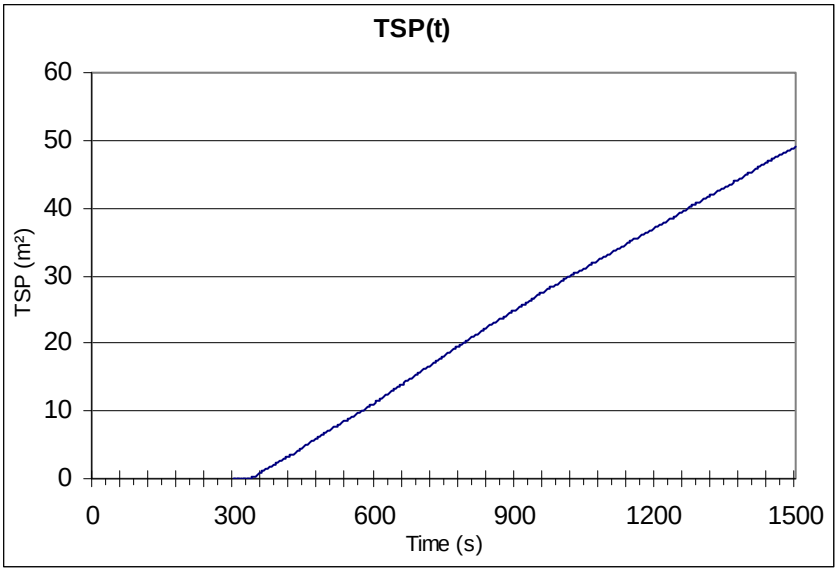

Figure 1e. Total smoke production for specimen 1.

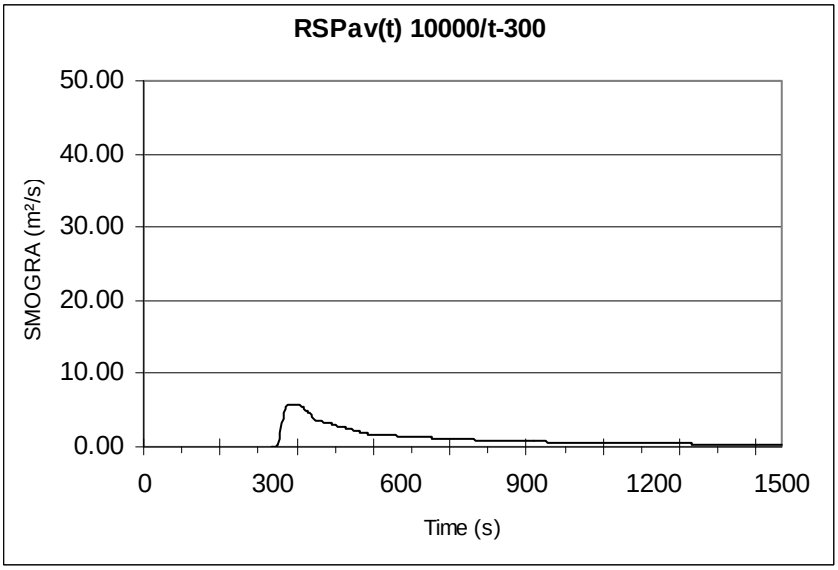

Figure 1f. Smoke growth rate for specimen 1.

