



City of Portland, Oregon - Bureau of Development Services

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Permit Revision Submittal Requirements and Application

A Permit Revision is required when there are proposed changes to the project after the permit has been issued. This may arise due to discrepancies between the city-approved permit drawings and actual field conditions, or the customer has changed their mind about an aspect of the project. In all cases, a revision to the existing permit must be submitted, reviewed and approved.

Applicants will provide:

- ☒ A copy of this application
- ☒ Three (3) sets of plans that clearly reflect the proposed change(s).
Drawings and calculations must be stamped and signed by the Architect and/or the Engineer of Record, if applicable.
- ☒ One (1) copy of the original city approved permit drawings. (NOTE: If your project has an assigned process manager please contact them regarding submittal of the revision).
- ☐ ~~Two (2) sets of calculations, if applicable~~
- ☐ ~~Inspector's correction notice, if revision is due to an inspection correction~~
- ☐ Revision fee (paid at time of submittal)

Contact Information:

Contact name Boris Kratzenberg
Address 811 SE Stark Street
City Portland State OR Zip Code 97214
Phone 503-234-2945 Email boris@worksarchitecture.net
Value of proposed revision 0 Issued permit # 17-109630-CO
Job site address 5470 NE 16th Avenue, Portland, OR 97211
Description of revision See seperate sheet

Fees:

The Permit Revisions are subject to fees associated with plan review, processing and any increase in project value. Additional fees may apply if adding plumbing fixtures.

The Bureau of Development Services fee schedule is available under the fees tab on the BDS web site at: www.portlandoregon.gov/bds. Fees are updated annually on July 1st.

Helpful Information:

Bureau of Development Services
City of Portland, Oregon
1900 SW 4th Avenue, Portland, OR 97201
www.portlandoregon.gov/bds

Submit your plans in person to:

Development Services Center (DSC), First Floor,
For Hours Call 503-823-7310

Important Telephone Numbers:

BDS main number503-823-7300
DSC automated information line503-823-7310
Building code information503-823-1456
BDS 24 hour inspection request line503-823-7000
Residential information for
one and two family dwelling503-823-7388
General Permit Processing and
Fee Estimate info503-823-7357
City of Portland TTY503-823-6868

Design Revision Narrative

Permit App #: 17-109630-CO

Date November 7, 2019

Attn

Project 5470 NE 16th Avenue,
Portland, OR 97211

Item	Description of Changes, Revisions, Additions, Etc	Detail/Sheet #
1	Exterior Wall Types The exterior East wall type has been revised in order to be built from one side and tilted in place with waterproofing. Assembly has a bearing wall rating of 2 hours (see attached UL V337) for wall type EW-4 and 1 hour (see attached LPB/WPPS-60-01) and this rating is provided from both sides – see attached LP flameblock assemblies notes.	A0.01
2	Door Types & Schedule Door ratings revised to meet required ratings.	A0.06
3	Partial Building Sections Added for clarity to show East wall callouts	A4.11
4	Exterior Details Exterior details revised to show assembly changes and waterproofing details.	A5.06
5	Structural Framing Plans – Level 2 to Level 4 Added for clarity to show 5/S6.01 callout	S2.01, S2.02, S2.03
6	Structural Wood Framing Details Detail 5/S6.01 has been adjusted to match revised architectural wall types	S6.01

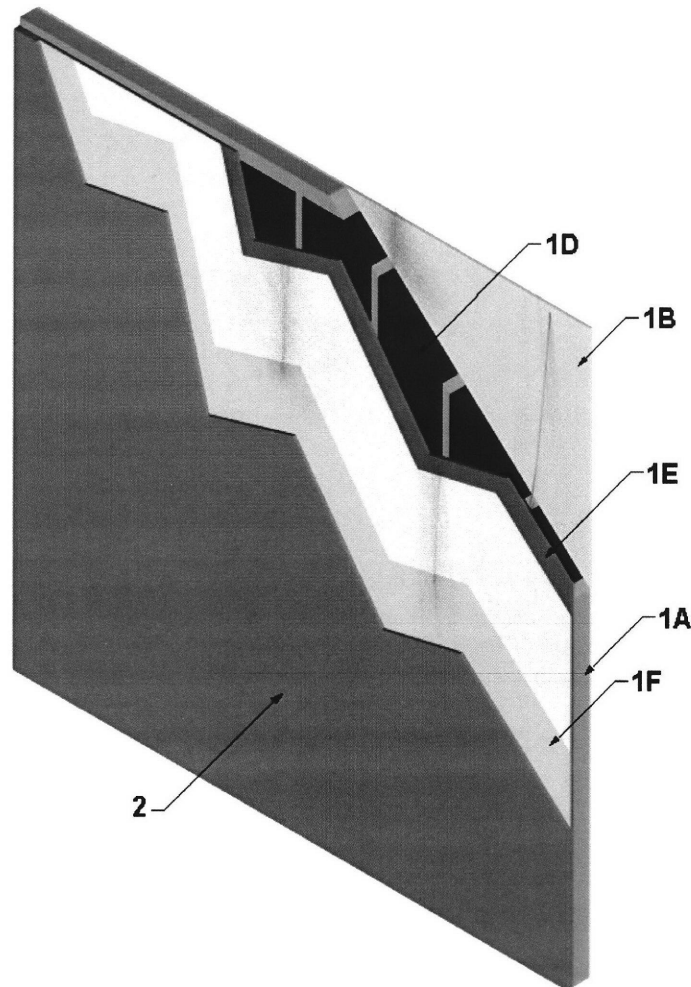
Please let us know if you have any questions.

