



REPORT NUMBER: 101700296SAT-001B Rev 1

ORIGINAL ISSUE DATE: June 25, 2014

REVISED DATE: March 31, 2015

EVALUATION CENTER

Intertek Testing Services NA Inc.

16015 Shady Falls Road

Elmendorf, TX 78112

RENDERED TO

Hewlett Packard

16399 W Bernardo Dr.

San Diego, CA 92127

TEST REPORT

Report of Testing "HP PVC-free Durable Wall Paper printed with HP DJ L25500 & HP 289 Inks" for compliance with the applicable requirements of the following criteria: ASTM E84-13a TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS (UL 723, UBC 8-1, NFPA 255)

ABSTRACT

Specimen I. D. "HP PVC-free Durable Wall Paper printed with HP DJ L25500 & HP 289 Inks"

Test Standard: ASTM E84-13a TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS (UL 723, UBC 8-1, NFPA 255)

Test Date: June 22, 2014

Client: Hewlett Packard

Test Results:

FLAME SPREAD INDEX	15
SMOKE DEVELOPED INDEX	0

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Darrell Gonzales

Darrell Gonzales
Technician II

June 25, 2014

Reviewed and approved:

Servando Romo

Servando Romo
Project Engineer

June 27, 2014

Intertek

I. INTRODUCTION

This report describes the results of the ASTM E84-13a TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS a method for determining the comparative surface burning behavior of building materials. This test is applicable to exposed surfaces, such as ceilings or walls, provided that the material or assembly of materials, by its own structural quality or the manner in which it is tested and intended for use, is capable of supporting itself in position or being supported during the test period.

The purpose of the method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame spread and smoke density developed are reported, however, there is not necessarily a relationship between these two measurements.

“The use of supporting materials on the underside of the test specimen may lower the flame spread index from that which might be obtained if the specimen could be tested without such support... This method may not be appropriate for obtaining comparative surface burning behavior of some cellular plastic materials... Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place.”

This test method is also published under the following designations:

NFPA 255
UL 723
UBC 8-1

This standard should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use.

II. PURPOSE

The ASTM E84 (25 foot tunnel) test method is intended to compare the surface flame spread and smoke developed measurements to those obtained from tests of fiber cement board and select grade red oak flooring. The test specimen surface (18 inches wide and 24 feet long) is exposed to a flaming fire exposure during the 10 minute test duration, while flame spread over its surface and density of the resulting smoke are measured and recorded. Test results are presented as the computed comparisons to the standard calibration materials.

The furnace is considered under calibration when a 10 minute test of red oak decking will pass flame out the end of the tunnel in five minutes, 30 seconds, plus or minus 15 seconds. The fiber cement board which complies with Annex A3 of the ASTM E 84 standard forms the zero point for both flame spread and smoke developed indexes, while the red oak flooring smoke developed index is set as 100.

III. TEST PROCEDURE

The tests were conducted in accordance with the procedures outlined in the ASTM E84. The specimens are placed directly on the tunnel ledges. As required by the standard, one or more layers of 0.25 inch thick reinforced concrete board are placed on top of the test sample between the sample and the tunnel lid. After the test, the samples are removed from the tunnel, examined and disposed of.

IV. REVISION SUMMARY

	SUMMARY
<i>Darrell R. Gonzales</i> Darrell Gonzales	1) Changed ID. 2) Updated report to Rev 1.
<i>Sal Romo</i> Sal Romo	
March 31, 2015	

V. DESCRIPTION OF TEST SPECIMENS

Date Received:	6/16/14
Date placed in the conditioning room:	6/16/14
Date Prepared:	6/17/14
Conditioning (73°F & 50% R.H.):	5 days
Specimen Width (in):	24
Specimen Length (ft):	24
Specimen Thickness (in):	0.016
Material Weight (lbs):	2.89
Total Specimen Weight (lbs):	110
Adhesive or coating application rate:	280 sq. ft. / gal.

Specimen Description:

The 24-ft. long test specimen consisted of three 8-ft. long sections of wall paper adhered to 5/8 type X gypsum.

The product was received by our personnel in good condition and given an identification number of SAT1406161537-001. The test specimen was prepared by Intertek technicians on June 17, 2014 at Intertek in Elmendorf, TX. The sample was applied using Shur-Stik 111 wall covering adhesive and a 3/8 inch nap roller.

Mounting Method:

The test specimen was self-supporting. The wall cover was exposed to the flames.

VI. TEST RESULTS & OBSERVATIONS

The test results, computed on the basis of observed flame front advance and electronic smoke density measurements are presented in the following table.

Test Specimen	Flame Spread Index	Smoke Developed Index
"HP PVC-free Durable Wall Paper printed with HP DJ L25500 & HP 289 Inks"	15	0

The data sheets are included in Appendix A. These sheets are actual print-outs of the computerized data system which monitors the tunnel furnace, and contain all calibration and specimen data needed to calculate the test results.

VII. OBSERVATIONS

During the test, the specimen was observed to behave in the following manner.

Time (min:sec)	Observations
0:00	The test burners were turned on.
0:03	Melting was observed.
0:05	Blistering was observed.
0:20	Steady ignition was observed.
3:28	Flaking was observed.
10:00	The test burners were shut off.

After the test, the specimen was observed to be damaged as follows:

Distance (FEET)	Damage Descriptions
0 - 5	The sample was consumed.
5 - 11	The sample was heavily charred, blistered, and discolored.
11 - 24	The sample was discolored.

APPENDIX A

ASTM E84 DATA SHEETS

TEST RESULTS

FLAMESPREAD INDEX: 15

SMOKE DEVELOPED INDEX: 0

SPECIMEN DATA . . .