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Specimen 2

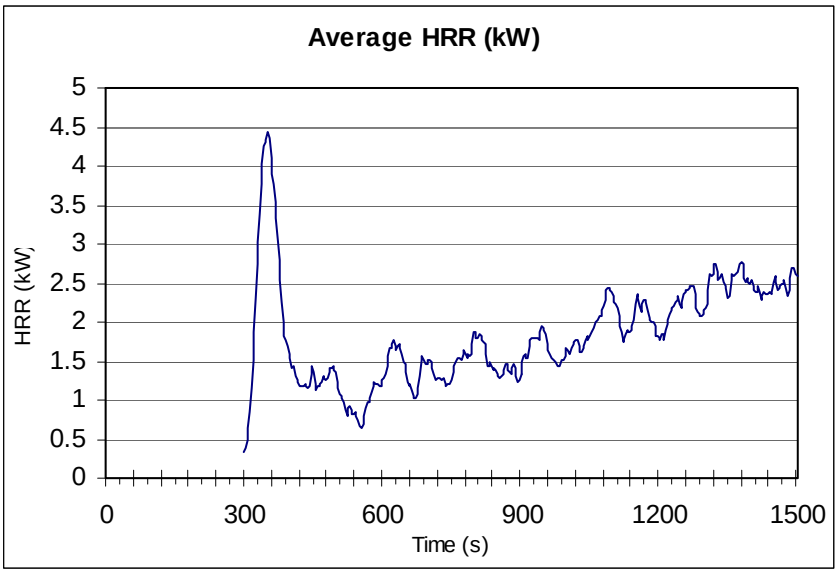

Figure 2a. Relative heat release for specimen 2.

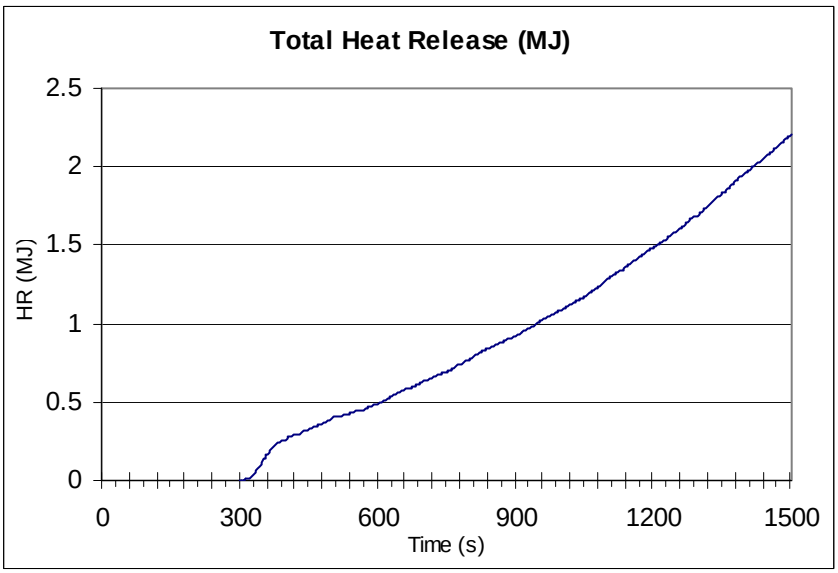

Figure 2b. Total heat release for specimen 2.

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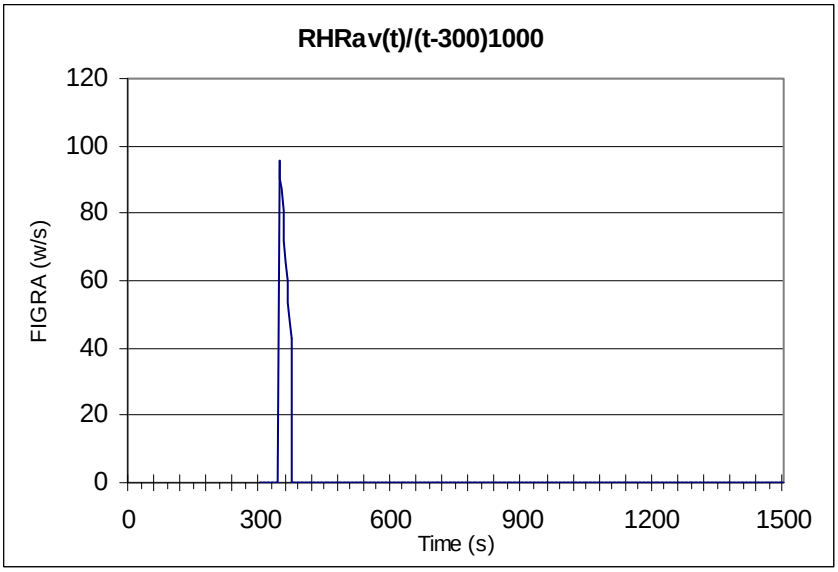

Figure 2c. Fire growth rate for specimen 2.

