

ROYSONS CORPORATION FIRE TEST REPORT

SCOPE OF WORK

NFPA 286 TESTING ON 2-PLY 20 oz. NW VINYL WALCOVERING WHEN INSTALLED TO AN INTERIOR WALL

REPORT NUMBER

103551102SAT-003

TEST DATE(S)

07/10/18 [Click here to enter a date.](#)

ISSUE DATE

07/16/18

[REVISED DATE]

N/A

RECORD RETENTION END DATE

07/16/28

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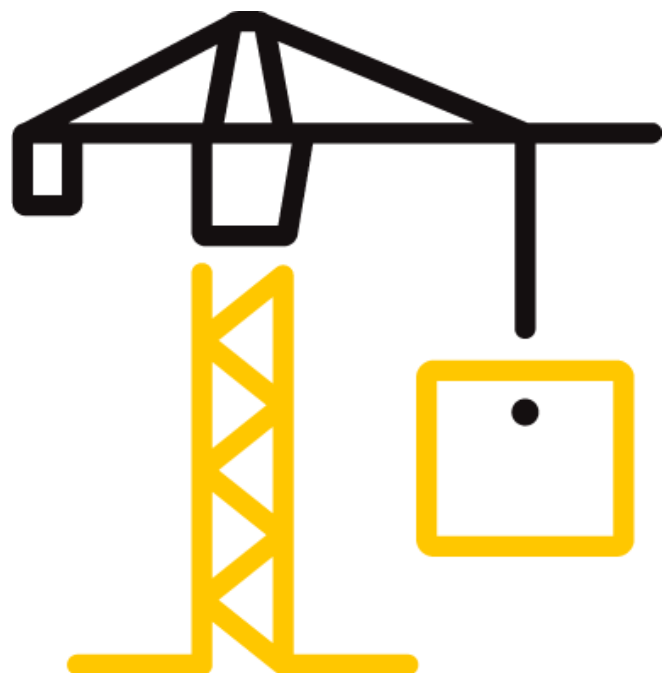
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Date: 07/16/18

REPORT ISSUED TO

Mark Rain

Roysons Corporation

40 Vanderhoof Avenue

Rockaway, NJ 07866

SECTION 1

SUMMARY

Intertek Building & Construction (B&C) was contracted by Roysons Corporation, 40 Vanderhoof Avenue, Rockaway, NJ 07866 to evaluate the contribution of wall interior finish to room fire growth of an assembly containing 2-PLY 20 oz. NW VINYL WALCOVERING. Results obtained are tested values and were secured by using the NFPA 286 test method. A summary of test results is reported herein and the complete graphical test data is included in this report.



Product Type: Vinyl Wallcovering

Series/Model: 2-ply 20 oz. NW

Summary of NFPA 286 Test Results

The assembly described and tested in this report **did** meet the requirements of acceptance criteria for interior wall or ceiling finishes of 2015 International Building Code Section 803.1.2.1 and NFPA 286 Annex C. Construction summary of the full assembly is located in Section 5 of this test report.

For INTERTEK B&C:

COMPLETED BY:	Troy G. Bronstad	REVIEWED BY:	Herbert W. Stansberry II
TITLE:	Senior Associate Engineer	TITLE:	Engineering Supervisor
SIGNATURE:		SIGNATURE:	
DATE:	07/16/18	DATE:	07/17/18

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SECTION 2**TEST METHOD**

The assembly was evaluated in accordance with the following:

NFPA 286-15, *Standard Methods of Fire Tests for evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth*