Thank you,

Boris Kratzenberg

2

Louisiana-Pacific Corporation
Design No. LPB/WPPS 60-01
Loadbearing Wall Assembly
LP® FlameBlock® Fire-Rated OSB Sheathing and LP® FlameBlock® Plus Fire-Rated OSB Sheathing
ASTM E119
Rating: 1 Hour, Restricted Load¹



02-1-17-03-07601-11
17-109030-01-1-00

¹ Restricted to design load for 2x4 construction per national design criteria (e.g. ANSI/AF&PA NDS)

1. WALL ASSEMBLY: Construct a 1 hour rated gypsum wall assembly using the following elements:

- A. **WOOD STUDS** – Install 2 x 6 wood studs spaced 16 in. on center (oc). Attach each wood stud to top and bottom wood plates using three 16d framing nails at each

location. Construct top plate of two wood studs installed horizontally at the top of the gypsum wall assembly and the bottom plate of a single wood stud. Install 2 x 6 wood studs horizontally as cross-bracing positioned at mid-height of the wall.



- B. **GYPSUM BOARD** – Install one layer of nominal 5/8 in. thick Type X gypsum board, oriented vertically or horizontally. Secure gypsum board using nominal 1-7/8 in. long cup-head drywall nails spaced nominally 8 in. oc.

- C. **JOINT TAPE AND COMPOUND (Not Shown)** – Install vinyl or casein, dry or premixed joint compound applied to exterior face of gypsum board in two coats to all exposed fastener heads and gypsum board joints. Install min. 2 in. wide paper, plastic, or fiberglass tape embedded in the first layer of compound over joints in gypsum board.

- D. **INSULATION** – Install nominal 5-1/2 in. thick, nominal 2.5 pcf density unfaced mineral fiber batt insulation friction fit between the wood studs (Item 1A).

- E. **CERTIFIED MANUFACTURER** – Louisiana-Pacific Corporation

CERTIFIED PRODUCT – Wood Sheathing, Fire Retardant Coated Sheathing

MODEL – LP® FlameBlock® Fire-Rated OSB Sheathing or LP® FlameBlock® Plus Fire-Rated OSB Sheathing

Install nominal 48 in. wide x 96 in. tall, nominal 7/16 in. min. thick sheathing with the white side facing out. Install sheathing staggered at gypsum seams. Secure sheathing to wood studs (Item 1A) using 1-7/8 in. long 6d nails spaced 6 in. oc around the perimeter and 12 in. oc in the field. Alternatively, use 8d or 10d nails and the same spacing noted previously.

- F. **VAPOR BARRIER (Optional)** – Install a vapor barrier compliant with International

Building Code requirements or other applicable regulatory requirements if those requirements are greater. Fasten vapor barrier over the sheathing (Item 1E) using sufficient fasteners to prevent air pockets in the wrap.

2. **EXTERIOR WALL COVERING:** Optional for interior fire exposure only or when using Fire Retardant Coated Sheathing (Item 1E) of min. 19/32 in. nominal thickness. Install one of the following items on the exterior side of the wall assembly (Item 1):

- A. **STEEL SIDING** – Install nominal 38-1/2 in. wide x 10 ft. long, 26 GA steel siding with min. 36 in. coverage. Attached siding to wood studs (Item 1A) over the vapor barrier (Item 1F), using 1-7/8 in. long self-tapping drywall screws, two per panel per stud.

- B. **T1-11 SIDING** – Install min. 5/16 in. thick plywood or OSB siding per the manufacturer's published installation instructions.