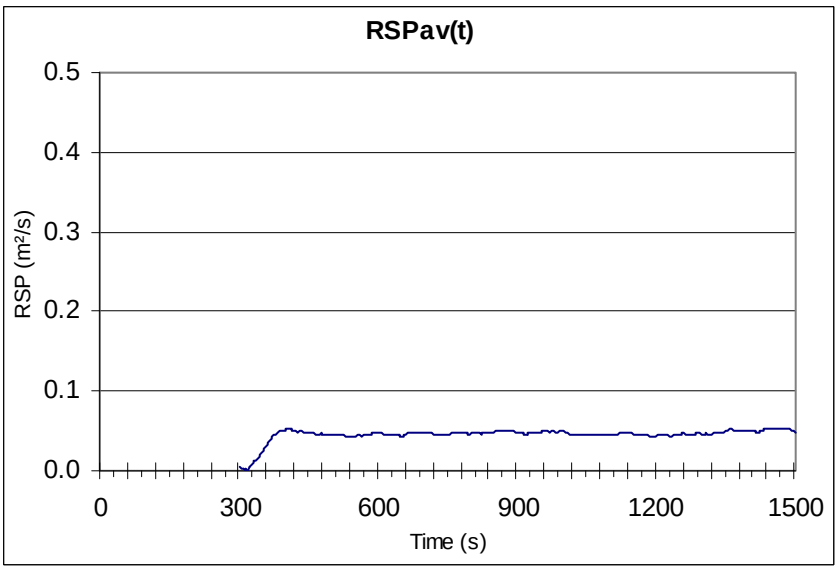

Figure 2d. Relative smoke production for specimen 2.

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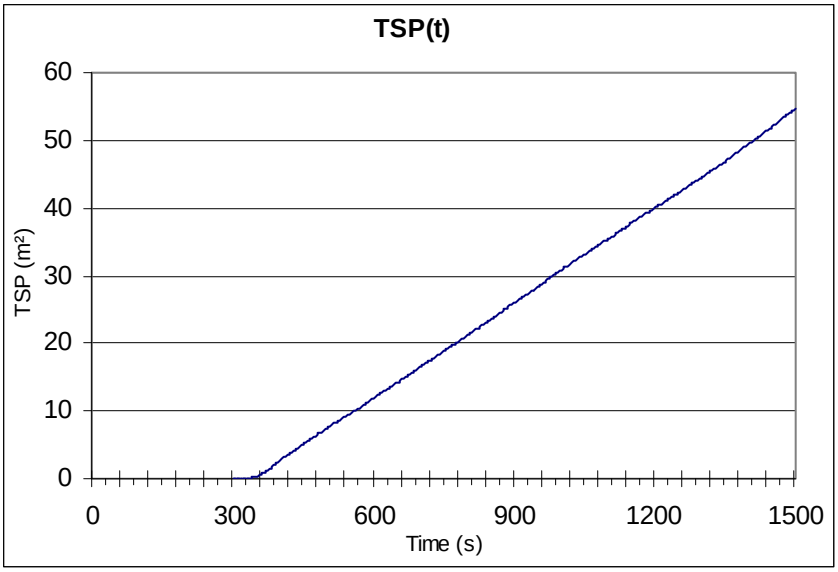

Figure 2e. Total smoke production for specimen 2.