International Building Code (2015), *Chapter 8, Section 803.1.2.1*

SECTION 3**TEST PROCEDURE**

A calibration test is run within 30 days of testing any material as specified in the standard. All instrumentation is zeroed, spanned and calibrated prior to testing. Testing was performed on 07/10/2018 in accordance with NFPA 286 test method. Ambient conditions prior to the initiation of the test were 72°F and 70% relative humidity. The specimen is installed and the ignition source is placed in a corner adjacent to the room opening. The ignition source for the test is a gas burner with a nominal 12 in. by 12 in. porous top surface of a refractory material. The burner used at this laboratory is filled with a minimum 4-inch layer of Ottawa sand. The collection hood exhaust blower is turned on and an initial flow is established. The gas sampling pump is turned on and the flow rate is adjusted. When all instruments are reading steady state conditions, the computer data acquisition system and video equipment is started. The gas supply to the burner is C.P. grade propane. The burner is capable of producing a gross heat output of 40±1 kW for five minutes followed by a 160±5 kW for ten minutes. The flow rate is metered throughout the test. The gas burners are controlled with mass flow meters to control the volume of gas to match the heat outputs of the standard. Ambient data is taken then the burner is ignited at a fuel flow rate that is known to produce 40 kW of heat output. This level is maintained for five minutes at which time the fuel flow is increased to the 160 kW level for a 10-minute period. During the burn period, all temperature, heat release and heat flux data is being recorded every 6 seconds. Physical flame propagation observations are recorded by the technician in conjunction with the test data. At the end of the fifteen minute burn period, the burner is shut off and all instrument readings are stopped. Post-test observations are made and this concludes the test. All observations are recorded in the table located in Section 6.

Material Source/Installation

The components of the test assembly were provided by the client except for the core wall components that were acquired and assembled by Intertek-SAT personnel. The Vinyl wall covering was applied on 06-26-18. Product was received at Intertek-SAT testing facility on 06-15-18 and receive sample ID#1806151113-001.

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SECTION 4

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Troy Bronstad	Intertek B&C
Tony Jimenez	Intertek B&C
Duane Scribner	Intertek B&C

SECTION 5

TEST ASSEMBLY DESCRIPTION

The interior dimensions of the floor of the fire room, when the specimens are in place, measures 8 feet, by 12 feet. The finished ceiling is 8 feet \pm 0.5 inches above the floor. The four walls are at right angles defining the compartment. The compartment contains a 30 inches wide (\pm ¼ inch) by 80 inches high (\pm ¼ inch) doorway in the center of the 8 feet by 8 feet wall on the edge of the hood calorimeter apparatus. No other openings are present to allow ventilation. Below is a detailed description of the assembly:

Gypsum Cladding

The full interior surfaces of the wall assemblies were clad with 5/8 in. thick gypsum board meeting ASTM C 1396. The gypsum board was fastened to the wall framing with #6 x 1-1/4 in. long, bugle head, self-drilling screws with a nominal spacing of 8 in. around the board perimeter and 12 in. in the field. Drywall orientation was with the run edge running parallel with the framing and the cut edge perpendicular to the framing. All joints were spackled with joint compound.

Framing

The test room walls and ceiling were constructed with 2x4 wood studs spaced every 24 inches. The orientation of the ceiling framing was with the ceiling framing studs running across the 8 ft. dimension of the test room.

Interior Finish

The 2-ply 20 oz. NW Vinyl wall covering was applied to ½ inch gypsum board using Dynamite 111 Non-Strippable Heavy Duty Clay Wallcovering Adhesive 161-9469 on 06-26-18. The test samples were then attached to the base room interior 5/8 inch gypsum and studs using 2 inch wood screws. There were four screws used to attach samples, one in each corner to allow material to delaminate during testing. Samples were tested on 07-10-18.

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TEST RESULTS

Test Date: 07-10-18

Lab Temperature: 79°F

Lab Relative Humidity: 62%

TEST OBSERVATIONS	
Time (Min:Sec)	Observations
00:00	Ignition of the burner. Heat output set at 40kW
00:10	Ignition of wall covering
00:28	Flaming 4ft vertically in corner above burner
00:30	Light smoke
01:12	Flaming 5ft vertically above burner
01:34	Flame tips intermittently reaching 8ft
01:38	Flaming 6ft above burner
02:00	Flames recede to burner
03:30	No change
05:00	Increase gas flow to 160kW
05:10	Ignition at ceiling level
05:16	Horizontal flaming at 5ft along ceiling
05:24	Increase in smoke – Black in color
05:41	Flaming 6ft back wall – 4ft sidewall burner side
06:15	Flames recede back to burner – reduction in smoke
07:09	Blistering on walls
09:16	Intermittent flaming back wall 4ft
09:36	Ignition back wall
10:07	Flaming on back wall ceased
12:00	No change
14:00	No change
15:00	Gas off – No after flames