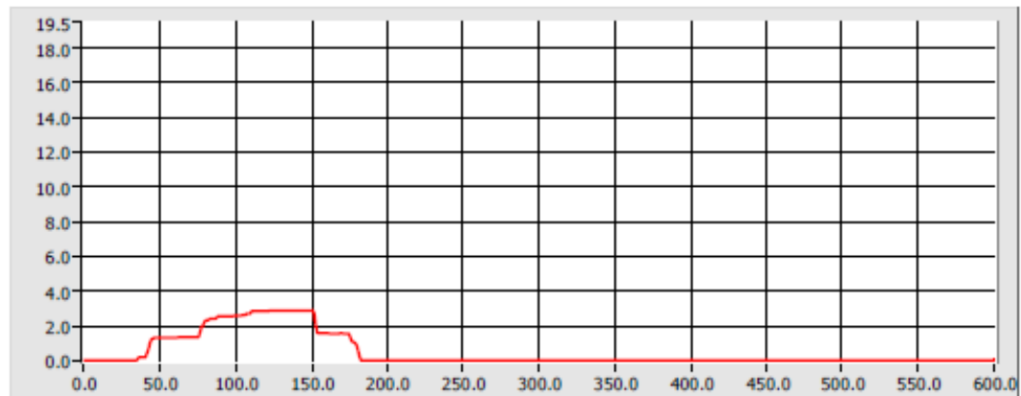
Time to Ignition (sec): 20
Time to Max FS (sec): 111
Maximum FS (feet): 2.8
Time to 980 F (sec): Never Reached
Time to End of Tunnel (sec): Never Reached
Max Temperature (F): 646
Time to Max Temperature (sec): 566
Total Fuel Burned (cubic feet): 49.25

FS*Time Area (ft*min): 25.7
Smoke Area (%A*min): 1.7
Unrounded FSI: 13.2

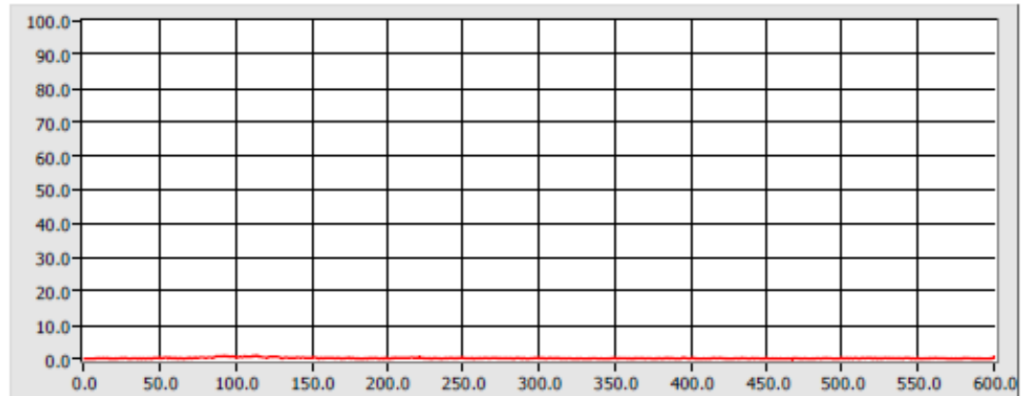
CALIBRATION DATA . . .

Time to Ignition of Last Red Oak (Sec): 45.0
Red Oak Smoke Area (%A*min): 69.8

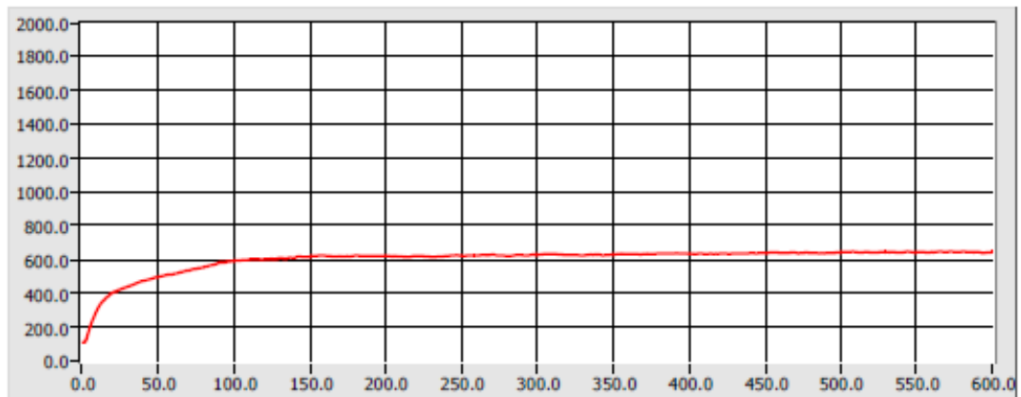
FLAME SPREAD (ft)



Smoke (%A)



Temperature (°F)



Time (sec)

600



REPORT NUMBER: 101700296SAT-001C Rev 1

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EVALUATION CENTER

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16015 Shady Falls Road

Elmendorf, TX 78112

RENDERED TO

Hewlett Packard

16399 W Bernardo Dr.

San Diego, CA 92127

TEST REPORT

Report of Testing "HP PVC-free Durable Suede Wall Paper printed with HP Latex 260 & HP 792 Inks" for compliance with the applicable requirements of the following criteria: ASTM E84-13a TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS (UL 723, UBC 8-1, NFPA 255)

ABSTRACT

Specimen I. D. "HP PVC-free Durable Suede Wall Paper printed with HP Latex 260 & HP 792 Inks"

Test Standard: ASTM E84-13a TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS (UL 723, UBC 8-1, NFPA 255)

Test Date: June 22, 2014

Client: Hewlett Packard

Test Results:

FLAME SPREAD INDEX	15
SMOKE DEVELOPED INDEX	5

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Darrell Gonzales

Darrell Gonzales
Technician II

June 25, 2014

Reviewed and approved:

Servando Romo

Servando Romo
Project Engineer

June 27, 2014

Intertek

I. INTRODUCTION

This report describes the results of the ASTM E84-13a TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS a method for determining the comparative surface burning behavior of building materials. This test is applicable to exposed surfaces, such as ceilings or walls, provided that the material or assembly of materials, by its own structural quality or the manner in which it is tested and intended for use, is capable of supporting itself in position or being supported during the test period.

The purpose of the method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame spread and smoke density developed are reported, however, there is not necessarily a relationship between these two measurements.

“The use of supporting materials on the underside of the test specimen may lower the flame spread index from that which might be obtained if the specimen could be tested without such support... This method may not be appropriate for obtaining comparative surface burning behavior of some cellular plastic materials... Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place.”

This test method is also published under the following designations:

NFPA 255
UL 723
UBC 8-1

This standard should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use.

II. PURPOSE

The ASTM E84 (25 foot tunnel) test method is intended to compare the surface flame spread and smoke developed measurements to those obtained from tests of fiber cement board and select grade red oak flooring. The test specimen surface (18 inches wide and 24 feet long) is exposed to a flaming fire exposure during the 10 minute test duration, while flame spread over its surface and density of the resulting smoke are measured and recorded. Test results are presented as the computed comparisons to the standard calibration materials.

The furnace is considered under calibration when a 10 minute test of red oak decking will pass flame out the end of the tunnel in five minutes, 30 seconds, plus or minus 15 seconds. The fiber cement board which complies with Annex A3 of the ASTM E 84 standard forms the zero point for both flame spread and smoke developed indexes, while the red oak flooring smoke developed index is set as 100.

