Structural Performance
And Fire Resistance
In The Same Panel

Technical Guide
LP® FlameBlock® Fire-Rated Sheathing: Build On Our Strength, Count On Our Fire Resistance

Product Description

LP® FlameBlock® Fire-Rated Sheathing is a code-compliant oriented strand board (OSB) panel with a fire-resistant Pyrotite® treatment covering one or both sides. The Pyrotite treatment consists of a layer of fiberglass-reinforced magnesium oxide cement tightly bonded to the OSB surface. In addition to providing burn-through resistance and a Class A Flame Spread rating, this layer reinforces the OSB substrate, resulting in full standard load/span ratings and shear design values for each thickness category. LP FlameBlock panels install with standard tools, methods and fasteners, and are highly resistant to cracking or damage from impact.
Size/Length

LP FlameBlock Fire-Rated Sheathing is available in standard thickness and performance categories, including Struct-1 performance grade, and in nominal dimensions of 4’ x 8’, 4’ x 9’, and 4’ x 10’.

Common Applications

- Roof decks, for vertical continuity of firewalls
- Exterior walls located near property lines
- Load-bearing party walls
- Exterior walls in Type III buildings
- Exterior walls and eaves in wildfire zones

Code Compliance and Fire Performance

- ICC certified (ESR-1365, AC264, Click here for online listing) for a range of roof deck and wall applications in various building categories
- Class A Flame Spread Rating (ASTM E84, UL723, Click here for online listing)
- Meets requirements for 15-minute thermal barriers
- CALFIRE/OSFM code-approved (CBC Chapter 7A) for use in exterior walls, eaves and soffits in California WUI Zones

Relevant Listings/Assemblies:
- Roof Decking to Satisfy Vertical Continuity Requirements for Fire Walls
- Bearing And Non-Bearing Exterior Walls For Type III Construction
  - UL Listing BXUV.U349
  - UL Listing BXUV.W408
- Load-Bearing Common Walls
  - UL Listing BXUV.U350
- Load-Bearing 1-Hour Fire-Rated Exterior Walls For Type V Construction
  - Intertek Listing LPB/WA-60-01
  - UL Listing BXUV.U348

Weather Resistance

With LP FlameBlock Fire-Rated Sheathing’s water-resistant adhesives and durable Pyrotite treatment, each panel carries an Exposure 1 classification, so it can withstand exposure to moisture during normal construction delays. As with similarly classified panels, installation of building wrap is required for weather protection during construction.

Stability

LP FlameBlock Fire-Rated Sheathing won’t cup, warp, split or delaminate. You can count on consistent quality, without core voids and knots. Each panel is uniform, strong, dense, and easy to work with. LP FlameBlock Sheathing is designed to be installed with standard tools (carbide saw blades recommended) and fasteners, using the same procedures and safety precautions applicable to LP OSB. See installation instructions on page 13 for details.
Warranty

20-Year Transferable Limited Warranty. For full warranty information, see page 15.

Disposal and Waste

The use of LP FlameBlock Fire-Rated Sheathing in fire-rated bearing walls reduces overall material usage and waste when compared to gypsum-plus-sheathing applications. Panels contain no harmful chemicals.

Structural Performance

The fiberglass reinforcement within the Pyrotite treatment of LP FlameBlock Fire-Rated Sheathing increases the shear capacity, bending performance, and impact resistance of the underlying OSB substrate. Structural design properties are identical to those of standard, PS2-certified wood structural panels in the same thickness category, with no deductions as a result of the treatment. (See Figure 1 and Figure 2.) Structural performance and compliance with other PS2 standards are certified by P.E.I., an independent ISO-certified testing laboratory.

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<th>FIGURE 1. RECOMMENDED UNIFORM ROOF LIVE LOADS FOR LP FLAMEBLOCK FIRE-RATED SHEATHING (a) AND RATED SUBFLOOR WITH STRENGTH AXIS PERPENDICULAR TO SUPPORTS (c)</th>
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<td><strong>Panel Span Rating</strong></td>
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(a) Tongue and groove edges, panel edge clips (one midway* between each support, except two equally spaced between supports 48 in. on center or greater), lumber blocking, or other.
(b) Applies to panels 24 in. or wider applied over two or more spans.
(c) No established tolerance.

