

# IGNIS INDICATIVE TESTING

## C-COAT

IGNL-5103-04R Issue 01 Revision 00 [2021]

### 1 Introduction

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Ignis Labs undertook a pilot test of C-Coat of G Hain & H S Kin Consulting to determine the fire resistant level (FRL) in accordance with AS 1530.4-2014. The representative specimen was exposed to heat under controlled conditions in a furnace, which was operated to satisfy a specified time-temperature curve. The test demonstrates the abilities of the test specimen to resist the passage of flames and hot gases from one space to another and to maintain non-exposed surface temperature below the limits.

The purpose of the pilot test is to validate a variation, the direction of fire exposure and the specimen mounting may differ from the provisions at full scale. It is important to note that this indicative test report only provides the indicative result on the test specimen under the specific conditions specified in this report. This advice is not valid for regulatory purposes.

The results of the pilot test carried out are detailed below.

### 2 Summary

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<b>SPONSOR:</b>	G Hain & H S Kin Consulting
<b>ADDRESS:</b>	70 Piccadilly Street Riverstone NSW 2765
<b>SAMPLE IDENTIFICATION:</b>	Spray on insulation
<b>TRADE NAME:</b>	C-Coat
<b>DESCRIPTION OF MATERIAL:</b>	The sponsor describes the tested specimen as: Grey spray on insulation with the nominal thickness of 3mm.
<b>CONSTRUCTION OF TEST SPECIMEN:</b>	The specimen panel size was 600mm × 600mm with nominal thickness of 9mm. The specimen panel was composed of fibre cement with C-Coat sprayed on the fire exposed side. The specimen panel was surrounded by 9mm fibre cement to make up to the required test specimen size of 997mm × 997mm. Gyprock® multi-purpose joint compound was applied to seal the joints between between the specimen and surrounding FC panels. Kaowool was applied to the surrounding FC panels on the fire exposed side and to cover the joints between the specimen and surrounding FC panels on the non-fire exposed side. The test specimen was backed by 74mm steel frame with Rhondo Studs.
<b>TEST METHOD:</b>	The constructed wall specimen system was tested in accordance with Australian Standard 1530 Methods for fire tests on building materials, components and structures, Part 4: Fire-resistance tests for elements of construction.
<b>OBSERVATIONS:</b>	9:83      The average temperature of the specimen thermocouples exceeded the permissible limit of 140 °C above the initial temperature.

20:00	Smoke was observed emitting from the panel edge.
30:00	Charring was observed at the specimen edges.
46:00	Thermocouples were removed after 46mins to avoid damages.
50:00	Charring area expanded and covered the most of the specimen and the FC panels around the specimen.
58:37	Crack was observed in the middle of the specimen.
79:00	FC at the left corner around the specimens cracked.
80:00	Cotton pad was applied to the crack of the specimen and ignition was observed.
85:00	Test stopped.

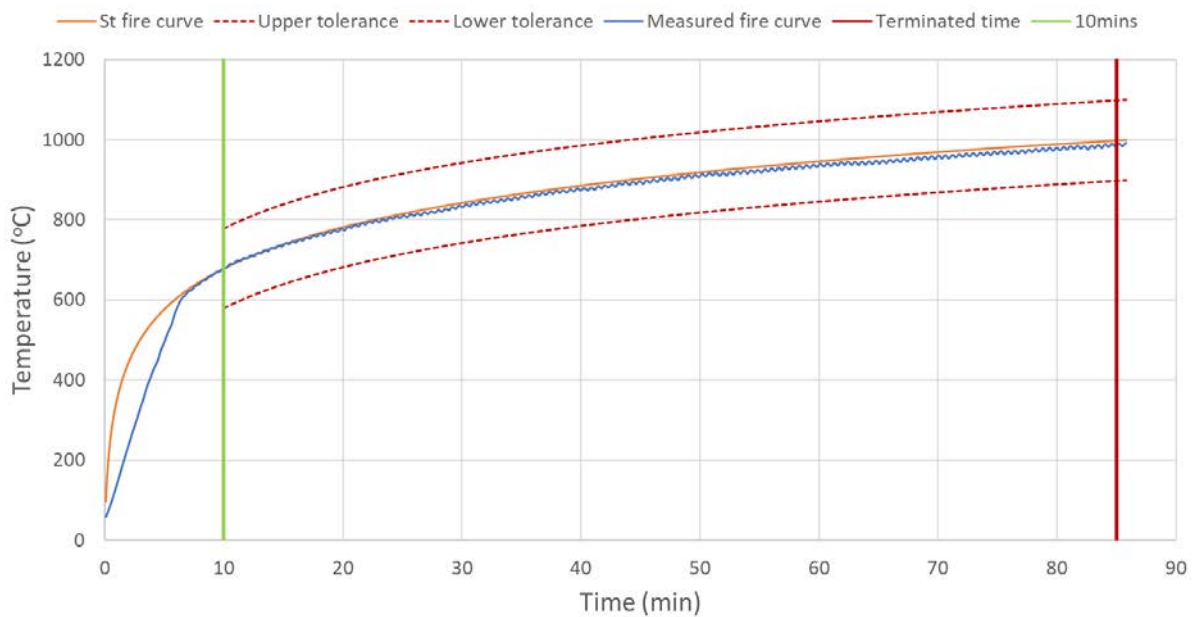
<b>TEST RESULTS:</b>	Structural adequacy	-
	Integrity	60 minutes
	Insulation	9 minutes