III. TEST PROCEDURE

The tests were conducted in accordance with the procedures outlined in the ASTM E84. The specimens are placed directly on the tunnel ledges. As required by the standard, one or more layers of 0.25 inch thick reinforced concrete board are placed on top of the test sample between the sample and the tunnel lid. After the test, the samples are removed from the tunnel, examined and disposed of.

IV. REVISION SUMMARY

	SUMMARY
<i>Darrell R. Gonzales</i> Darrell Gonzales	1) Changed ID. 2) Updated report to Rev 1.
<i>Sal Romo</i> Sal Romo	
March 31, 2015	

V. DESCRIPTION OF TEST SPECIMENS

Date Received:	6/16/14
Date placed in the conditioning room:	6/16/14
Date Prepared:	6/17/14
Conditioning (73°F & 50% R.H.):	5 days
Specimen Width (in):	24
Specimen Length (ft):	24
Specimen Thickness (in):	0.017
Material Weight (lbs):	2.88
Total Specimen Weight (lbs):	110
Adhesive or coating application rate:	280 sq. ft. / gal.

Specimen Description:

The 24-ft. long test specimen consisted of three 8-ft. long sections of wall paper adhered to 5/8 type X gypsum.

The product was received by our personnel in good condition and given an identification number of SAT1406161537-002. The test specimen was prepared by Intertek technicians on June 17, 2014 at Intertek in Elmendorf, TX. The sample was applied using Shur-Stik 111 wall covering adhesive and a 3/8 inch nap roller.

Mounting Method:

The test specimen was self-supporting. The wall cover was exposed to the flames.

VI. TEST RESULTS & OBSERVATIONS

The test results, computed on the basis of observed flame front advance and electronic smoke density measurements are presented in the following table.

Test Specimen	Flame Spread Index	Smoke Developed Index
“HP PVC-free Durable Suede Wall Paper printed with HP Latex 260 & HP 792 Inks”	15	5

The data sheets are included in Appendix A. These sheets are actual print-outs of the computerized data system which monitors the tunnel furnace, and contain all calibration and specimen data needed to calculate the test results.

VII. OBSERVATIONS

During the test, the specimen was observed to behave in the following manner.

Time (min:sec)	Observations
0:00	The test burners were turned on.
0:02	Melting was observed.
0:03	Blistering was observed.
0:13	Steady ignition was observed.
3:05	Flaking was observed.
10:00	The test burners were shut off.

After the test, the specimen was observed to be damaged as follows:

Distance (FEET)	Damage Descriptions
0 - 8	The sample was consumed.
8 - 11	The sample was charred, blistered, and discolored.
11 - 24	The sample was discolored.

APPENDIX A

ASTM E84 DATA SHEETS

TEST RESULTS

FLAMESPREAD INDEX: 15

SMOKE DEVELOPED INDEX: 5

SPECIMEN DATA . . .

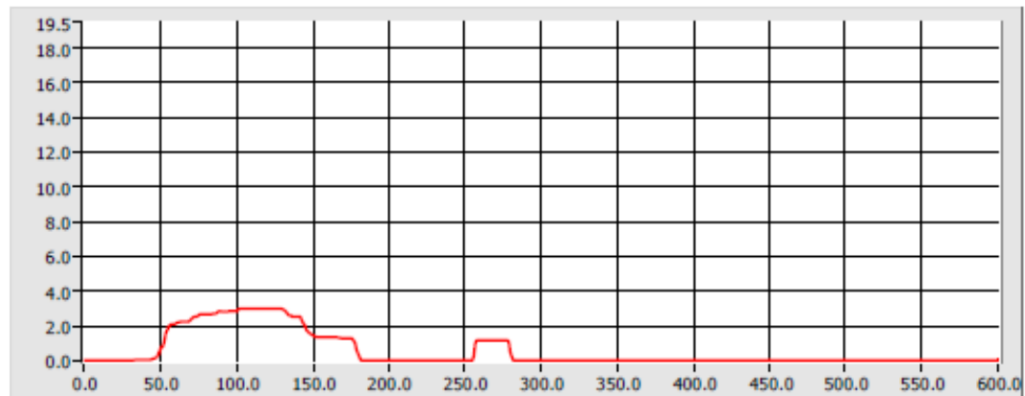
Time to Ignition (sec): 13
Time to Max FS (sec): 102
Maximum FS (feet): 3.0
Time to 980 F (sec): Never Reached
Time to End of Tunnel (sec): Never Reached
Max Temperature (F): 636
Time to Max Temperature (sec): 573
Total Fuel Burned (cubic feet): 49.10

FS*Time Area (ft*min): 26.9
Smoke Area (%A*min): 1.8
Unrounded FSI: 13.8

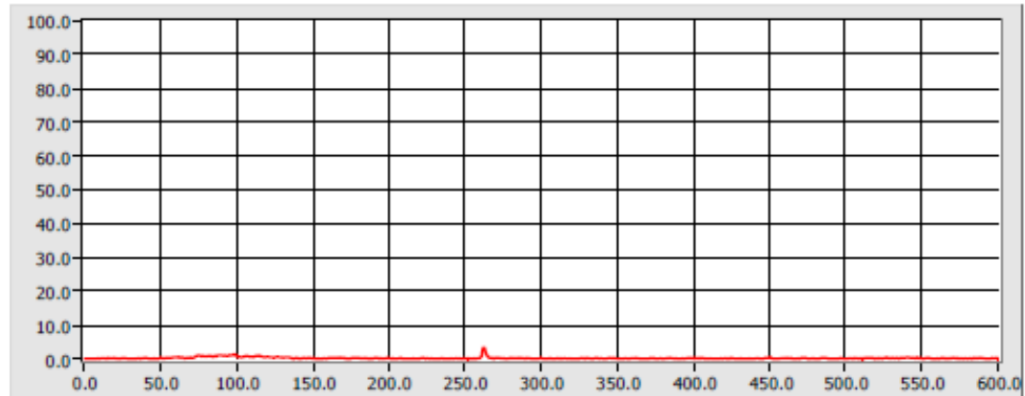
CALIBRATION DATA . . .