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<th>FIGURE 2. ALLOWABLE SHEAR (POUNDS PER FOOT) FOR PANEL SHEAR WALLS WITH FRAMING OF DOUGLAS-FIR, LARCH, OR SOUTHERN PINE (d) OR WIND OR SEISMIC LOADING (e) (See also 2006 IBC Table 2306.4.1)</th>
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APPLICATIONS & ASSEMBLIES

Roof Decking to Satisfy Vertical Continuity Requirements for Fire Walls
Reference Documents: 2009 and 2012 IBC Section 706.6 and ESR 1365, Section 4.2a

Examples: Roof decks over interior or exterior fire walls in single family, multifamily and townhomes.

Framing: As required by the pertinent fire wall and roof assemblies and in accordance with local building code.

Exterior: Minimum 7/16 category LP FlameBlock with Pyrotite treatment facing the interior, fastened to supports with minimum 1⅝” 6d nails, spaced 6” o.c. on the perimeter and 12’ o.c. in the field, for a distance of 4 feet on both sides of the wall. Minimum Class B roof covering installed per design.

Interior: Per building design
Reference Design: Intertek LPB/WA 60-01
Click here for online listing.

Fire Rating: 1 hour from both sides

Bearing Wall - Maximum loading of 2,145 lbs. per stud

Examples: Single and multifamily buildings close to lot lines.

Framing: Nominal 2" x 6" framing, spaced 16" o.c., with two top plates and one bottom plate. Mineral wool insulation, nominal 2.5 pcf and 5/8" thick, pressure fit in the cavities between studs. Mineral wool insulation is required for 1-hour fire rating from exterior side.

Exterior: Minimum 7/16 category LP FlameBlock with Pyrotite treatment facing the exterior, fastened to studs with minimum 1½ 6d nails, spaced 6" o.c. on perimeter and 12" in the field. Horizontal joints are to be staggered with those of interior GWB. Code-compliant building wrap installed per manufacturer's instructions. Wood, wood composite, fiber cement, stucco or steel exterior facing options per Intertek listing, installed per manufacturers instructions.

Interior: Any classified ½" Type X GWB, applied vertically and nailed to studs with minimum 1½ drywall nails or code-compliant screws, spaced 8" o.c. Wallboard joints must be covered with tape and joint compound, and fastener heads covered with joint compound.

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**HORIZONTAL SECTION**

Design No. - Intertek Labs - BTC/WA 60-01 (LPB/WA-60-01)
1-Hour Fire Rating from Both Sides
Bearing Wall

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**VERTICAL SECTION**

Design No. - Intertek Labs - BTC/WA 60-01 (LPB/WA-60-01)
1-Hour Fire Rating from Both Sides
Bearing Wall
Reference Design: BXUV.U348

Click here for online listing.

Fire Rating: 1 hour from interior side only

Finish Rating: 23 minutes

Bearing wall

Examples: Multifamily/senior living and commercial Type V property where a fire rating from the exterior is not required.

Framing: Nominal 2” x 4” framing, spaced 16” o.c. or 2” x 6” framing, spaced 24” o.c., with two top plates and one bottom plate. Faced or unfaced mineral fiber insulation, nominal 3.0 pcf, or fiberglass insulation, nominal 0.9 pcf, pressure fit in the cavities between wall framing.

Exterior: Minimum 7/16 category LP FlameBlock with Pyrotite treatment facing wall cavity, fastened to studs with minimum 1¾” 6d nails, spaced 6” o.c. on perimeter and 12” in the field. Code-compliant building wrap installed per manufacturer’s instructions. Wide range of exterior facings accepted, installed per manufacturer’s instructions.

Interior: Any classified ½” Type X GWB, applied vertically and nailed to studs with minimum 1¾” drywall nails or code-compliant screws, spaced 7” o.c. Wallboard joints covered with tape and joint compound. Fastener heads covered with joint compound.
Reference Design: BXUV.U349
Click here for online listing.

