

TEST REPORT

The Intertek logo consists of the word "Intertek" in a white, sans-serif font, centered within a dark blue rounded rectangular background.

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RENDERED TO

International Carbide Technology Co. Ltd.
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Lu-Chu Hsiang Taoyuan 338, TW

AND

International Fireproof Technology Inc.
17528 Von Karman Avenue
Irvine, CA 92614

PRODUCT EVALUATED: 2x4 Wood Stud and OSB Wall Coated with
"DC333" EVALUATION PROPERTY: Fire Resistance

Report of testing a 2x4 wood stud and OSB wall coated with "DC333" for compliance with the applicable requirements of the following criteria: ASTM E119 and CAN/ULC S101-04, Standard Test Methods for Fire Tests of Building Construction and Materials.

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2 Introduction

Intertek Testing Services NA Ltd. (Intertek) has conducted testing for International Carbide Technology Co. Ltd. to evaluate their 2x4 wood stud and OSB wall coated with "DC 333" intumescent paint. Testing was conducted in accordance with ASTM E119 and CAN/ULC S101-07, *Standard Test Methods for Fire Tests of Building Construction and Materials*, for a 15 minute time period with the exception of measuring the temperature on the unexposed surface. As specified by the client the conditions of acceptance were to observe for through-openings and flaming on the unexposed side only. This evaluation began November 15, 2009 and was completed November 15, 2009. Testing was witnessed by Mr. Johnny Chang representing International Carbide Technologies.

3 Test Samples

3.1. SAMPLE SELECTION

Sample formulation and selection were witnessed and selected for testing by Intertek representative Dennis Lam, at the International Carbide Technology Co. Ltd. facility located at No. 1 – 17, Toa Chan 12, Lu-Chu Hsiang KERN-KO VILLAGE Taoyuan Hsien 228 Taiwan. The samples were received at the Evaluation Center on September 9, 2009.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

Frame:	10 ft. by 10 ft. 2x4 wood stud framed 16 in. OC
Substrate:	3/8 in. thick oriented strand board (OSB) wallboard substrate
Joints:	1/16 in. gaps
Intumescent Paint:	One coat DC 333 intumescent paint
Paint Thickness:	A single coat applied to a thickness of 15 mil (wet)

4 Testing and Evaluation Methods

4.1. CONDITIONS OF ACCEPTANCE

The term "through-opening" was defined as the ability for an opening to form where it is possible to see through the wall to the exposed side when looking perpendicular to the plane of the assembly at the location of the suspected opening. Flaming on the unexposed side of the wall assembly can not occur.

4.2. TEST WALL CONSTRUCTION

The wall dimensions were 10 ft. wide by 10 ft. high and constructed using nominal 2 in. by 4 in. wood studs, located 16 in. on centre with a single bottom plate and double top plate. The wall sheathing consisted of standard 3/8 in. thick OSB installed with the long dimension in the vertical orientation, 1/16 in. spacing between the horizontal joints and fastened with 2 in. common nails spaced 8 in. on centre. The finished wall system contained one horizontal joint located 2 ft. from the top of the panels. The "DC 333" intumescent paint was applied to the wall by the client on November 3, 2009 to a thickness of 15 mils (wet). The wall was then left to cure until the test date.

4.3. THE FIRE TEST

The test wall assembly was mounted in the full-scale vertical furnace mounting frame. Additional gypsum wallboard and steel studs were used to complete the test frame width of 12 ft., and the assembly was clamped to the front of the test furnace. See Appendix A – Photographs.

The moveable frame containing the test wall assembly was secured to the furnace. The pilot burners were ignited and burned until the temperature inside the furnace reached $20 \pm 2^{\circ}\text{C}$ ($70 \pm 3^{\circ}\text{F}$).

All burners were fired and timing was begun immediately upon achieving maximum high fire.

The temperatures inside the furnace are monitored by nine equally spaced thermocouples. These readings were recorded by a calibrated Fluke "Hydra Data Bucket" automatic data recorder every 1 minute and automatically displayed every 15 seconds. See Appendix B – Temperature Data.

The wall assembly was subjected to the standard time/temperature curve of CAN/ULC S101-04 and the exposed surface was observed. The test was continued for 15 minutes.

5 Testing and Evaluation Results

5.1. FIRE TEST OBSERVATIONS

Time (min.)	Exposed Side	Unexposed Side
1:40	Studs are discoloring	
2:30	Coating is intumescent	
4:30	Surface ignition on studs	
6:15	Surface ignition of wall	No change
11:00	No change	
12:00	Surface has re-ignited	
14:48		Pin hole appearing
15:00	Test discontinued	

5.2. POST-TEST OBSERVATIONS

The OSB appeared to be undamaged after the 15 minute test duration. All joints remained in tact and the firestop material remained in place.