Time to Ignition of Last Red Oak (Sec): 45.0
Red Oak Smoke Area (%A*min): 69.8

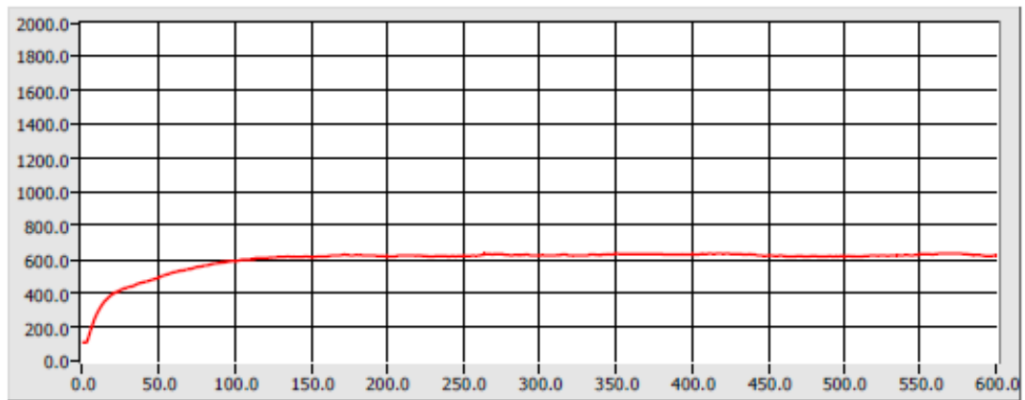
FLAME SPREAD (ft)



Smoke (%A)



Temperature (°F)



Time (sec)

600



REPORT NUMBER: 101725352SAT-001A Rev 1

ORIGINAL ISSUE DATE: July 15, 2014

REVISED DATE: March 31, 2015

EVALUATION CENTER

Intertek Testing Services NA Inc.

16015 Shady Falls Road

Elmendorf, TX 78112

RENDERED TO

Hewlett Packard

16399 W. Bernardo Dr.

San Diego, CA 92127

TEST REPORT

Report of Testing "HP PVC-free Durable Wall Paper printed with HP LX 850 & HP LX 610 Inks" for compliance with the applicable requirements of the following criteria: ASTM E84-13a TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS (UL 723, UBC 8-1, NFPA 255)

ABSTRACT

Specimen I. D. "HP PVC-free Durable Wall Paper printed with HP LX 850
& HP LX 610 Inks"

Test Standard: ASTM E84-13a TEST FOR SURFACE BURNING
CHARACTERISTICS OF BUILDING MATERIALS (UL
723, UBC 8-1, NFPA 255)


Test Date: July 10, 2014

Client: Hewlett Packard

Test Results:

FLAME SPREAD INDEX	15
SMOKE DEVELOPED INDEX	0


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Joseph Martinez
Technician III

July 15, 2014

Reviewed and approved:



Servando Romo
Project Engineer

July 17, 2014

I. INTRODUCTION

This report describes the results of the ASTM E84-13a TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS a method for determining the comparative surface burning behavior of building materials. This test is applicable to exposed surfaces, such as ceilings or walls, provided that the material or assembly of materials, by its own structural quality or the manner in which it is tested and intended for use, is capable of supporting itself in position or being supported during the test period.

The purpose of the method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame spread and smoke density developed are reported, however, there is not necessarily a relationship between these two measurements.

“The use of supporting materials on the underside of the test specimen may lower the flame spread index from that which might be obtained if the specimen could be tested without such support... This method may not be appropriate for obtaining comparative surface burning behavior of some cellular plastic materials... Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place.”

This test method is also published under the following designations:

NFPA 255
UL 723
UBC 8-1

This standard should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use.

II. PURPOSE

The ASTM E84 (25 foot tunnel) test method is intended to compare the surface flame spread and smoke developed measurements to those obtained from tests of mineral fiber cement board and select grade red oak flooring. The test specimen surface (18 inches wide and 24 feet long) is exposed to a flaming fire exposure during the 10 minute test duration, while flame spread over its surface and density of the resulting smoke are measured and recorded. Test results are presented as the computed comparisons to the standard calibration materials.

The furnace is considered under calibration when a 10 minute test of red oak decking will pass flame out the end of the tunnel in five minutes, 30 seconds, plus or minus 15 seconds. The fiber cement board which complies with Annex A3 of the ASTM E 84 standard forms the zero point for both flame spread and smoke developed indexes, while the red oak flooring smoke developed index is set as 100.

III. TEST PROCEDURE

The tests were conducted in accordance with the procedures outlined in the ASTM E84. The specimens are placed directly on the tunnel ledges. As required by the standard, one or more layers of 0.25 inch thick reinforced concrete board are placed on top of the test sample between the sample and the tunnel lid. After the test, the samples are removed from the tunnel, examined and disposed of.

IV. REVISION SUMMARY

	SUMMARY
<i>Darrell R. Gonzales</i> Darrell Gonzales	1) Changed ID. 2) Updated report to Rev 1.
<i>Sal Romo</i> Sal Romo	
March 31, 2015	

V. DESCRIPTION OF TEST SPECIMENS

Date Received:	6/30/2014
Date Prepared:	7/3/2014
Date placed in the conditioning room:	6/30/2014
Conditioning (73°F & 50% R.H.):	10 days
Specimen Width (in):	24
Specimen Length (ft):	24
Specimen Thickness (in):	0.019
Material Weight (lbs):	2.83 (wall covering)
Total Specimen Weight (lbs):	110 (wall covering w/ gypsum)
Adhesive:	Shur-Stik 111
Coating Application Rate:	280ft ² /gal.

Specimen Description:

The test specimen was prepared at Intertek in Elmendorf, Texas on July 3, 2014 by Intertek technicians.

The specimen was described by the client as "Wall covering".

The 24ft. long test specimen consisted of three 8ft. long sections of wall covering material adhered to 5/8" thick gypsum.

The product was received by our personnel in good condition and given an identification number of SAT1406300946-001.

Mounting Method:

The specimen was adhered to 5/8" thick gypsum and was self-supporting. The finished side was exposed towards the flames.

VI. TEST RESULTS & OBSERVATIONS

The test results, computed on the basis of observed flame front advance and electronic smoke density measurements are presented in the following table.

Test Specimen	Flame Spread Index	Smoke Developed Index
"HP PVC-free Durable Wall Paper printed with HP LX 850 & HP LX 610 Inks"	15	0

The data sheets are included in Appendix A. These sheets are actual print-outs of the computerized data system which monitors the tunnel furnace, and contain all calibration and specimen data needed to calculate the test results.

VII. OBSERVATIONS

During the test, the specimen was observed to behave in the following manner.