- C. **FIBER CEMENT BOARD** – Install min. 5/16 in. thick cellulose fiber-reinforced cement board per the manufacturer's published installation instructions.

- D. **WOOD STRAND OR WOOD FIBER PANEL** – Install min. 5/16 in. thick zinc borate treated wood strand or wood fiber panel (e.g. LP® Smartside®) per the manufacturer's published installation instructions.

- E. **WOOD STRAND OR WOOD FIBER LAP SIDING** – Install min. 5/16 in. thick zinc borate treated wood strand or wood fiber lap siding (e.g. LP® Smartside®) per the



manufacturer's published installation instructions.

- F. SOLID WOOD SIDING – Install min. 3/8 in. thick solid wood siding per the manufacturer's published installation instructions.
- G. MANUFACTURED STONE VENEER – Install min. 5/8 in. thick ICC-ES AC51 compliant manufactured stone veneer in accordance with the approved Code Compliance Research Report and the manufacturer's installation instructions.
- H. CEMENT PLASTER – THREE COAT (STUCCO) – Install three-coat cement plaster (stucco) over metal lath or wire fabric lath and water resistive barrier as required by the International Building Code (IBC).
- I. CEMENT PLASTER – ONE COAT (STUCCO) – Install ICC-ES AC11 compliant Omega Products International, Inc., Omega Diamond Wall or Diamond Wall PM Insulating Exterior Stucco Systems, or ICC-

ES AC11 compliant PAREX USA Fiber Reinforced Stucco in accordance with the approved Code Compliance Research Report and the manufacturer's installation instructions.

- 1. Install a water resistive barrier as required by the IBC for installation over wood based sheathing.
- 2. Install metal lath or wire fabric lath as required for compliance with the IBC. Fasten lath through the sheathing to the studs with 1-1/4 in. long, 0.125 in. diameter nails having min. head diameters of 0.355 in., or No. 16 GA corrosion-resistant staples having 15/16 in. crowns. Fasteners spaced 6 in. oc on the studs and perimeter framing.
- 3. Apply stucco coating a min. of 3/8 in. thick in accordance with the approved Code Compliance Research Report and the manufacturer's instructions.

FIRE-RESISTANCE DESIGN

Assembly Usage Disclaimer

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States Design Criteria and Allowable Variances

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada Design Criteria and Allowable Variances

Design No. V337

July 19, 2019

Bearing Wall Rating — 2 Hr

For Wood Studs, Finish Rating — 42 min

Loaded Per 2012 NDS Supplement, ASD Method, Wall Braced by Sheathing, 73% of Design Load Applied to Wall

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

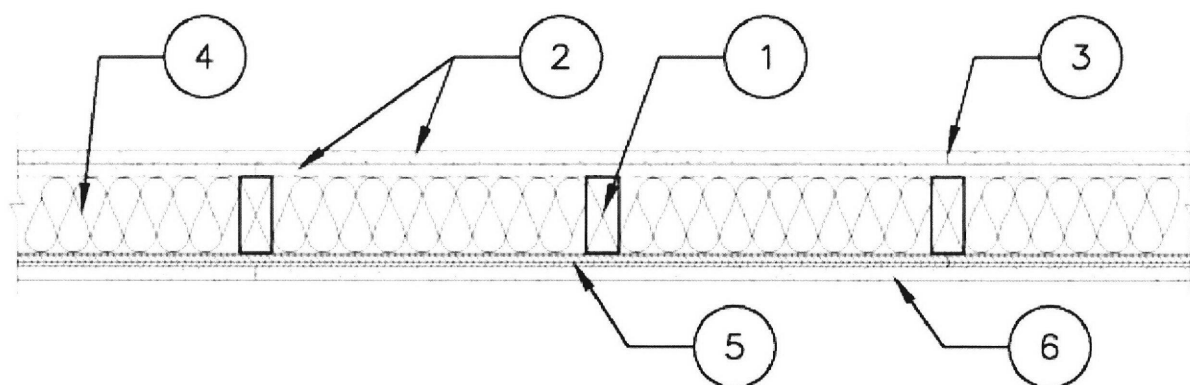
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staggered from base layer, nailed to the studs and bearing plates over the base layer, 8 in. OC. with 8d cup-head drywall nails, 2-3/8 in. long. Type W screws of the same length, head diameter, as the nails and at the spacing described for nails may be used instead of nails. Vertical joints centered over studs and staggered min. 1 stud cavity from the vertical joints of the building units (Item #5).

3. Joints and Fastener Heads — Gypsum board joints covered with tape and joint compound. Fastener heads covered with joint compound.