Fire Rating: 2 hours from interior side only
Finish Rating: 55 minutes

Bearing wall

Examples: Type III buildings (5 & 6 stories) mixed use/multifamily residential buildings with adequate fire separation distance.

Framing: Nominal 2˝ x 4˝ framing, spaced 16˝ o.c. or 2˝ x 6˝ framing, spaced 24˝ o.c., with two top plates and one bottom plate, OR minimum No. 20 MSG corrosion-protected steel studs, minimum 3½˝ deep. Maximum spacing 16˝ o.c., attached to floor and ceiling tracks with minimum ½˝ Type S-12 steel screws or bolted or welded per AISI specifications. Faced or unfaced glass fiber insulation, nominal 0.25 pcf and 3½˝ thick, or mineral wool insulation, 3.0 pcf and 3½˝ thick, pressure fit in the cavities between studs.

Exterior: Minimum 7/16 category LP FlameBlock with Pyrotite treatment on both sides, fastened to studs with minimum 1½” 6d nails (screws when steel studs are used), spaced 6” o.c. on perimeter and 12” in the field. Code-compliant building wrap installed per manufacturer’s instructions. Wide range of exterior facings accepted, installed per manufacturer’s instructions.

Interior: Two layers of any classified ⅝” Type X GWB, applied vertically with joints staggered. Base layer nailed to studs with minimum ⅝” drywall nails or code-compliant screws, 7” o.c. Face layer fastened to studs and bearing plated with 8d cement-coated drywall nails or screws, spaced 8” o.c. Face layer wallboard joints covered with tape and joint compound. Fastener heads covered with joint compound. For securement to steel studs and track, Type S or S-12 steel screws, 1” for base layer and 1⅝” long for face layer, with spacing same as that for nails.
Reference Design: Bxuv.W408

Click here for online listing.

Fire Rating: 2 hours from interior side, 1 hour from exterior side
Finish Rating: 50 minutes on interior face, 17 minutes on exterior face

Bearing wall

Examples: Type III buildings (5 & 6 stories) mixed use/multifamily residential buildings.

Framing: Nominal 2” x 4” framing, spaced 16” o.c. or 2” x 6” framing, spaced 24” o.c., with two top plates and one bottom plate. Faced or unfaced glass fiber insulation, nominal 0.25pcf and 3⅛” thick, or mineral wool insulation, 3.0 pcf and 3⅛” thick, pressure fit in the cavities between studs. Faced or unfaced mineral wool insulation is required for 1-hour fire rating from exterior side.

Exterior: Minimum 7/16 category LP FlameBlock with Pyrotite treatment on both sides, fastened to studs with minimum 1¾” 6d nails, spaced 6” o.c. on perimeter and 12” in the field. Code-compliant building wrap installed per manufacturer’s instructions. Wood, wood composite, stucco, and fiber cement exterior facing options per UL listing, installed per manufacturer’s instructions.

Interior: Two layers of any classified ⅝” Type X GWB, applied vertically with joints staggered. Base layer nailed to studs with minimum 1¾” drywall nails or code-compliant screws, 7” o.c. Face layer fastened to studs and bearing plated with 8d cement-coated drywall nails or screws, 8” o.c. Face layer wallboard joints covered with tape and joint compound. Fastener heads covered with joint compound.
Reference Design: BXUV.U350

Click here for online listing.

Fire Rating: 2 hours from both sides
Finish Rating: 23 minutes

Bearing wall

STC Ratings:
- Configuration A: 61
- Configuration B: 56

Examples: Walls between living units, 2-hour chase walls, or between living units and corridors/stairs.

Framing:
Nominal double row of 2” x 4” framing, spaced 16” o.c. or 2” x 6” framing, spaced 24” o.c., with two top plates and one bottom plate, with studs effectively fire stopped. Opposite stud rows spaced a minimum of 1” apart, and opposing studs staggered 8” o.c. Faced or unfaced mineral wool insulation, nominal 3.0 pcf and 3 1/2” thick, pressure fit in the cavities between studs.