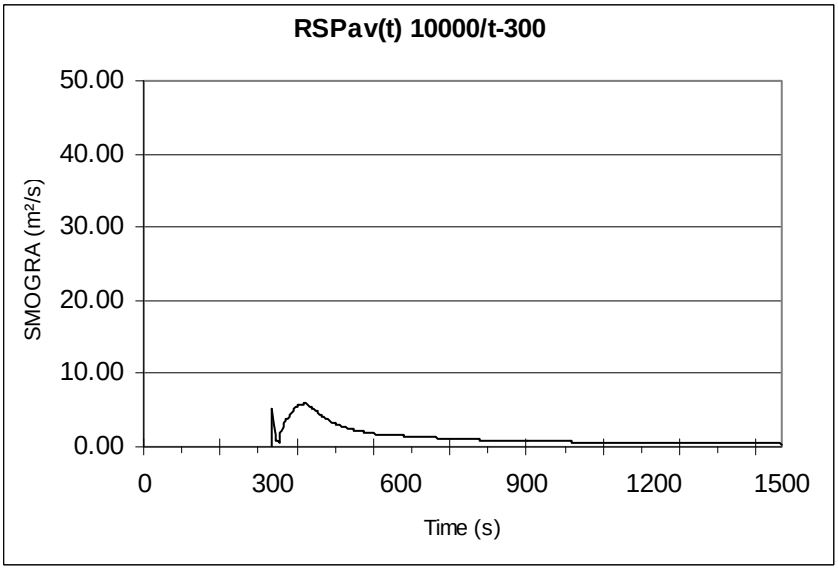

Figure 2f. Smoke growth rate for specimen 2.

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Specimen 3

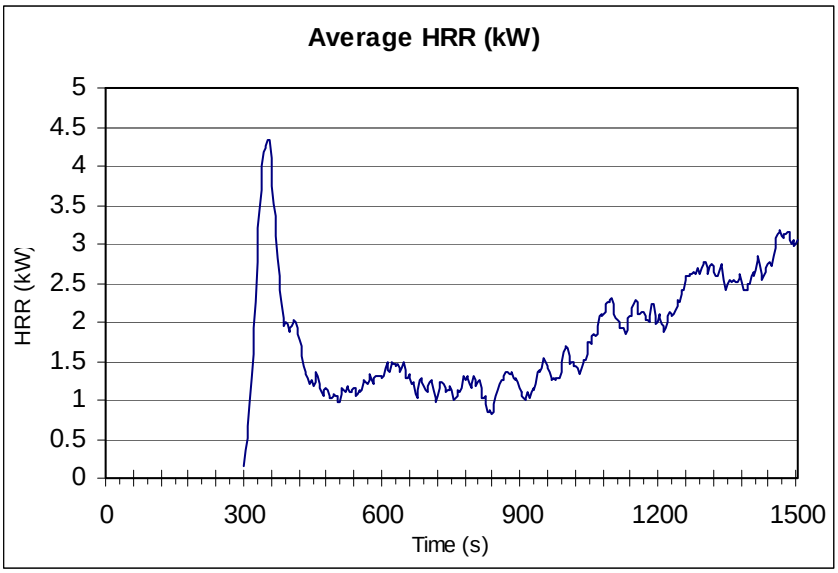

Figure 3a. Relative heat release for specimen 3.