6 Conclusion

The International Carbide Technology Co. Ltd. 2x4 wood stud and OSB wall coated with "DC 333" intumescent paint prevented flaming on the unexposed side of the entire area of the wall during the 15 minute fire exposure in accordance with ASTM E119 and CAN/ULC S101-07, *Standard Test Methods for Fire Tests of Building Construction and Materials*. Consequently, the wall system meets the requirements of preventing through-openings and flaming on the unexposed side of the wall as specified by the clients.

The conclusions of this test report may be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

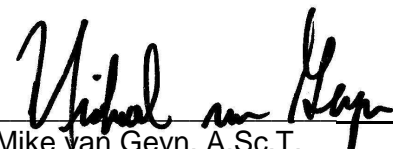
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APPENDIX A

Photographs



Unexposed Side Prior to the Fire Test



Exposed Side Prior to the Fire Test

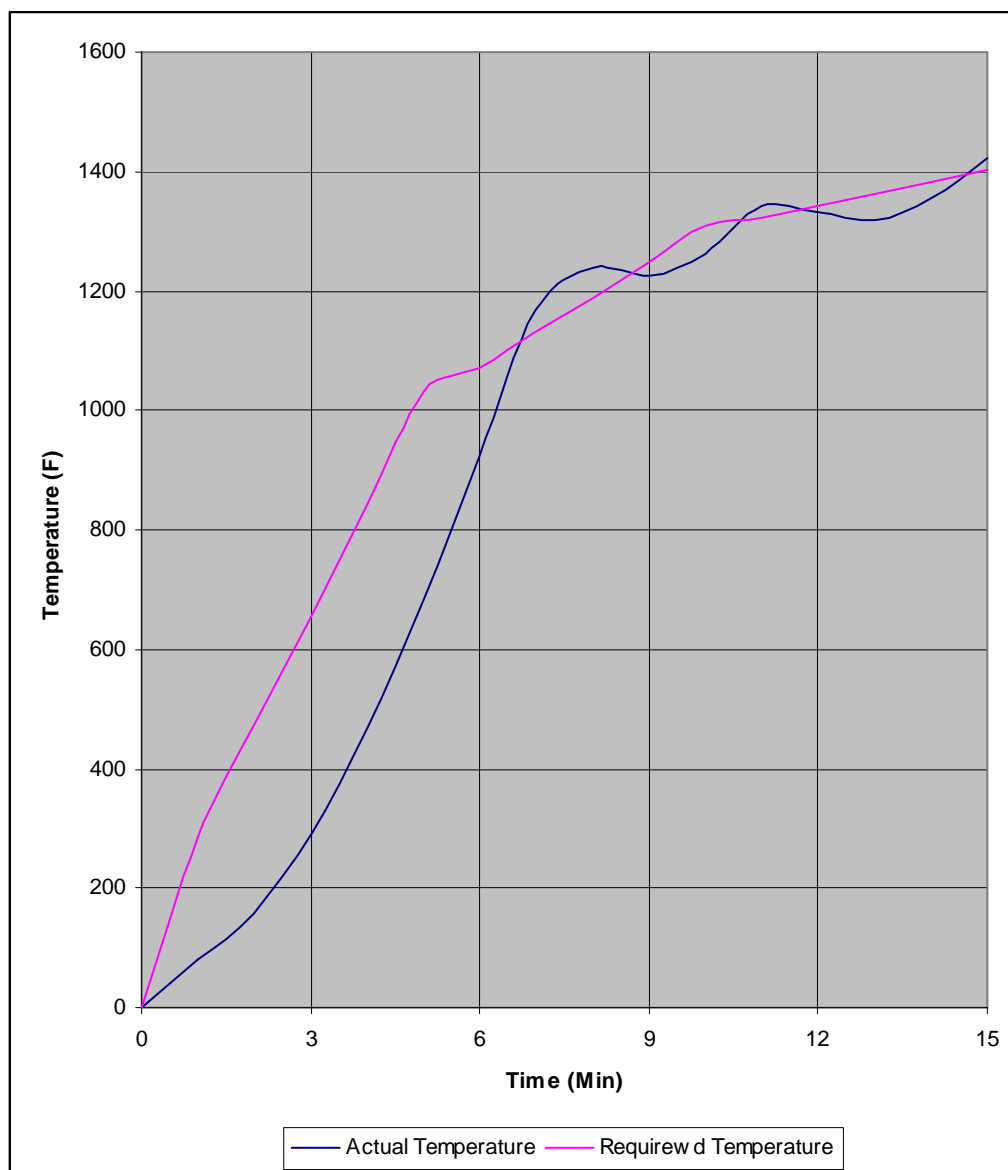


Exposed Side After the Fire Test

APPENDIX B

Temperature Data

TIME TEMPERATURE CURVE AVERAGE TEMPERATURE OF FURNACE DURING THE FIRE TEST



REVISION SUMMARY

DATE	PAGE	SUMMARY
November 18, 2009	--	Original Issue Date
December 8, 2009	1	Added 2 nd "Rendered To" Company