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2015 IBC SECTION 803.1.2.1 & NFPA 286 ANNEX C PERFORMANCE CRITERIA	TEST OBSERVATIONS	PASS/FAIL
During 40 kW exposure, flames should not spread to the ceiling.	Flames did not spread to the ceiling during the 40kW exposure.	PASS
During the 160 kW exposure, the interior finish should not spread to the outer extremity of the sample on any wall or ceiling	Flames propagation to the outer extremities did not occurred during the 160kW exposure.	PASS
<p>During the 160 kW exposure, the interior finish should not flashover as defined by NFPA 286.</p> <ul style="list-style-type: none"> •Peak Heat Release > 1 MW •Floor Heat Flux > 20 kW/m² •Average Upper Layer Temperature > 1,112°F •Flames exiting doorway •Auto ignition of Paper Target <p>Flashover is considered to have occurred when any two of the above criteria were met during the test.</p>	<ul style="list-style-type: none"> •Peak Heat Release = 204 kW •Max Floor Heat Flux = 2.04 kW/m² •Max Average Upper Layer Temperature = 849°F •No Flames exited doorway •The flashover indicators did not ignite. 	PASS
The peak rate of heat release throughout the NFPA 286 test should not exceed 800 kW.	The peak heat release rate was 204 kW	PASS
The total smoke released throughout the NFPA 286 test should not exceed 1,000 m ² .	The total smoke released during the entirety of the test was 11.9m ²	PASS

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PHOTOGRAPHS

Photo No. 1
Pretest photo



Photo No. 2
40kW



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Photo No. 3
40kW



Photo No. 4
End of 40kW exposure



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Photo No. 5
160kW



Photo No. 6
160kW



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Photo No. 7
160kW



Photo No. 8
End of test



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Photo No. 9
Post-test photo



Photo No. 10
Post-test photo



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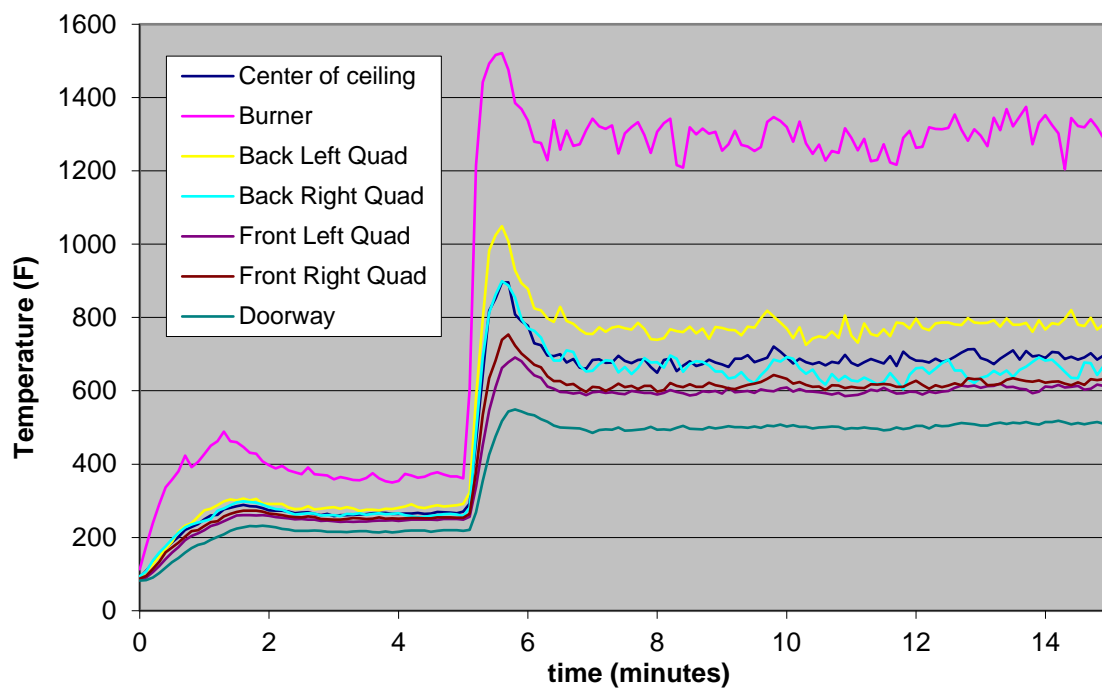
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GRAPHS