4. Batts and Blankets* — Faced or unfaced mineral fiber insulation, 5-1/2 in. thick, nominal 2.73 pcf, friction fit in the wall cavity between stud, plates.
See **Batts and Blankets*** (BZJZ) category for names of Classified manufacturers.

5. Building Units* — Building units nailed to the wood framing with 1-7/8 in. long, 6d nails, spaced 6 in. OC. on the perimeter and 12 in. OC. in the field. Vertical joints centered on studs. Horizontal joints backed with nom. 2 by 4 wood blocking. When steel framing is substituted for wood framing, 1-1/4 in. long Type S steel screws are used in lieu of nails. Horizontal joints backed by steel framing.

LOUISIANA-PACIFIC CORP — Type Blazeguard 2-Side

LOUISIANA-PACIFIC CORP — Type LP FlameBlock 2-Side

6. Gypsum Board* — Nom. 5/8 in. thick, 4 ft. wide exterior sheathing applied vertically. Single layer nailed to wood studs and bearing plates 6 in. OC with 1-7/8 in. long 6d cement coated nails. Vertical joints centered over studs and staggered min. 1 stud cavity from the vertical joints of the building units (Item #5). The joints and nail heads shall not be treated with joint compound.

GEORGIA-PACIFIC GYPSUM L L C — Types DGG

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2019-07-19

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- assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

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Evaluation Service®

Pei Evaluation Service® is an accredited ISO Standard 17065 Product Certifier, accredited by the IAS. This **Product Evaluation Report** represents a product that Pei ES has Evaluated. This product has a Product Evaluation Service Agreement & Follow-up Inspection Service Agreement. This **Product Evaluation Report** in no way implies warranty for this product or relieves Louisiana-Pacific Corporation of their liabilities for this product. This **PER** is an official document if it is within one year of the initial or re-approval date.

PER-06013

Initial Approval
December, 2007

Re-Approved
April, 2019

See all Pei ES Listings at: www.p-e-i.com

Report Owner

Louisiana-Pacific Corporation
414 Union Street
Suite 2000
Nashville, TN 37219

Approved Manufacturing Locations

Louisiana-Pacific Corporation
509 4th Street North
Watkins, MN 55389

Louisiana-Pacific Corporation
1500 N. Clarke Industrial Rd.
Thomasville, AL 36784

Product

LP® FlameBlock™ Fire-Rated Sheathing
LP® FlameBlock™ Fire-Rated Structural 1 Sheathing
BlazeGuard® Structural Rated Sheathing
BlazeGuard® Structural 1 Sheathing

Evaluation Report Information

Louisiana-Pacific Corporation Website: lpcorp.com
Louisiana-Pacific Corporation Contact: Scott Johnson - (971) 336-0152

General Details

LP FlameBlock and BlazeGuard **Rated Sheathing** are used for roof sheathing, wall sheathing and sub flooring in Residential and Commercial construction. The sheathing is typically applied to standard dimension lumber framing.

LP FlameBlock and BlazeGuard **Structural 1 Sheathing** are used for roof, sidewall and floor sheathing in Residential and Commercial construction. The sheathing is typically applied to standard dimension lumber framing.

Product Description

LP FlameBlock and BlazeGuard **Rated Sheathing** with a Louisiana-Pacific proprietary coating on **One** or **Both** sides of the substrate are manufactured using APA Rated Oriented Strand Board (OSB) with a performance category of 3/8, 7/16, 19/32, or 23/32. The proprietary coating is applied with either chopped fiberglass strands or continuous fiberglass mat to one side of the OSB creating a 7/16", 15/32", 5/8", or 3/4" nominal thickness. See Table 1 for APA Equivalent Performance Category labeling requirements. Increased fastener withdrawal values are provided in Table 2, and increased structural span ratings are provided in Table 3 and Table 4.

LP FlameBlock and BlazeGuard **Structural 1 Sheathing** with a Louisiana-Pacific proprietary coating on **One** or **Both** sides of the substrate are manufactured using APA Structural 1 OSB or APA Rated OSB as applicable. The coating is applied with either chopped fiberglass strands or continuous fiberglass mat to the side of the OSB creating a 7/16", 15/32", 5/8" or 3/4" nominal thickness. See Table 1 for APA Equivalent Performance Category labeling requirements.

General Product Use

- Both **Rated** and **Structural 1** Sheathings shall be installed per the APA Engineered Wood Construction Guide along with the following notes.
- The **Rated Sheathing** shall be installed with the long side perpendicular to the framing.
- Fasteners shall be applied using the fastening schedule that applies to APA rated OSB sheathings as shown on Table R602.3 in the 2015 & 2012 IRC, Table 2304.9.1 in the 2012 IBC, and Table 2304.10.1 in the 2015 IBC.
- Load ratings and spans are as shown in Table 2, Table 3, and Table 4 of this **PER**.
- Exterior and interior fire rated assemblies are outside the scope of this **PER** and shall be verified through the manufacturer and applicable product listing agency.