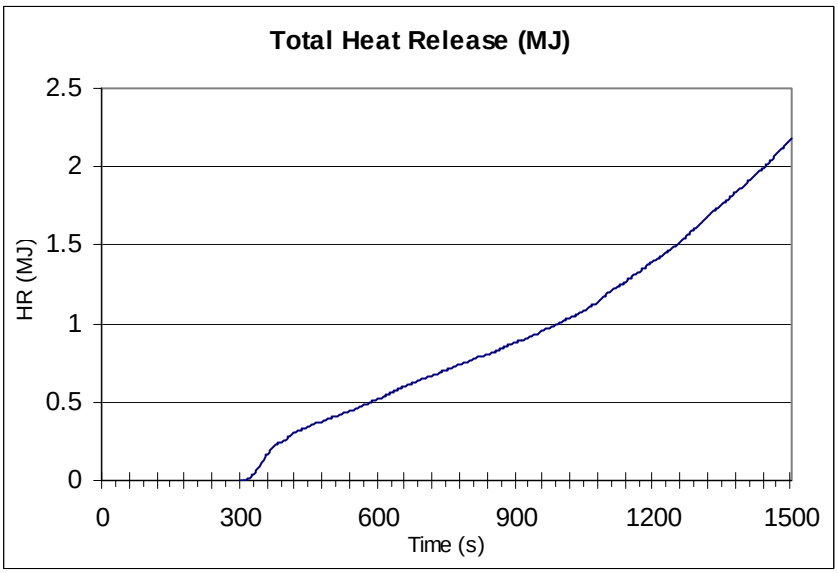

Figure 3b. Total heat release for specimen 3.

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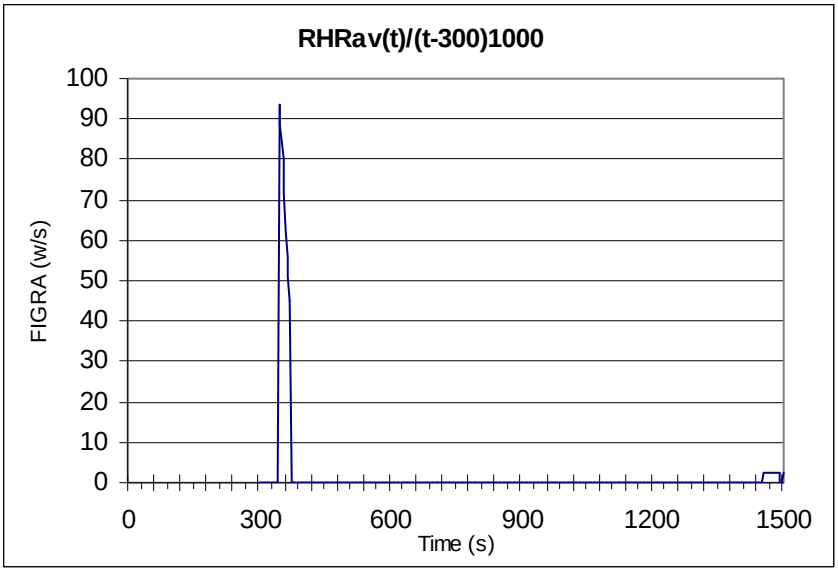

Figure 3c. Fire growth rate for specimen 3.

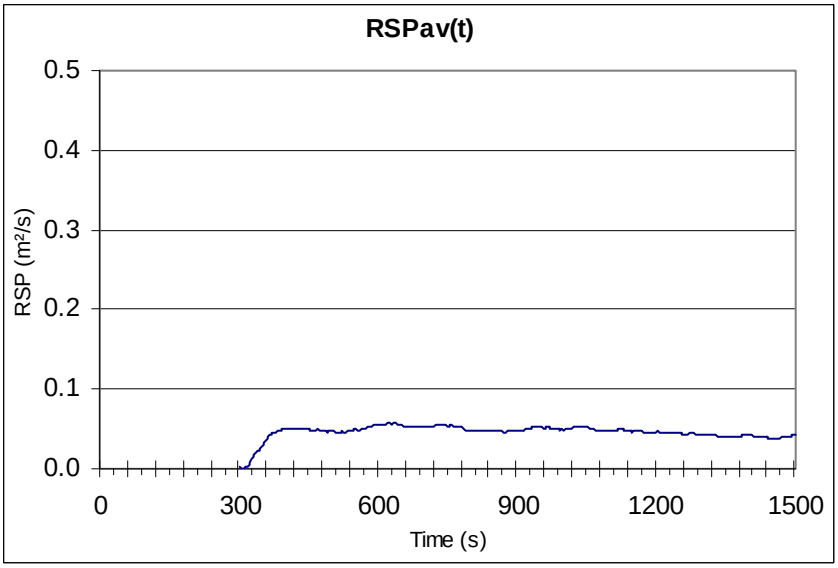

Figure 3d. Relative smoke production for specimen 3.