Graph No. 1
Thermocouple Data

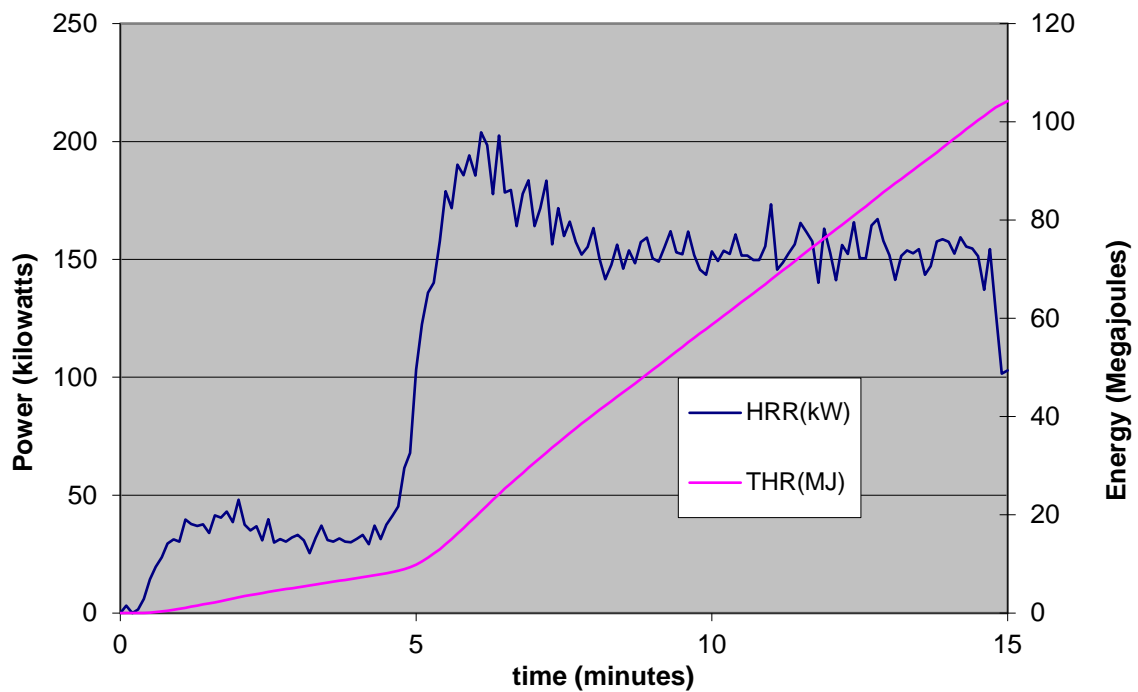


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Graph No. 2
Heat Release Data