Code Compliance

2012 / 2015 International Residential Code	2012 / 2015 International Building Code
R604.1 - Identification and Grade	Section 2303.1.4 - Wood Structural P
R803.2.1 - Identification and Grade	Section 2303.1.5 - Wood Structural P
R803.2.1.1 - Exposure and Durability	

- Meets the prescriptive requirements of the 2012 & 2015 International Residential Code when fasteners are installed as per the fastener schedule noted in Table R602.3(1).
- Surface Burning Characteristics - Flame Spread 0 / Smoke Development 5 when tested in accordance with ASTM E 84 (UL 723).

Tested to

APA Test Method S-2 Sheathing and Sturd-I-Floor Performance Under Uniform Loads.

APA PS2-10 - Performance Standard for Wood Based Structural-Use Panels

ASTM E 661-03 Standard Test Method for Performance of Wood and Wood-Based Floor and Roof Sheathing Under Concentrated Static and Impact Loads.

ASTM D1037-99 Fastener Withdrawal Test.

ASTM D3043-00 - Standard Test Methods for Structural Panels in Flexure.

Department of Commerce (DOC) Voluntary Product Standard PS 2-04 - Performance Standard for Wood-Based Structural-Use Panels.

ASTM E72-05 - Standard Test Method of Conducting Strength Tests of Panels for Building Construction, Section 14 Racking Load - Evaluation of Sheathing Materials.

ASTM E84-10 (UL 723) - Standard Test Method Surface Burning Characteristics of Building Materials.

CAN/ULC-S102-10 - Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies, Seventh Edition.

ASTM E2126-11 - Standard Test Methods for Cyclic (Reversed) Load Tests for Shear Resistance of Vertical Elements of the Lateral Force Resisting Systems for Buildings.

Product Labeling

Each Sheet or Bundle shipped of **LP FlameBlock** or **BlazeGuard** Sheathing, that is covered by this **PER**, must have a label attached with at least the following information:

1. Manufacturer Name
2. Date of Manufacture
3. This **PER** Number & **Pei ES** Logo
4. Load vs. Span rating or public website to ratings
5. The Third Party Inspection Agency Information
6. APA Equivalent Performance Category (See Summary in Table 1)

Table 1 - APA Equivalent Performance Category¹

APA Rated OSB Substrate			APA Structural 1 Substrate		
Base Performance Category	Coated 1-side	Coated Both Sides	Base Performance Category	Coated 1-side	Coated Both Sides
3/8 OSB	7/16 OSB [†]	7/16 Structural 1 [†]	3/8 Structural 1	7/16 Structural 1 [†]	7/16 Structural 1 [†]
7/16 OSB	15/32 OSB [†]	15/32 Structural 1 [†]	7/16 Structural 1	15/32 Structural 1 [†]	15/32 Structural 1 [†]
15/32 OSB	15/32 OSB	15/32 Structural 1 [†]	15/32 Structural 1	15/32 Structural 1	15/32 Structural 1
19/32 OSB	19/32 OSB	19/32 OSB	19/32 Structural 1	19/32 Structural 1	19/32 Structural 1
23/32 OSB	23/32 OSB	23/32 OSB	23/32 Structural 1	23/32 Structural 1	23/32 Structural 1

Notes:

1. APA equivalent performance categories are based upon current testing in accordance with APA PS 2-10. Tabulated labeling requirements are subject to change pending additional testing.

[†] Equivalent performance category verified as better than original base substrate through testing in accordance with APA PS 2-10.

Acceptable Evaluation Marks



Fastener and Span Rating Tables
Table 2: Fastener Withdrawal Values for LP FlameBlock and BlazeGuard^{1, 2, 3}

Product Description	Design Loads					
	1-1/4" Hand Driven Roofing Nail	1-1/4" Power Driven Roofing Nail	#10 Wood Screw	#12 Wood Screw	#14 Wood Screw	#15 Wood Screw
7/16 Performance Category OSB w/ Chopped Fiberglass	14.9 lbs.	21.2 lbs	97.0 lbs	98.6 lbs.	106.3 lbs	107.5 lbs
7/16 Performance Category OSB w/ Continuous Mat Fiberglass	16.4 lbs.	16.4 lbs.	---	---	---	---
19/32 Performance Category OSB w/ Continuous Mat Fiberglass	29.5 lbs.	26.0 lbs.	---	---	---	---