Time (min:sec)	Observations
0:00	The test burners were turned on.
0:03	The wall covering began to blister.
0:07	The wall covering began to crack.
0:08	Steady ignition was observed.
0:36	The wall covering began to flake.
10:00	The test burners were shut off.

After the test, the specimen was observed to be damaged as follows:

Distance (FEET)	Damage Descriptions
0 – 4	The wall covering was observed to be consumed.
4 – 7	The wall covering was observed to be heavily charred and cracked.
7 – 10	The wall covering was observed to be heavily charred.
10 – 24	The wall covering was observed to be discolored.

APPENDIX A

ASTM E84 DATA SHEETS

TEST RESULTS

FLAMESPREAD INDEX: 15

SMOKE DEVELOPED INDEX: 0

SPECIMEN DATA . . .

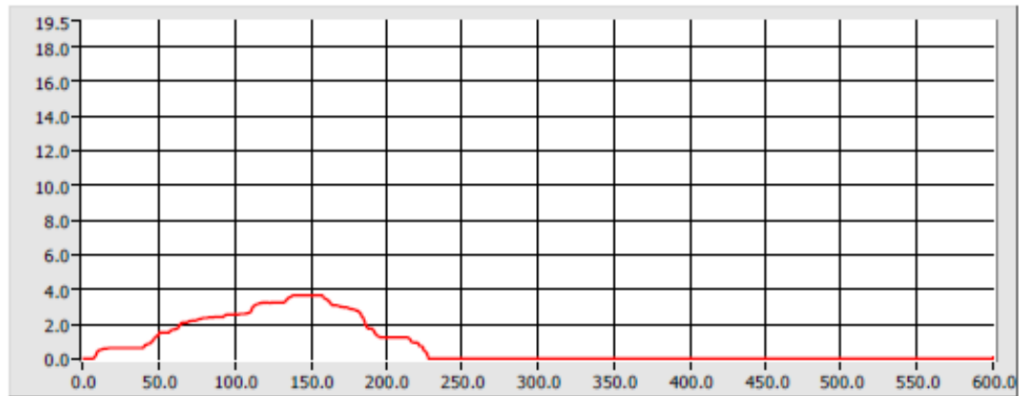
Time to Ignition (sec): 8
Time to Max FS (sec): 138
Maximum FS (feet): 3.7
Time to 980 F (sec): Never Reached
Time to End of Tunnel (sec): Never Reached
Max Temperature (F): 629
Time to Max Temperature (sec): 571
Total Fuel Burned (cubic feet): 48.84

FS*Time Area (ft*min): 32.3
Smoke Area (%A*min): 0.1
Unrounded FSI: 16.6

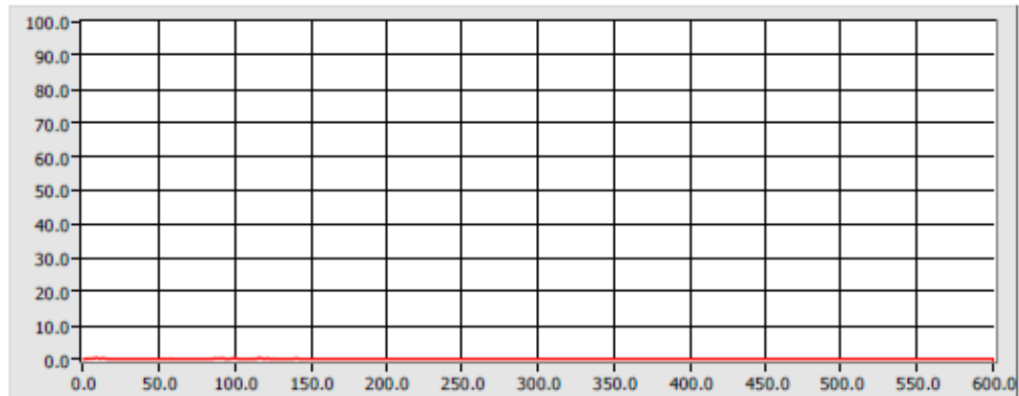
CALIBRATION DATA . . .

Time to Ignition of Last Red Oak (Sec): 45.0
Red Oak Smoke Area (%A*min): 69.8

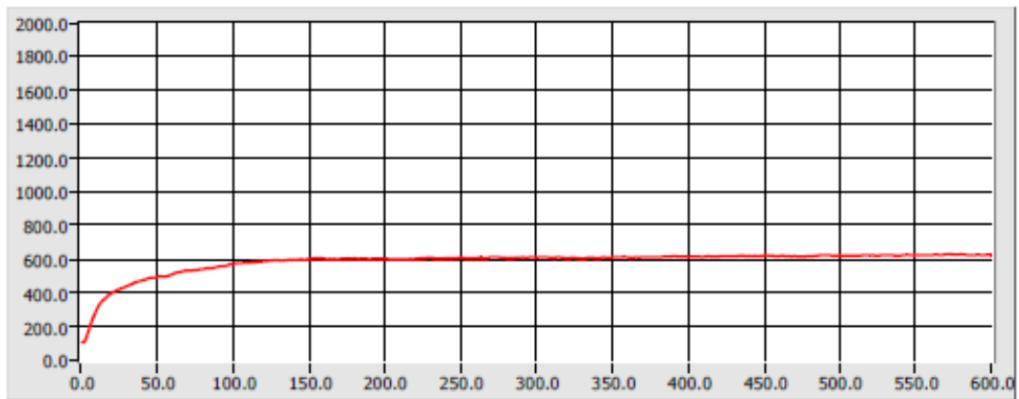
FLAME SPREAD (ft)



Smoke (%A)



Temperature (°F)



Time (sec)

600



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TEST REPORT

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ABSTRACT

Specimen I. D. "HP PVC-free Durable Wall Paper printed with HP Latex 3000 & HP 881 Inks"

Test Standard: ASTM E84-13a TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS (UL 723, UBC 8-1, NFPA 255)


Test Date: July 11, 2014

Client: Hewlett Packard

Test Results:

FLAME SPREAD INDEX	15
SMOKE DEVELOPED INDEX	0

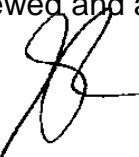
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Joseph Martinez
Technician III

July 15, 2014

Reviewed and approved:



Servando Romo
Project Engineer

July 17, 2014

I. INTRODUCTION

This report describes the results of the ASTM E84-13a TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS a method for determining the comparative surface burning behavior of building materials. This test is applicable to exposed surfaces, such as ceilings or walls, provided that the material or assembly of materials, by its own structural quality or the manner in which it is tested and intended for use, is capable of supporting itself in position or being supported during the test period.