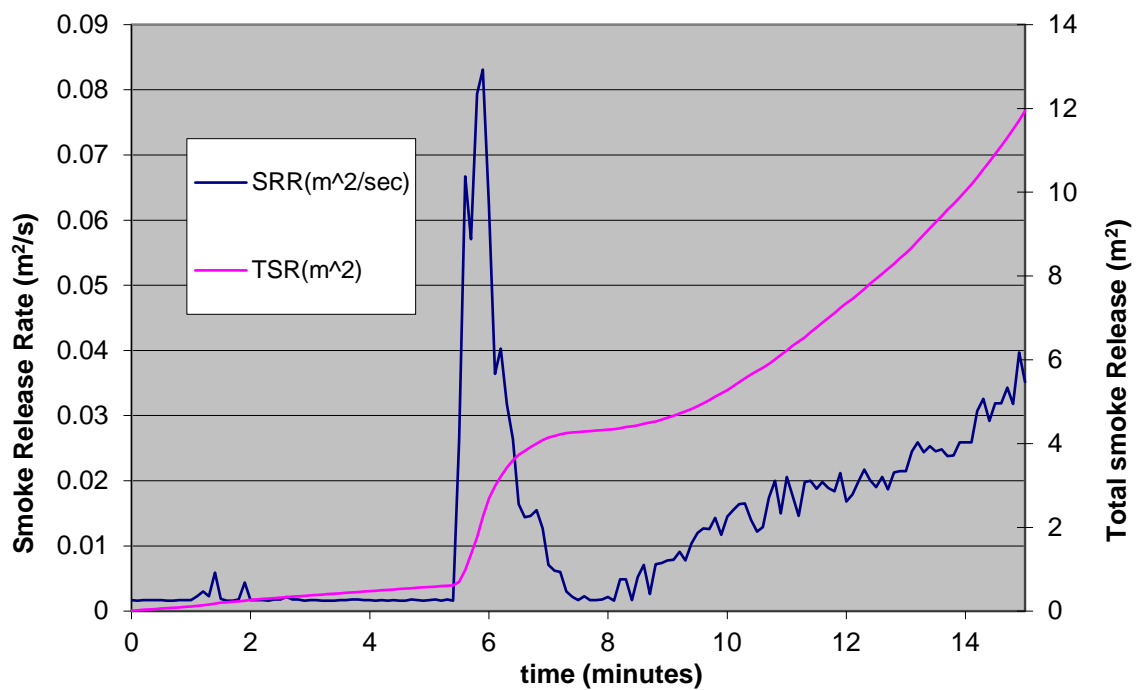


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Graph No. 3
Smoke Release Data