Table 3: Roof Span Rating^{1, 2, 3}

Description		7/16 Performance Category OSB [†]	7/16 Performance Category OSB w/ Chopped Fiberglass	7/16 Performance Category OSB w/ Mat Fiberglass	19/32 Performance Category OSB [†]	19/32 Performance Category OSB w/ Mat Fiberglass
Framing Spacing	Coated Side	Uniform psf	Uniform psf	Uniform psf	Uniform psf	Uniform psf
16" o.c.	Up	100	141	140	275	275
16" o.c.	Down	---	---	200	---	---
24" o.c.	Up	40	62	72	120	151
24" o.c.	Down	---	---	94	---	---
32" o.c.	Up	none	---	34	60	81

Table 4: Floor Span Rating^{1, 2}

Description		19/32 Performance Category OSB [†]	19/32 Performance Category OSB w/ Mat Fiberglass
Framing Spacing	Coated Side	Uniform psf	Uniform psf
16" o.c.	Up	150	192
19.2" o.c.	Up	100	100

Notes:

1. All **Rated Sheathing** Design values and fastening schedules, as published in the APA Engineered Wood Construction Guide (E30W/Revised February 2016), should be used for **FlameBlock** or **BlazeGuard Rated Sheathing** products with a Louisiana-Pacific proprietary coating on **One** or **Both** sides of the substrate unless higher values are shown in the charts above.

2. All **Structural 1 Sheathing** Design values and fastening schedules, as published in the APA Engineered Wood Construction Guide (E30W/Revised February 2016) should be used for **FlameBlock** or **BlazeGuard Structural 1** Products with a Louisiana-Pacific proprietary coating on **One** or **Both** sides of the substrate.

3. **FlameBlock** and **BlazeGuard Structural 1 Sheathing** may be manufactured using 3/8" or 7/16" OSB Rated Sheathing with a Barrier Technology proprietary coating on **Both** sides of the substrate. Seismic shear wall equivalency has been verified through cyclic load tests in accordance with ASTM E2126 and comparison to the nominal unit shear capacities and apparent shear stiffness from 2008 and 2015 Special Design Provisions for Wind & Seismic (SDPWS) Table 4.3A. Lateral force resisting systems shall be designed in accordance with the published design criteria (SDPWS Table 4.3A, etc.) for the equivalent performance category on the product label. See Table 1 for APA Equivalent Performance Category labeling requirements.

[†] Values taken from APA Engineered Wood Construction Guide (E30W/Revised February 2016) for comparison purposes.

Product Documentation

A Product Evaluation Service Agreement between *Pei Evaluation Service* and Louisiana-Pacific Corporation

A Follow-up Inspection Service Agreement between *Progressive Engineering Inc.* and Louisiana-Pacific Corporation

A Louisiana-Pacific Corporation Factory Audit Manual - Report No. 3166174SAT-006 REV. 5 - Dated: 3/26/2018

LP Building Products SDS for LP Engineered Wood Products with Fire-Retardant Coating - Dated: 7/24/2017

LP Building Products Installation Instructions LPFB0016

LP Building Products Specifications Sheet LPFB0017

LP Building Products Technical Guide - Dated: 12/2015

ICC-ES Evaluation Report ESR-1365, Reissued on 4/2018

A *Pei* test report No. 2005-0132(A) - Nail Withdrawal Test - Dated: 1/7/2005, Revised: 5/8/2018.

A *Pei* test report No. 2005-0132(B) - APA Test Method S-2 Uniform Load Comparison Tests on LP Flameblock Fire-Rated OSB Sheathing or Mulehide Mat, Mulehide Chop and 7/16" OSB - Dated: 1/19/2005, Revised: 5/8/2018.

A *Pei* test report No. 2006-297(A) - Uniform Load Test on 7/16" & 19/32" Sheathing on 24" o.c. Framing - Re-Dry Test - Dated: 10/16/2006, Revised 5/3/2018

A *Pei* test report No. 2006-297(B) - Uniform Load Test on 7/16" & 19/32" Sheathing on 24" o.c. Framing - Re-Dry Test - Dated: 10/16/2006, Revised 5/3/2018

A *Pei* test report No. 2006-297(C) - Fastener Withdrawal Tests from Sheathing - Dated: 3/21/2006, Revised 5/3/18

A *Pei* test report No. 2006-297(D) - Uniform Load Test on 7/16" & 19/32" Sheathing on 16" o.c. Framing - Dry Test - Dated: 10/16/2006, Revised 5/3/2018.