Living Space Side:
Configuration A — Minimum 7/16 category LP FlameBlock with Pyrotite treatment facing the stud cavities, fastened to studs with minimum 1/4” 6d nails, spaced 6” o.c. on perimeter and 12” in the field. 3/8” Type X GWB, applied vertically and fastened to wall studs, with joints staggered with those of FlameBlock sheathing.

Configuration B — Resilient channel of 25 MSG galvanized steel, installed horizontally and spaced vertically 24” o.c., secured to studs with min. 1/4” diamond-shaped point, double lead Phillips head steel screws. 3/8” Type X GWB, applied vertically and fastened with minimum 1” self-drilling, self-tapping Type S or S-12 steel screws.

Concealed Space Side:
Configuration A — No sheathing required. Fire blocking per code requirements.

Configuration B — Minimum 7/16 category LP FlameBlock with Pyrotite treatment facing the stud cavities, fastened to studs with minimum 1/4” 6d nails, spaced 6” o.c. on perimeter and 12” in the field.
Examples: Single and multifamily homes in areas designated as high wildfire hazard.

Exterior: Minimum 15/32 category LP FlameBlock with Pyrotite treatment facing the exterior, fastened to studs with minimum 1¾” 6d nails, spaced 6” o.c. on perimeter and 12” in the field. Exterior cladding of LP SmartSide Precision Series lap or panel siding, cedar shingles of nominal ½” butt thickness or less, or plain bevel wood siding of cedar and other species in various widths. Cladding material installed in accordance with manufacturer’s instructions.

Framing and Insulation: Per building design and in accordance with California Building Code

Interior Finish: Per building design and in accordance with California Building Code

![Diagram of exterior wall construction with labels for framing, insulation, and exterior facings.](image-url)
**Reference Documents: California WUI Zone Test Protocol 12-7A-3**

*Click here for online listing.*

*Cal-Fire/OSFM WUI Products Handbook,*
*Western Fire Center Test Report No. 10085*

**Examples:** Closed soffit in single and multifamily homes in areas designated as high wildfire hazard.

**Exterior:** Minimum 7/16 category LP FlameBlock with Pyrotite treatment facing the exterior, fastened to supports with minimum 1½” 6d nails, spaced 6” o.c. on perimeter and 12” in the field. Exterior cladding (soffit ceiling) of cedar or redwood T&G cladding boards of nominal ½” thickness and greater. Cladding material installed in accordance with manufacturer’s instructions.

**Framing and Insulation:** Per building design and in accordance with California Building Code.

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**Reference Design: California WUI Zone Guidelines for Under Eave Construction (Ignition-Resistant Construction)**

*Click here for online listing.*

*Cal-Fire/OSFM WUI Products Handbook, CBC Section 707A*

**Examples:** Open eaves in single and multifamily homes in areas designated as high wildfire hazard.

**Roof Decking:** Minimum 7/16 category LP FlameBlock with Pyrotite treatment facing downward and coated with exterior-grade paint.

**Framing:** Exposed rafter tails and cross-blocking of minimum nominal 2” lumber.
Installation Instructions

General Requirements

• Comply with local safety regulations when installing roof, wall, or subfloor sheathing.

• Comply with the following manufacturer’s instructions and with APA’s Engineered Wood Construction Guide Form E30U (September 2007) or the current equivalent.

Storage and Handling

• Store panels in clean, dry areas off the ground. If possible, store indoors. If stored outside, cover with plastic sheets, tarps or the LP FlameBlock Fire-Rated OSB Sheathing unit cover. Keep cover open and away from the sides and bottom of panels to allow for air circulation.

• Additional protective measures may be necessary during extended adverse weather conditions.