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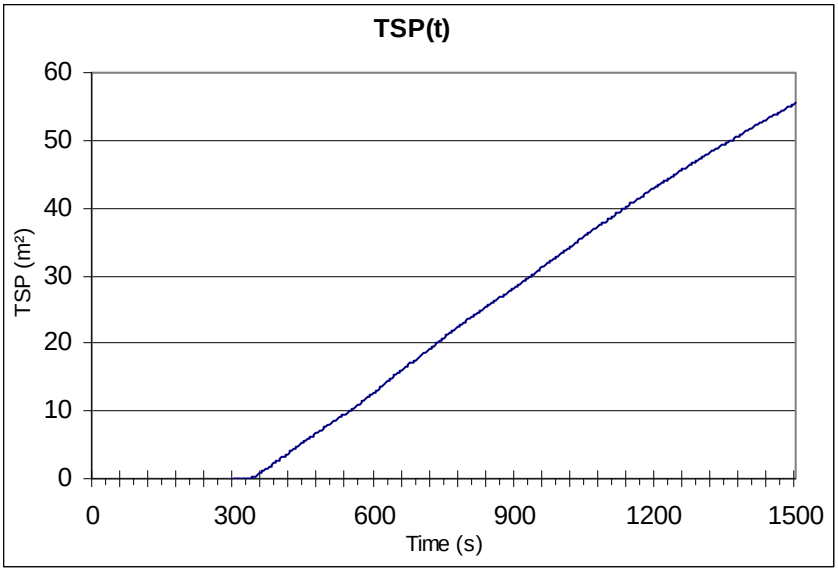

Figure 3e. Total smoke production for specimen 3.

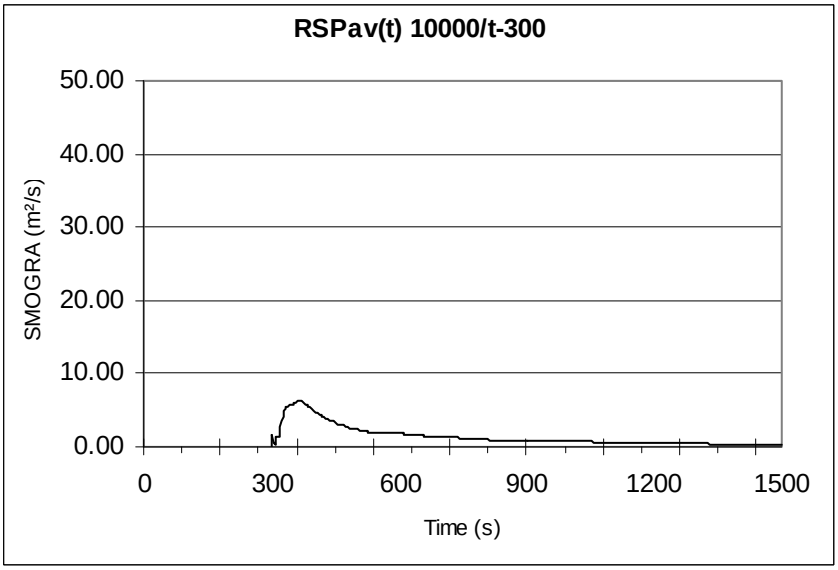

Figure 3f. Smoke growth rate for specimen 3.

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APPENDIX 2 – PHOTOS OF SPECIMENS BEFORE TESTING

Photograph 1. Exposed surface (specimen 1).