A *Pei* test report No. 2006-297(E) - Uniform Load Test on 7/16" & 19/32" Sheathing on 16" o.c. Framing - Re-Dry Test - Dated: 10/16/2006, Revised 5/3/2018.

A *Pei* test report No. 2006-297(G) - Concentrated Load & Impact Load Test on 7/16" & 19/32" Sheathing on 16" o.c. Framing - Dry Test - Coating Side Up - Dated: 10/16/2006, Revised 5/3/2018.

A *Pei* test report No. 2006-297(H) - Concentrated Load & Impact Load Test on 7/16" & 19/32" Sheathing on 16" o.c. Framing - Wet Test - Coated Side Up - Dated: 10/16/2006, Revised 5/3/2018.

A *Pei* test report No. 2006-297(I) - Concentrated Load & Impact Load Test on 7/16" & 19/32" Sheathing on 24" o.c. Framing - Dry Test - Coated Side Up - Dated: 10/16/2006, Revised 5/3/2018.

A *Pei* test report No. 2006-1099 (A) - Concentrated Load & Impact Load Test on 7/16" Sheathing on 32" o.c. Framing - Wet Test - Coated Side Up - Dated: 10/23/2006, Revised 5/3/2018.

A *Pei* test report No. 2006-1099(B) - Uniform Load Test on 19/32" Sheathing on 32" o.c. Framing - Dry Test - Dated 3/2/2006, Revised 5/3/18

A *Pei* test report No. 2006-1707 - APA Test Method S-2 Uniform Load Testing on 7/16" Chopped BlazeGuard (OSB) Chopped Fiberglass - Dated: 11/9/2006, Revised 5/3/2018.

A *Pei* test report No. 2007-425 (A) - Concentrated Load & Impact Load Test on 7/16" Sheathing on 16" o.c. Framing - Dry Test - Coated Side Down - Dated: 7/13/2007, Revised 5/3/2018.

A *Pei* test report No. 2007-425 (B) - Concentrated Load & Impact Load Test on 7/16" Sheathing on 16" o.c. Framing - Dry Test - Coated Side Down - Dated: 6/25/2007, Revised 5/3/2018.

A *Pei* test report No. 2007-425 (C) - Concentrated Load & Impact Load Test on 7/16" Sheathing on 16" o.c. Framing - Wet Test - Coated Side Down - Dated: 6/19/2007, Revised 5/3/2018.

A *Pei* test report No. 2007-425 (D) - Uniform Load Tests on 7/16" Sheathing on 24" o.c. Framing - Dry Test - Coated Side Down - Dated: 7/25/2007, Revised 5/3/2018.

A *Pei* test report No. 2007-425 (E) - Concentrated Load & Impact Load Test on 7/16" Sheathing on 24" o.c. Framing - Dry Test - Coated Side Down - Dated: 7/31/2007, Revised 5/3/2018

A *Pei* test report No. 2007-425 (F) - Concentrated Load & Impact Load Test on 7/16" Sheathing on 24" o.c. Framing - Wet Test - Coated Side Down - Dated: 7/30/2007, Revised 5/3/2018.

A *Pei* test report No. 2007-425 (G) - Uniform Load Tests on 7/16" Sheathing on 32" o.c. Framing - Dry Test - Coated Side Up - Dated: 6/7/2007, Revised 5/3/2018.

A *Pei* test report No. 2007-425 (H) - Concentrated Load & Impact Load Test on 7/16" Sheathing on 32" o.c. Framing - Wet Test - Coated Side Up - Dated: 6/21/2007, Revised 5/3/2018.

A *Pei* test report No. 2007-425 (I) - Concentrated Load & Impact Load Test on 7/16" Sheathing on 32" o.c. Framing - Dry Test - Coated Side Up - Dated: 7/31/2007, Revised 5/3/2018.

A *Pei* test report No. 2007-1160 - Wall Racking Comparison Test on 15/32" OSB "A" Sheathing vs. 15/32" OSB Dated: 9/21/2007, Revised 4/30/2018.

A *Pei* test report No. 2008-296 (A) - Uniform Load Tests on Mule Hide FR Deck Panel "C" 24" O.C. Framing - Dry Test - Coated Side Up - Dated: 2/26/2008, Revised 4/30/2018.

Product Documentation Continued

A *Pei* test report No. 2008-296 (B) - Concentrated Load & Impact Load Mule Hide FR Deck Panel "C" 24" O.C. Framing - Dry Test - Coated Side Up - Dated: 3/07/2008, Revised 4/30/2018.

