



Home Innovation
RESEARCH LABS™

Report of Results
for
National Fireproofing
Company
420 Wagner Road
Porter, IN 46304

Water Repellent Wood
Coating Tested
In Accordance With
ASTM D5401

December 08, 2015

Report 4162-037-
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Water Repellent Wood Coating Tested In Accordance With ASTM D5401

Prepared for

National Fireproofing Company
420 Wagner Road
Porter, IN 46304

Prepared by

Home Innovation Research Labs
400 Prince Georges Boulevard
Upper Marlboro, MD 20774-8731
www.homeinnovation.com

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Background

National Fireproofing Company contracted Home Innovation Research Labs concerning the testing of their Flamex PF-2 wood coating for water repellency efficiency (WRE) in accordance with ASTM D5401 “*Standard Test Method for Evaluating Clear Water Repellent Coatings on Wood*”. There is only one type of material to be tested.

An agreement was entered into November 05, 2015, between National Fireproofing company and Home Innovation.

Samples

One bottle of 8 oz. liquid coating material, labeled as “Flamex PF-2” as shown in Figure 1 was received for the water repellent efficiency testing per the ASTM D5401 test method. All 8 oz. material was used for the testing per National Fireproofing Company’s instruction.



Figure 1 Flamex PF-2 Wood Coating Test Material

“The instructions to treat the test samples are as follows:

Apply a thin even coat of Flamex PF-2 using a spray-on method to one side and edges of all 2x4 test samples at once. Allow to penetrate for a few minutes before repeating the application to the opposite sides and edges. Continue this process for the entire eight ounces of Flamex PF-2. This product must cure for a minimum of 24 hours before testing.”

Test Method

The test method followed is ASTM D5401 using an environment chamber as shown in Figure 2, a calibrated scale, and a spray bottle as shown in Figure 3.



Figure 2 Environmental Chamber



Figure 3 Sprayer

Total ten (10) specimens were prepared for the testing: five (5) uncoated and five (5) coated specimens, with Southern Yellow Pine 2x4 lumber. Figure 4 shows the five specimens ready for coating, and Figure 5 shows specimens after being coated.



Figure 4 Five 2x4 Wood Specimens Right Before Coatings Applied



Figure 5 Five 2x4 Wood Specimens Right after Coatings Applied

The only deviation from ASTM D5401 is the method that the water repellent coating was applied to the five specimens. Instead of immersion of the five test specimens in the water repellent coating for 30 s, coating spray method as instructed by the National Fireproofing Company was followed.

Results

The water repellent efficiency (WRE) results are listed in Table 1 below. The average WRE of 65.0% was achieved for the Flamex PF-2 coating.

Table 1 WRE Test Results for Flamex PF-2 Wood Coating

Untreated Specimen ID	Weight After Water Contact, A (g)	Weight Before Water Contact, B (g)	Weight Difference, A - B (g)	
C1	440.56	411.18	29.38	
C2	446.06	416.50	29.56	
C3	466.90	437.96	28.94	
C4	483.24	457.16	26.08	
C5	459.76	432.62	27.14	
Average	459.30	431.08	28.22	
Treated Specimen ID	Weight After Water Contact, C (g)	Weight Before Water Contact, D (g)	Weight Difference, C - D (g)	Water Repellent Efficiency - WRE (%)
T1	448.32	437.10	11.22	61.8%
T2	480.60	471.68	8.92	69.8%
T3	487.80	478.36	9.44	67.4%
T4	476.00	465.58	10.42	60.0%
T5	464.44	455.24	9.20	66.1%
Average	471.43	461.59	9.84	65.0%

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