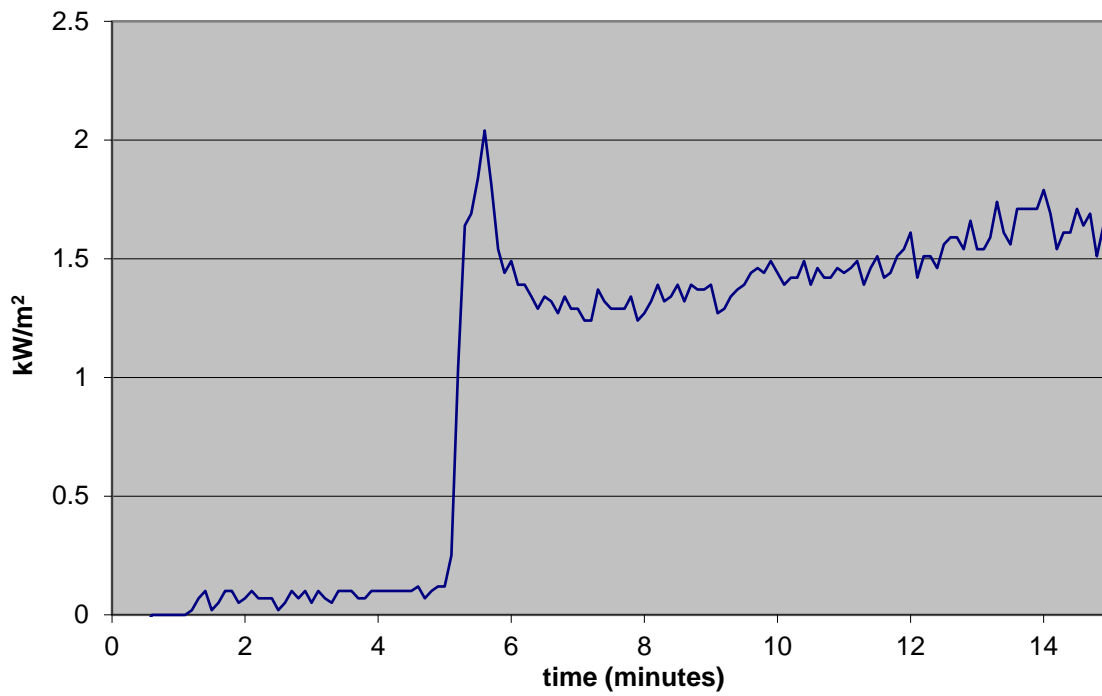


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Graph No. 4
Floor Heat Flux



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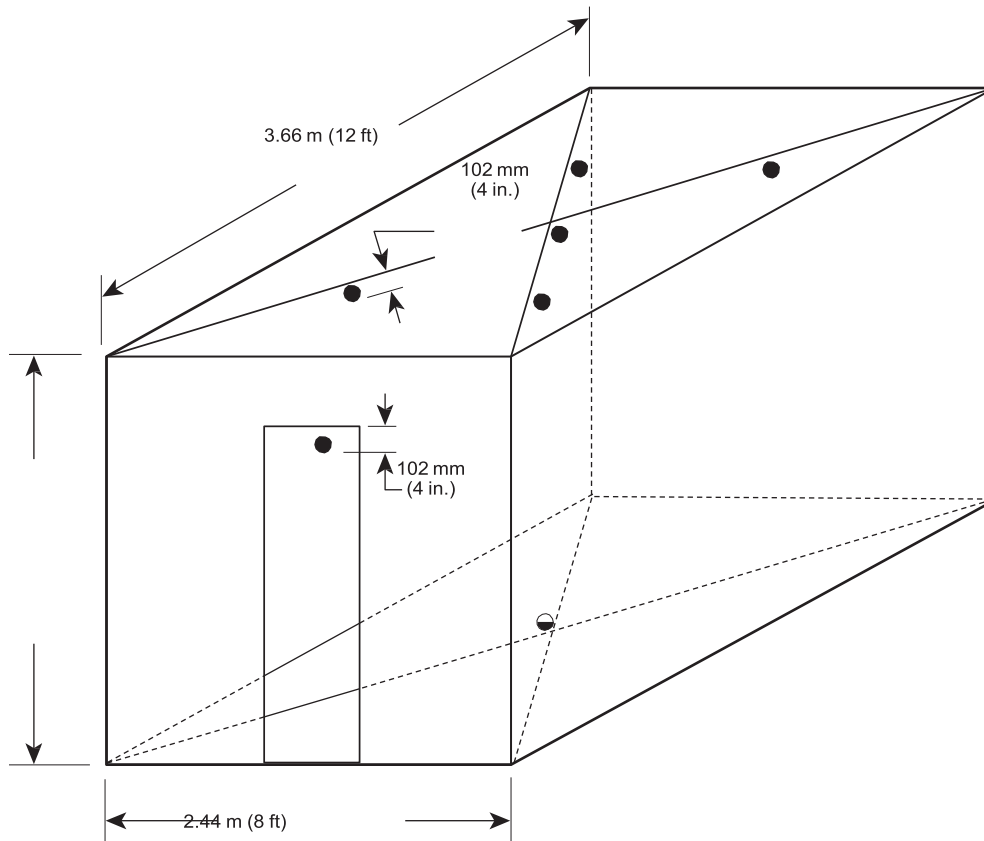
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DRAWINGS

TC and Radiometer locations





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16015 Shady Falls Road
Elmendorf, Texas 78112

Telephone: 210-635-8100
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REVISION LOG

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0	07/16/18	N/A	Original Report Issue