**FIRE RESISTANCE LEVEL: -/60/-**

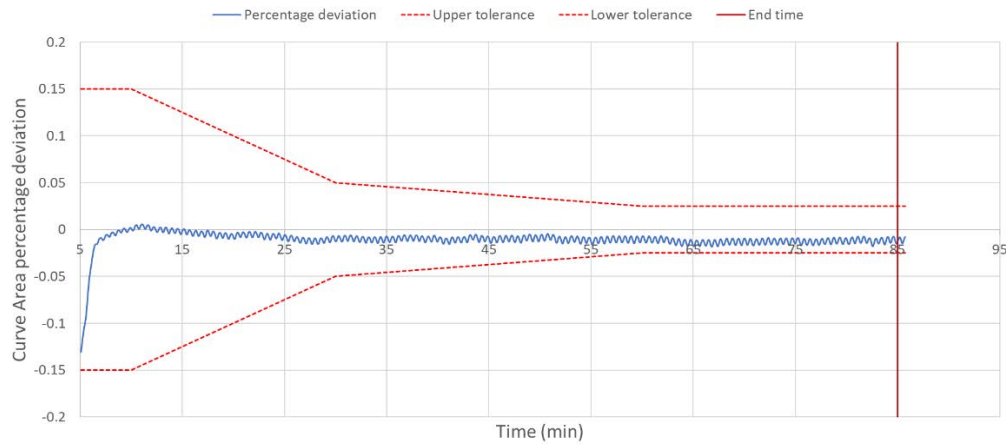
This report details methods of construction, the test conditions and the results obtained when the specific element of construction described herein was tested following the procedure outlined in as 1530.4. Any significant variation with respect to size, construction details, loads, stresses, edge or end conditions, other than that allowed under the field of direct application in the relevant test method, is not covered by this report. Because of the nature of fire resistance testing and the consequent difficulty in quantifying the uncertainty of measurement of fire resistance, it is not possible to provide a stated degree of accuracy of the result.

### 3 Graph of Test

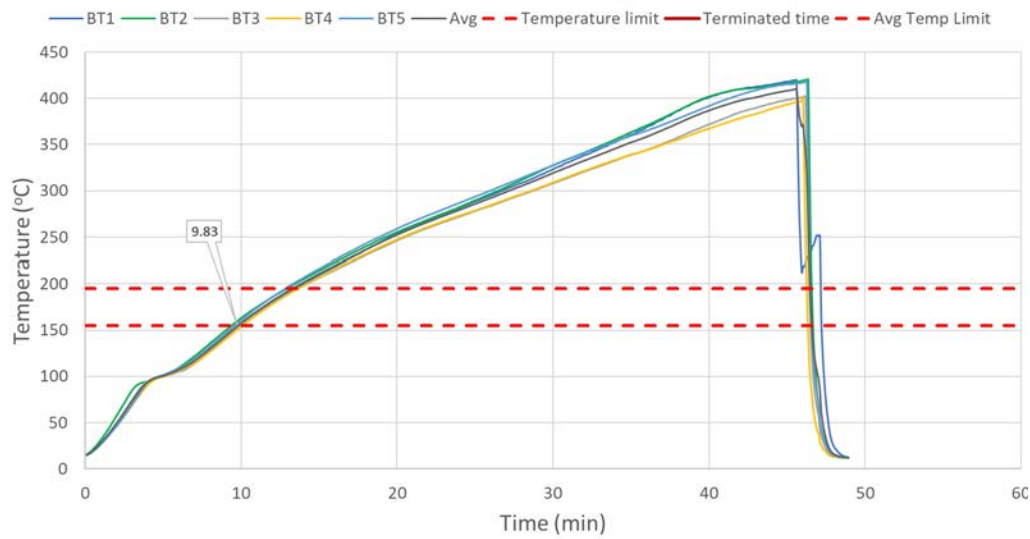
**FIGURE 1:**  
TEST FURNACE TEMPERATURES



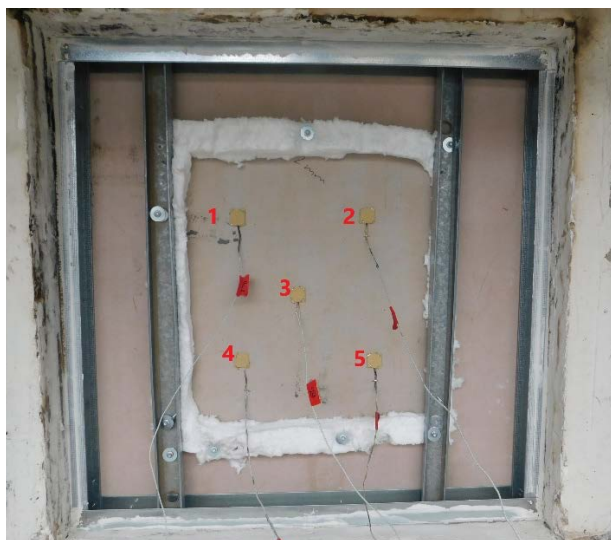
**FIGURE 2:**  
TEST FURNACE TEMPERATURE CURVE AREA PERCENTAGE DEVIATION



**FIGURE 3:**  
THERMOCOUPLE TEMPERATURES (THERMOCOUPLES WERE REMOVED AFTER 46MINS TO AVOID DAMAGES)



**FIGURE 4:**  
THERMOCOUPLE LOCATIONS



## 4 Specimen Images

FIGURE 5:

SPECIMEN BEFORE TEST (FIRE EXPOSED SIDE)



SPECIMEN BEFORE TEST (FIRE NON-EXPOSED SIDE)



FIGURE 6:

SPECIMEN AFTER TEST (FIRE EXPOSED SIDE)



SPECIMEN AFTER TEST (FIRE NON-EXPOSED SIDE)



Yours sincerely,

  
**Jessica Ying**  
Technical Lead Engineer