A *Pei* test report No. 2008-296 (C) - Concentrated Load & Impact Load Mule Hide FR Deck Panel "C" 24" O.C. Framing - Wet Test - Coated Side Up - Dated: 3/11/2008, Revised 4/30/2018.

A *Pei* test report No. 2011-362A - DOC PS 2 Evaluation of Sheathing Materials, Racking Load using 3/8" OSB with Barrier coating - Dated: 5/3/2011, Revised 4/26/2018.

A *Pei* test report No. 2011-362B - DOC PS 2 Evaluation of Sheathing Materials, Bond Performance Testing using 3/8" OSB with Barrier coating - Dated: 5/3/2011, Revised 4/27/2018.

A *Pei* test report No. 2011-362C - DOC PS 2 Evaluation of Sheathing Materials, Dimensional Stability Testing using 3/8" OSB with Barrier coating - Dated: 5/4/2011, Revised 4/27/2018.

A *Pei* test report No. 2011-362D - DOC PS 2 Uniform Load Test using 3/8" OSB with Barrier coating. 24" o.c., Dry Test - Dated: 4/6/2011, Revised 4/27/2018.

A *Pei* test report No. 2011-362E - DOC PS 2 Concentrated & Impact Load Test using 3/8" OSB with Barrier coating. Dry & Wet Test with Coated side down - Dated: 4/13/2011, Revised 4/27/2018.

A *Pei* test report No. 2016-2051 - DOC PS 2 Evaluation of Sheathing Materials LP Flameblock Fire-Rated OSB Sheathing or OSB BlazeGuard Bond Performance - Dated: 11/26/2016, Revised 3/28/2018.

A *Pei* test report No. 2017-6147 - DOC PS 2-11 Uniform Load, Concentrated & Impact Load Testing on 7/16" LP Flameblock Fire-Rated Structural 1 Sheathing - Dated: 11/1/2017

Test report No. 10NK03669 - UL 723 Test for Surface Burning Characteristics of Building Materials - Dated: 4/20/2010

Test report No. 10CA43866 - CAN/ULC-S102-10 Test for Surface Burning Characteristics of Building Materials - Dated: 11/18/2010

Test Report No. T2016P-50 - ASTM E2126 Cyclic Shear Wall Testing of LP FlameBlock Fire-Rated OSB Sheathing - Dated: 12/5/2016

A University of Maine test report No. 18-11-1576 - Testing of LP FlameBlock Fire rated OSB Sheathing, Dated 11/8/2017

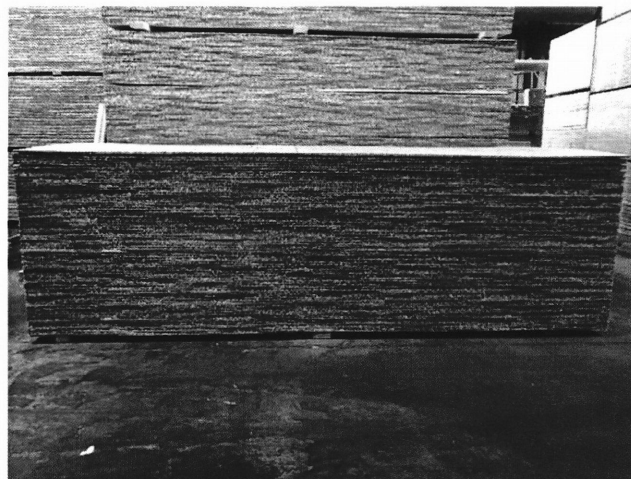


Figure 1 - LP FlameBlock Raw Bundles

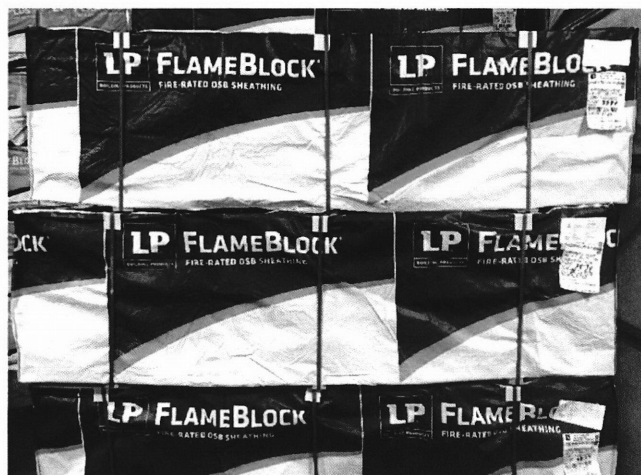


Figure 2 - LP FlameBlock packaged as shipped