The purpose of the method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame spread and smoke density developed are reported, however, there is not necessarily a relationship between these two measurements.

“The use of supporting materials on the underside of the test specimen may lower the flame spread index from that which might be obtained if the specimen could be tested without such support... This method may not be appropriate for obtaining comparative surface burning behavior of some cellular plastic materials... Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place.”

This test method is also published under the following designations:

NFPA 255
UL 723
UBC 8-1

This standard should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use.

II. PURPOSE

The ASTM E84 (25 foot tunnel) test method is intended to compare the surface flame spread and smoke developed measurements to those obtained from tests of mineral fiber cement board and select grade red oak flooring. The test specimen surface (18 inches wide and 24 feet long) is exposed to a flaming fire exposure during the 10 minute test duration, while flame spread over its surface and density of the resulting smoke are measured and recorded. Test results are presented as the computed comparisons to the standard calibration materials.

The furnace is considered under calibration when a 10 minute test of red oak decking will pass flame out the end of the tunnel in five minutes, 30 seconds, plus or minus 15 seconds. The fiber cement board which complies with Annex A3 of the ASTM E 84 standard forms the zero point for both flame spread and smoke developed indexes, while the red oak flooring smoke developed index is set as 100.

III. TEST PROCEDURE

The tests were conducted in accordance with the procedures outlined in the ASTM E84. The specimens are placed directly on the tunnel ledges. As required by the standard, one or more layers of 0.25 inch thick reinforced concrete board are placed on top of the test sample between the sample and the tunnel lid. After the test, the samples are removed from the tunnel, examined and disposed of.

IV. REVISION SUMMARY

	SUMMARY
<i>Darrell R. Gonzales</i> Darrell Gonzales	1) Changed ID. 2) Updated report to Rev 1.
<i>Sal Romo</i> Sal Romo	
March 31, 2015	

V. DESCRIPTION OF TEST SPECIMENS

Date Received:	6/30/2014
Date Prepared:	7/3/2014
Date placed in the conditioning room:	6/30/2014
Conditioning (73°F & 50% R.H.):	11 days
Specimen Width (in):	24
Specimen Length (ft):	24
Specimen Thickness (in):	0.017
Material Weight (lbs):	2.8 (wall covering)
Total Specimen Weight (lbs):	111 (wall covering w/ gypsum)
Adhesive:	Shur-Stik 111
Coating Application Rate:	280ft ² /gal.

Specimen Description:

The test specimen was prepared at Intertek in Elmendorf, Texas on July 3, 2014 by Intertek technicians.

The specimen was described by the client as "Wall covering".

The 24ft. long test specimen consisted of three 8ft. long sections of wall covering material adhered to 5/8" thick gypsum.

The product was received by our personnel in good condition and given an identification number of SAT1406300946-002.

Mounting Method:

The specimen was adhered to 5/8" thick gypsum and was self-supporting. The finished side was exposed towards the flames.

VI. TEST RESULTS & OBSERVATIONS

The test results, computed on the basis of observed flame front advance and electronic smoke density measurements are presented in the following table.

Test Specimen	Flame Spread Index	Smoke Developed Index
"HP PVC-free Durable Wall Paper printed with HP Latex 3000 & HP 881 Inks"	15	0

The data sheets are included in Appendix A. These sheets are actual print-outs of the computerized data system which monitors the tunnel furnace, and contain all calibration and specimen data needed to calculate the test results.

VII. OBSERVATIONS

During the test, the specimen was observed to behave in the following manner.

Time (min:sec)	Observations
0:00	The test burners were turned on.
0:03	The wall covering began to blister.
0:05	The wall covering began to crack.
0:06	Steady ignition was observed.
1:29	The wall covering began to flake.
10:00	The test burners were shut off.

After the test, the specimen was observed to be damaged as follows:

Distance (FEET)	Damage Descriptions
0 – 5	The wall covering was observed to be consumed.
5 – 7	The wall covering was observed to be heavily charred and cracked.
7 – 10	The wall covering was observed to be charred.
10 – 24	The wall covering was observed to be discolored.

APPENDIX A

ASTM E84 DATA SHEETS

TEST RESULTS

FLAMESPREAD INDEX: 15

SMOKE DEVELOPED INDEX: 0

SPECIMEN DATA . . .

Time to Ignition (sec): 6

Time to Max FS (sec): 98

Maximum FS (feet): 3.1

Time to 980 F (sec): Never Reached

Time to End of Tunnel (sec): Never Reached

Max Temperature (F): 623

Time to Max Temperature (sec): 598

Total Fuel Burned (cubic feet): 48.72

FS*Time Area (ft*min): 27.8

Smoke Area (%A*min): 0.3

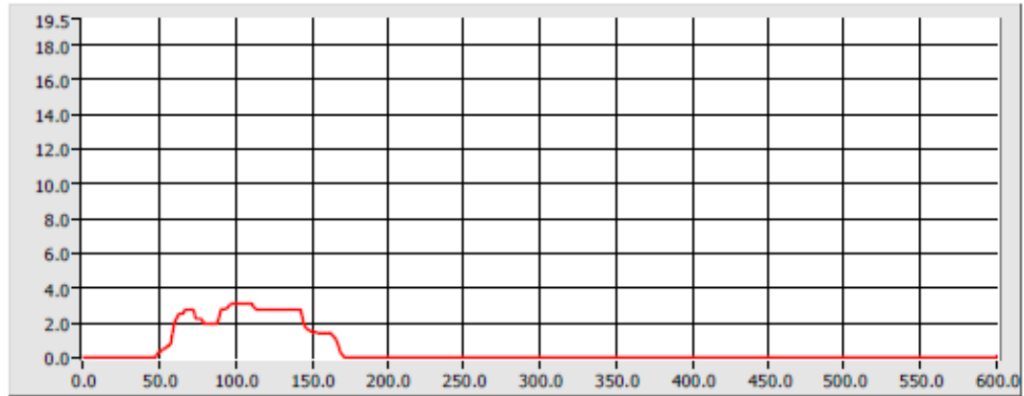
Unrounded FSI: 14.3

CALIBRATION DATA . . .