Roof Installation

• Place the skid-resistant side up with the white fire-resistant surface facing down and wear skid-resistant shoes when installing LP FlameBlock Fire-Rated OSB Sheathing as roof sheathing on either side of a partition wall in multi-family residential buildings, or in any application where reducing the spread rate of an interior fire is the intent of the code requirement. Install LP FlameBlock Fire-Rated OSB Sheathing with the white Pyrotite side facing upwards when used under EPDM roof membranes and in other applications where reducing the spread rate of fire from an exterior source is the intent.

• Install with the long dimension or strength axis of the panel across supports and with the panel continuous over two or more spans.

• Provide 1/8” space at panel ends and edges. Use a spacer tool (i.e. 10d box nail) to ensure accurate and consistent spacing.

• Panel end joints shall occur over framing. Stagger end joints in each succeeding row.

• For panels in the 7/16 and 15/32 category, provide additional panel stiffness by installing panel edge clips mid-span on all unsupported edges.

• Nail 6” o.c. along supported panel ends and edges and 12” o.c. at intermediate supports. Fasten panels 3/8” from panel edges. Use 8d common nails for panels up to 1” thickness. For panels over 1” use 8d ring-shank or 10d common nails. Other code-approved fasteners may be used.

• Cover roof sheathing as soon as possible with roofing felt or shingle underlayment for protection against excessive moisture prior to roofing. If any edge swelling occurs prior to roof underlayment installation, the exposed wood substrate side of panels with raised joints should be sanded flat.

• Remove wrinkles and flatten surface of shingle underlayment before installing shingles. High performance shingle underlayment is recommended for better results.

• Heavier weight and/or textured shingles are recommended to better mask imperfections in roofing assembly.

• When installed as roof deck in open eaves, the exposed underside of panels, as well as any exposed edges, must be coated with exterior-grade paint.

NOTE | Check with your local building department before deciding on an installation method.
Wall Installation

- LP FlameBlock Fire-Rated OSB Sheathing panels should be installed as specified in the relevant fire-rated assembly. In the absence of a listed fire-rated assembly, panels should be installed vertically, with the horizontal joints blocked.
- When installing LP FlameBlock Fire-Rated OSB Sheathing in walls, consult approved construction plans to determine the proper orientation of the white, fire-resistant panel surface.
- Provide $\frac{1}{8}$” space between panel ends and edges. Use a spacer tool (i.e. 10d box nail) to ensure accurate and consistent spacing.
- At minimum, nail 6” o.c. along supported panel ends and edges and 12” o.c. at intermediate supports. Fasten panels $\frac{3}{8}$” from panel edges. Use 6d common nails for panels up to 1” thickness. For panels over 1” use 8d ring-shank or 8d common nails. Other code-approved fasteners may be used.

**NOTE**  
For shear walls, use the fastener type and spacing specified in approved construction documents.
Warranty

20-Year Limited Warranty

2-Year Open Soffit Limited Warranty

1. Warranty Coverage

This LP warranty applies to the original retail purchaser ("Purchaser") of LP’s FlameBlock® Class A Fire Retardant OSB structural sheathing panels with Pyrotite (the “Product”) and to any owner of a building in which the Product is originally installed (together, the “Owner”).

Louisiana-Pacific Corporation ("LP") warrants that its Product will:

a. At the time of manufacture, meet or exceed the manufacturing standards under U.S. Product Standard PS2 and will exhibit none of the following manufacturing defects: Delamination, cupping, warping, core voids and knotholes. Delamination is defined as a visible separation within the panel which results in reduction of the panel’s structural strength. Minor surface characteristics such as loose or folded surface flakes and/or minor edge swelling do not qualify as Delamination.

b. At the time of manufacture, meet or exceed the specified standard for Class A Fire Retardant Sheathing as defined by ASTM Standards E-84, E-108 and D-5516.

c. When installed in a wall or roof sheathing application or other application in which the product is enclosed within a structure or sheathed by an exterior cladding material and maintained in accordance with LP’s applicable published Product installation and maintenance instructions in effect at the date of installation, for a period of twenty (20) years from the date of installation perform as reasonably required of a structural sheathing material in the building in which the Product was originally installed.

d. When installed as roof sheathing that extends over eaves and the underside of the product is left exposed to the exterior (open soffit application) and maintained in accordance with LP’s applicable published Product installation and maintenance instructions in effect at the date of installation, will for a period of two (2) years from the date of installation perform as reasonably required of a structural sheathing material in the building in which the Product was originally installed.

e. Damage from termites or other wood destroying organisms;

f. Damage from wood fungal decay or rot; or

g. Damage resulting from an Owner’s failure to comply with the inspection and maintenance requirements set out under Section 6 of this warranty.