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Photograph 2. Exposed surface (specimen 2)

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Photograph 3. Exposed surface (specimen 3)

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Photograph 4. Exposed surface (specimen 1)

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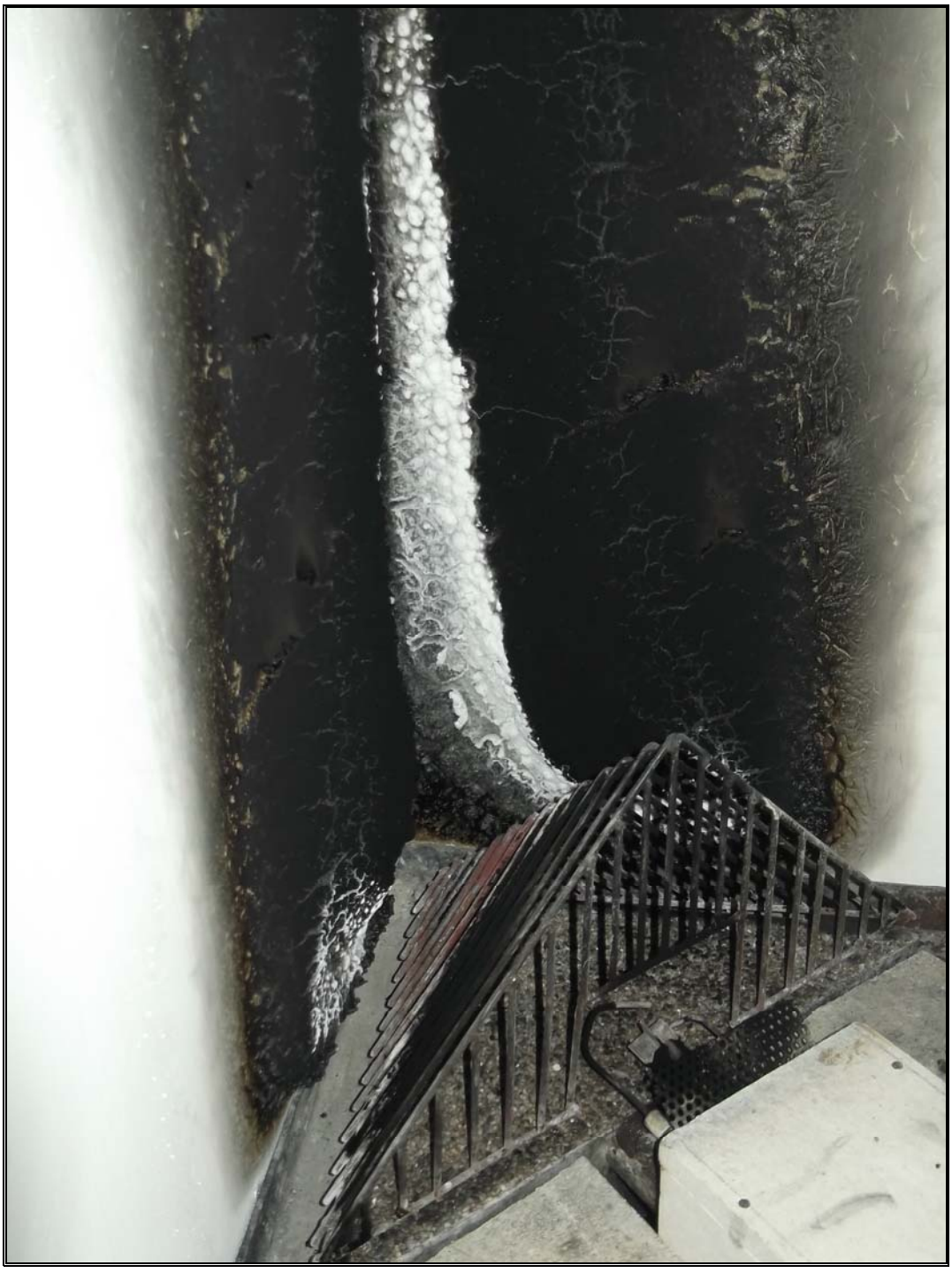

Photograph 5. Close-up on bottom corner (specimen 1)

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Photograph 6. Exposed surface (specimen 2)