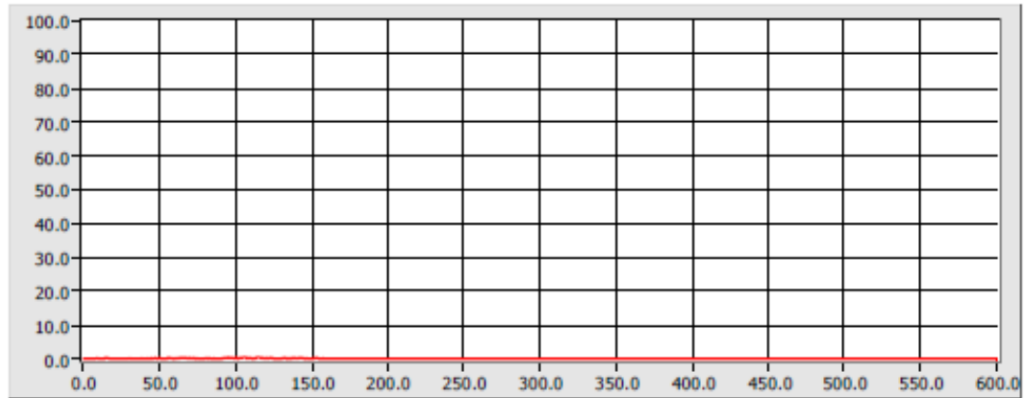
Time to Ignition of Last Red Oak (Sec): 45.0

Red Oak Smoke Area (%A*min): 69.8

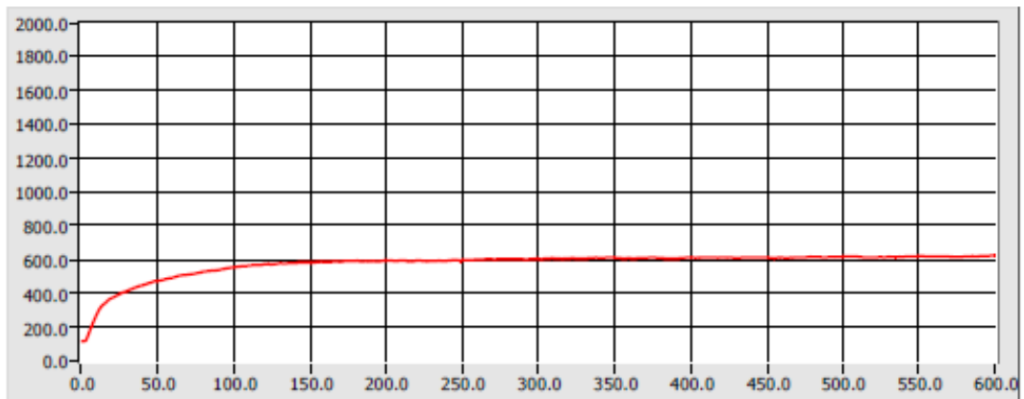
FLAME SPREAD (ft)



Smoke (%A)



Temperature (°F)



Time (sec)

600



REPORT NUMBER: 102274443SAT-001B
ORIGINAL ISSUE DATE: September 28, 2015
REVISED DATE:

EVALUATION CENTER
Intertek Testing Services NA Inc.
16015 Shady Falls Road
Elmendorf, TX 78112

RENDERED TO

Hewlett Packard
16399 W. Bernardo Dr.
San Diego, CA 92127

Report of Testing "HP PVC-free Durable Wall Paper printed on HP Latex 360 Printer with HP 831 Inks" for compliance with the applicable requirements of the following criteria: ASTM E84-15 TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS (UL 723, UBC 8-1, NFPA 255)

TEST REPORT

ABSTRACT

Specimen I. D. "HP PVC-free Durable Wall Paper printed on HP Latex 360 Printer with HP 831 Inks"

Test Standard: ASTM E84-15 TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS (UL 723, UBC 8-1, NFPA 255)


Test Date: September 21, 2015

Client: Hewlett Packard

Test Results:


FLAME SPREAD INDEX	20
SMOKE DEVELOPED INDEX	0

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Joseph Martinez
Technician III

Reviewed and approved:



Servando Romo
Project Engineer

I. INTRODUCTION

This report describes the results of the ASTM E84-15 TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS a method for determining the comparative surface burning behavior of building materials. This test is applicable to exposed surfaces, such as ceilings or walls, provided that the material or assembly of materials, by its own structural quality or the manner in which it is tested and intended for use, is capable of supporting itself in position or being supported during the test period.

The purpose of the method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame spread and smoke density developed are reported, however, there is not necessarily a relationship between these two measurements.

“The use of supporting materials on the underside of the test specimen may lower the flame spread index from that which might be obtained if the specimen could be tested without such support... This method may not be appropriate for obtaining comparative surface burning behavior of some cellular plastic materials... Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place.”

This test method is also published under the following designations:

NFPA 255
UL 723
UBC 8-1

This standard should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use.

II. PURPOSE

The ASTM E84 (25 foot tunnel) test method is intended to compare the surface flame spread and smoke developed measurements to those obtained from tests of mineral fiber cement board and select grade red oak flooring. The test specimen surface (18 inches wide and 24 feet long) is exposed to a flaming fire exposure during the 10 minute test duration, while flame spread over its surface and density of the resulting smoke are measured and recorded. Test results are presented as the computed comparisons to the standard calibration materials.

The furnace is considered under calibration when a 10 minute test of red oak decking will pass flame out the end of the tunnel in five minutes, 30 seconds, plus or minus 15 seconds. The fiber cement board which complies with Annex A3 of the ASTM E 84 standard forms the zero point for both flame spread and smoke developed indexes, while the red oak flooring smoke developed index is set as 100.

III. TEST PROCEDURE

The tests were conducted in accordance with the procedures outlined in the ASTM E84. The specimens are placed directly on the tunnel ledges. As required by the standard, one or more layers of 0.25 inch thick reinforced concrete board are placed on top of the test sample between the sample and the tunnel lid. After the test, the samples are removed from the tunnel, examined and disposed of.

IV. REVISION SUMMARY

DATE	SUMMARY
September 28, 2015	Original

V. DESCRIPTION OF TEST SPECIMENS

Date Received:	9/1/2015
Date Prepared:	9/3/2015
Date placed in the conditioning room:	9/3/2015
Conditioning (73°F & 50% R.H.):	18 days
Specimen Width (in):	24
Specimen Length (ft):	24
Specimen Thickness (in):	0.02
Material Weight (lbs):	3 (Wall covering)
Total Specimen Weight (lbs):	107 (Wall covering/gypsum)
Adhesive:	Shur-Stik 111
Application rate:	280ft ² /gal using a 3/8 in. nap roller

Specimen Description:

The test specimen was prepared at Intertek in Elmendorf, Texas on September 3, 2015 by Intertek technicians.

The specimen was described by the client as "HP PVC-free Durable Wall Paper".