2. Exclusion of Implied Warranties; No Other Express Warranties

This warranty is the only warranty applicable to this Product and excludes all other express or implied warranties, including any implied warranty of merchantability or fitness for a particular purpose, or any warranties otherwise arising from the course of dealing or usage of trade or advertising, except where such warranties arise under applicable consumer product warranty laws and cannot lawfully be disclaimed, in which event such warranties are limited to the shortest period as permitted or required under applicable law. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. No other express warranty has been made or will be made on behalf of LP with respect to this Product.

4. Remedies

This section provides for the sole remedy available to the Owner from LP for any Product nonconformance.

a. If any nonconformance of this warranty or any implied warranty is confirmed, LP, at its option, will repair or replace the non-conforming Product together with any affected surface materials, including reasonable cost of labor up to an amount equal to two (2) times the original purchase price of the nonconforming product.

b. Any dispute concerning the meaning or applicability of the warranty shall be submitted to binding arbitration under the Commercial Arbitration Rules of the American Arbitration Association. The arbitration shall take place before a single arbitrator, the jurisdiction of which is governed by the laws of the state where the arbitration is held. The decision of the arbitrator shall be binding on the parties and not subject to appeal and shall be enforceable in any court having competent jurisdiction.

5. Exclusion of Other Remedies

In no event will LP be liable for any incidental, special, indirect, multiple, punitive or consequential damages resulting from any defect in the Product supplied, including, but not limited to property damage or lost profits. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

6. Responsibility of Owner/Purchaser

Compliance with each of the items set out below in Section 6(a) and 6(b) is a condition to LP’s obligations under this warranty and failure to comply with any one or more of the items shall void any rights an Owner may have against LP.

a. Installation/Maintenance

(i) Product installation must be pursuant to installation guidelines and any remedial work promptly completed.

(ii) Full compliance with the installation and maintenance instructions in LP’s applicable published Product installation and maintenance guidelines.

(iii) The structure on which the Product is used must be in compliance with all applicable building codes.

(iv) The Product cannot have been used in an exterior exposure or in an interior space that creates an exterior environment. The Product may not be in direct contact with the ground or used in any application which allows for the accumulation of condensation or other free water or which subjects the Product to repetitive wetting condition at any time during the warranty period other than rain conditions experienced during normal construction delays.

b. Claims

(i) Any Owner seeking remedies under this warranty must notify LP in writing within 30 days after discovering a possible nonconformity of the Product, and before beginning any permanent repair. The owner has a duty to mitigate any damages as quickly as reasonable. This written notice should include the date the Product was installed, if known, and the mill identity number noted on the grade stamp imprinted on the panel.

(ii) It is the Owner’s responsibility to establish the date of installation and all other facts required to establish its right to any relief under this warranty. The Owner shall retain any records which would tend to prove when and how the Product was installed and maintained, including but not limited to: purchase invoices and receipts, contractor’s billings and installation obligations, service contracts, and building permits.

(iii) Upon reasonable notice, the Owner must allow LP’s agents to enter the property and building on which the Product is installed to inspect such Product.

The warranty gives you specific legal rights, and you may also have other rights which vary from state to state.
At LP Building Products, we’re proud to offer integrated building solutions that work together to save you time and money. And proud that our products offer so many benefits.

But something else sets us apart: the way we do business. We believe that “sustainability” means acting in a way that protects the environment, embraces social responsibilities, and builds economic prosperity today and for future generations.

We invite you to discover more about LP’s environmental programs, industry-leading employee safety accomplishments, community involvement and financial results by visiting our website at LP Corp.com.