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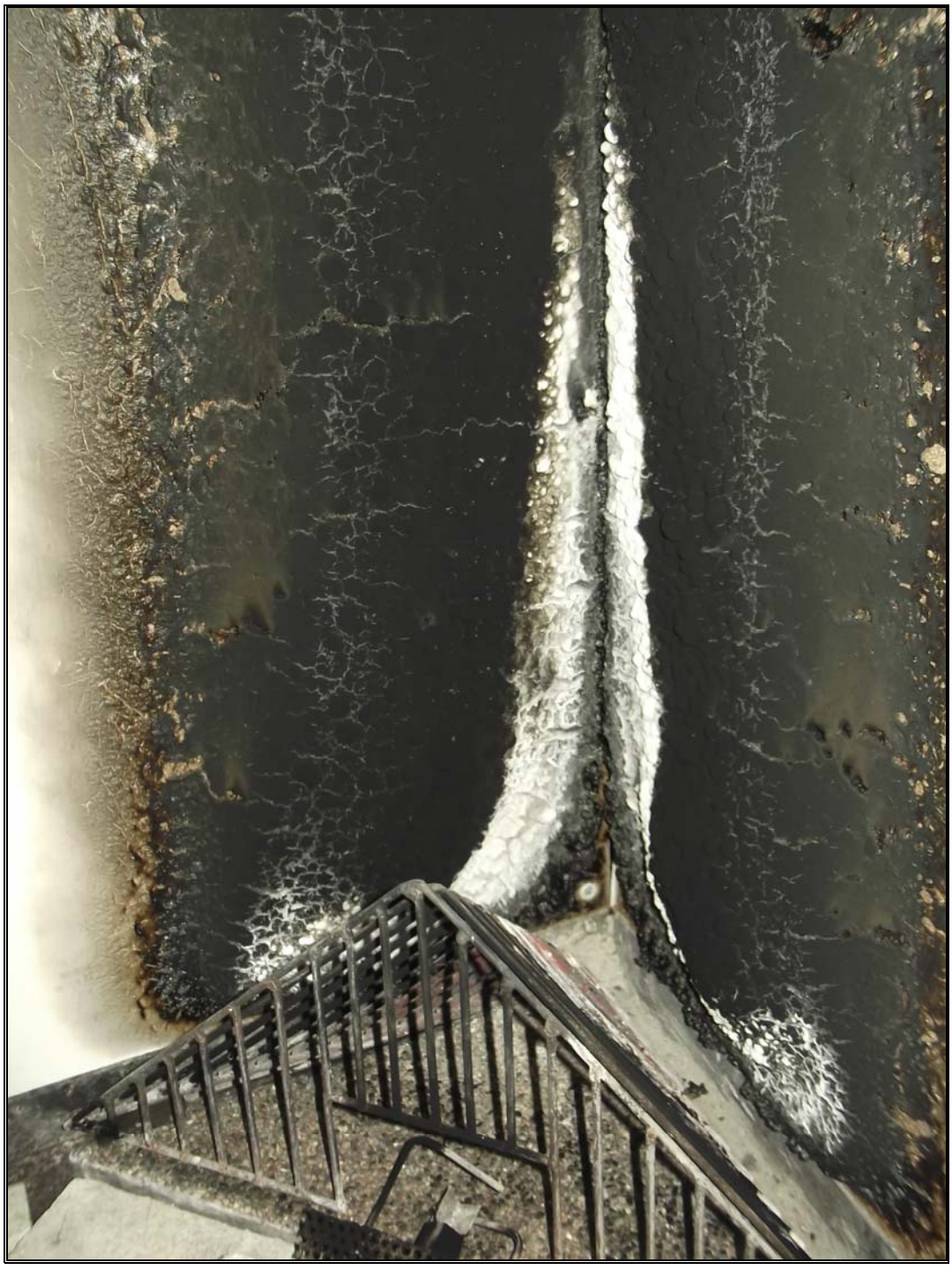

Photograph 7. Close-up of bottom corner (specimen 2)

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Photograph 8. Exposed surface (specimen 3)

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Photograph 9. Close-up of bottom corner (specimen 3)