The 24 ft. long test specimen consisted of three 8 ft. long sections of wall covering material adhered to 5/8 in. thick gypsum.

The product was received by our personnel in good condition and given an identification number of SAT1509011733-002.

Mounting Method:

The specimen was adhered to 5/8 in. thick gypsum and was self-supporting. The finished side was exposed towards the flames.

VI. TEST RESULTS & OBSERVATIONS

The test results, computed on the basis of observed flame front advance and electronic smoke density measurements are presented in the following table.

Test Specimen	Flame Spread Index	Smoke Developed Index
"HP PVC-free Durable Wall Paper printed on HP Latex 360 Printer with HP 831 Inks"	20	0

The data sheets are included in Appendix A. These sheets are actual print-outs of the computerized data system which monitors the tunnel furnace, and contain all calibration and specimen data needed to calculate the test results.

VII. OBSERVATIONS

During the test, the specimen was observed to behave in the following manner.

Time (min:sec)	Observations
0:00	The test burners were turned on.
0:02	The wall covering began to blister.
0:07	Steady ignition was observed.
1:59	The wall covering began to flake.
10:00	The test burners were shut off.

After the test, the specimen was observed to be damaged as follows:

Distance (FEET)	Damage Descriptions
0 – 6	The wall covering was observed to be consumed.
6 – 8	The wall covering was observed to be heavily charred and cracked apart.
8 – 10	The wall covering was observed to be charred and blistered.
10 – 24	The wall covering was observed to be discolored.

APPENDIX A

ASTM E84 DATA SHEETS

TEST RESULTS

FLAMESPREAD INDEX: 20

SMOKE DEVELOPED INDEX: 0

SPECIMEN DATA . . .

Time to Ignition (sec): 7

Time to Max FS (sec): 102

Maximum FS (feet): 4.2

Time to 980 F (sec): Never Reached

Time to End of Tunnel (sec): Never Reached

Max Temperature (F): 634

Time to Max Temperature (sec): 245

Total Fuel Burned (cubic feet): 47.68

FS*Time Area (ft*min): 37.4

Smoke Area (%A*min): 0.0

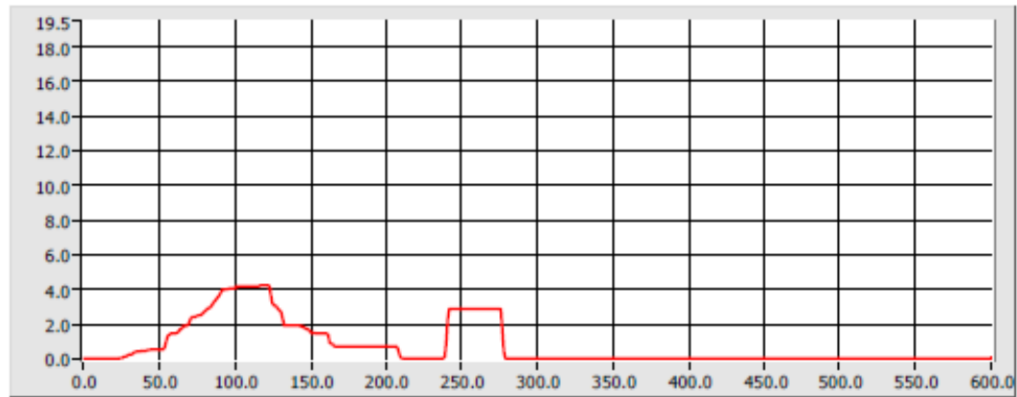
Unrounded FSI: 19.3

CALIBRATION DATA . . .

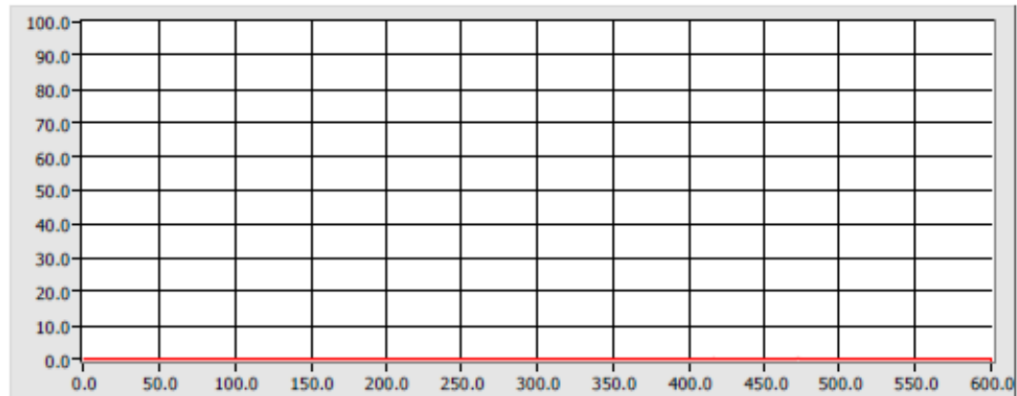
Time to Ignition of Last Red Oak (Sec): 49.0

Red Oak Smoke Area (%A*min): 68.6

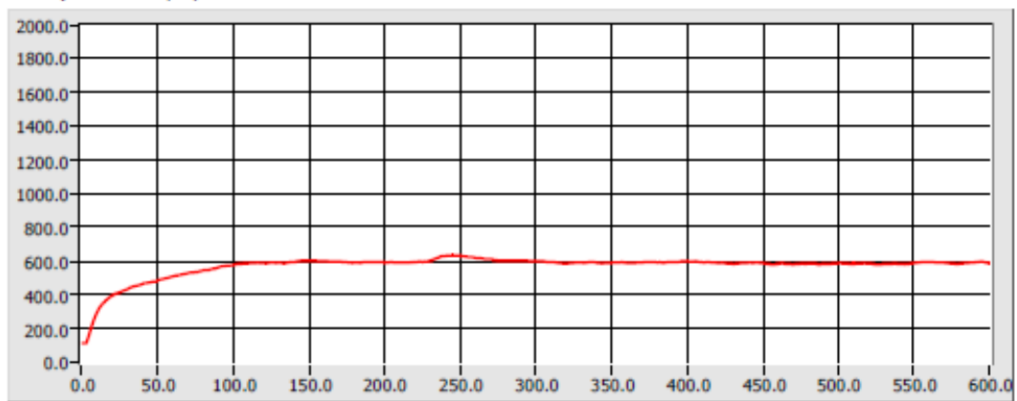
FLAME SPREAD (ft)



Smoke (%A)



Temperature (°F)



Time (sec)

600