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TECHNICAL DATA SHEET

PL® Premium® Construction Adhesive

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Item #	Packaging	Size
1390595 1446547	Paper Cartridge	10 fl. oz. (295 mL)
1390594 1447063	Paper Cartridge	28 fl. oz. (828 mL)

DESCRIPTION

Loctite® PL® Premium® Construction Adhesive is a one component, polyurethane based, moisture-curing adhesive. It is VOC compliant and contains no chlorinated solvents or water. Loctite® PL® Premium® provides superior adhesion to most common construction materials. Since the bonding strength of PL® Premium® is so strong, it offers twice the coverage of conventional adhesives therefore much less adhesive is required to complete projects. PL Premium can be used for interior or exterior projects and is 3 times stronger than ordinary solvent based construction adhesives during initial 24 hour cure. It is also waterproof, paintable and cures even in cold temperatures. Ideal for sub floor installations.

RECOMMENDED FOR:

Bonds to most common construction materials such as wood, plywood, OSB, MDF, treated wood, hardwood flooring, concrete, stone, granite, marble, slate, masonry, brick, foam insulation of all sorts including EPS (expanded polystyrene foam), XPS (extruded polystyrene foam), and polysio (urethane) foam, carpets, metal, stainless steel, galvanized metal, lead, cement-based products, fiber cement panels, ceramic, fiberglass, drywall, rigid and cellular vinyl/PVC trim and molding and polyash trim.

NOT RECOMMENDED FOR:

- Tub surrounds and other solid sheet goods made from rigid polystyrene
- Water submersion applications
- Polyethylene, polypropylene, flexible vinyl (FPVC)
- Polyethylene (PE) films that cover certain XPS or EPS foam insulation board
- Bitumen coated surfaces
- Certain materials such as rubbers and plastics may have bonding difficulties. Test before use

FEATURES & BENEFITS:

Feature	Benefits
Low VOC content……	Meets stringent state & federal regulatory requirements
Waterproof……	Great for interior or exterior applications
Meets and exceeds APA AFG-01 specs……	Can be applied directly to dry, wet or frozen lumber
Low odor……	No strong solvent odor; Great for interior use
Strong and versatile……	Permanently bonds together almost any substrate
High strength……	Stronger than many substrates it joins together; Up to 3 times the strength of conventional adhesives
Broad Service Temperature……	Suitable for use in hot and cold environments

COVERAGE

For a 10 fl. oz. cartridge:

A ¼" (6 mm) bead extrudes approximately 30.6 ft (935 m).
A 3/8" (9.5 mm) bead extrudes approximately 13.6 ft. (4.1 m).

For a 28 fl. oz. cartridge:
A ¼" (6 mm) bead extrudes approximately 85.8 ft (26.1 m).
A 3/8" (9.5 mm) bead extrudes approximately 38.1 ft (11.6 m).

DIRECTIONS

Tools Typically Required:
Utility knife, caulking gun, tool to puncture cartridge seal, spray mist water bottle.

Safety Precautions:
Wear gloves. Cured adhesive on bare skin will not come off immediately with washing and will cause skin to darken. Cured adhesive and discolouration will come off in about 3 days.

Preparation:
Use above 40°F (4°C). Surfaces must be clean and free of frost, standing water, grease, dust and other contaminants. Pre-fit all materials and protect finished surfaces. If using cartridge format, cut nozzle at a 45° angle to desired bead size and puncture inner seal. Be very careful not to allow Loctite® PL® Premium to cure on a finished surface.

Application:
Apply adhesive to one surface of the material being bonded. Press the surfaces firmly together. Materials may be repositioned within 45 minutes after applying the adhesive. If bonding two non-porous surfaces (such as foam, metal and fiberglass), add water in the form of a very light or atomized spray from a plant mister bottle to the extruded adhesive. The repositioning time will then be reduced to less than 30 minutes. Use mechanical support for 24 hours while the adhesive cures. When bonding EPS and XPS foam insulation, avoid cure and surface temperatures above 90°F (32°C).

Clean-up:
Clean tools and uncured adhesive residue immediately with mineral spirits in a well-ventilated area to the outdoors. Remove cured adhesive by carefully scraping with a sharp-edged tool.

STORAGE AND DISPOSAL

Not damaged by freezing. After completion of work, seal cartridge nozzle tightly with aluminum foil. Wrap the foil tightly around the nozzle and seal it with tape. Applying petroleum jelly around the opening before sealing with aluminum foil can create a more airtight seal. Product cures with exposure to moisture. Use an approved hazardous waste facility for disposal.

LABEL PRECAUTIONS

WARNING! HARMFUL IF INHALED. EYE, SKIN AND REPIRATORY IRRITANT. MAY CAUSE SKIN AND RESPIRATORY SENSITIZATION.

WARNING: Contains petroleum distillates and methylene diisocyanate (MDI). Individuals with lung or breathing problems or prior sensitization to isocyanates should not use this product. Avoid breathing vapors. Vapors may cause headaches, dizziness and nausea. Open windows and doors to ensure cross ventilation during application and until all odors are gone. Avoid contact with eyes and skin. Prolonged or repeated exposure may cause dermal or respiratory sensitization, effects may be permanent. Gloves recommended. **FIRST AID:** If swallowed, call a physician or Poison Control Center immediately. Do not induce vomiting. For eye contact flush with water for 15 minutes, call a doctor. For skin contact wash thoroughly with soap and water. If inhaled, move to fresh air. If symptoms develop or persist, get immediate medical attention. **INTENTIONAL MISUSE BY DELIBERATELY INHALING CONTENTS MAY BE HARMFUL OR FATAL. DO NOT TAKE INTERNALLY. KEEP OUT OF REACH OF CHILDREN.**

WARNING: This product contains chemicals known to the State of California to cause cancer.

Refer to the Material Safety Data Sheet (MSDS) for further information

DISCLAIMER

The information and recommendations contained herein are based on our research and are believed to be accurate, but no warranty, express or implied, is made or should be inferred. Purchasers should test the products to determine acceptable quality and suitability for their own intended use. Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

TECHNICAL DATA

Typical Uncured Physical Properties:

Color:	Tan
Appearance:	Thick paste
Base:	Polyurethane
Viscosity: 5 rpm @ 75°F (24°C)	550,000 cps
Flash Point:	250°F (121°C)
Specific Gravity:	1.26
Solids Content:	90% by weight
VOC Content:	4% by weight (45 g/L)
Shelf Life:	12 months from date of manufacture (unopened)
Lot Code Explanation:	3L**3028**HP11
(Lot code is stamped on bottom plunger of cartridge)	3 = Last Digit of Year of Manufacture 028 = Day of Manufacture based on 365 days per year For example: 3028 = January 28, 2013

Typical Application Properties

Application Temperature:	The adhesive should be above 41°F (5°C) and below 95°F (35°C) for application
Odor:	Minimal
Open Time:	30 – 45 minutes (see Application above)
Clamping Time:	24 hours
Dry Time:	24 to 48 hours @ 25°C (78°F) and 50% RH Note: Cure time is dependent upon temperature, humidity, porosity of substrate and amount of adhesive used.
Clean Up:	Clean up uncured adhesive residue with mineral spirits. Scrape away cured adhesive using a sharp-edged tool.

Typical Cured Performance Properties

Color:	Tan
Cured form:	Non-flammable, rubbery solid
Service Temperature: Long Term: Short Term:	 0°F (-18°C) to 160°F (71°C) 0°F (-18°C) to 250°F (121°C)
Water Resistance:	Yes
Specifications:	▪ APA AFG-01 ▪ ASTM D 3498 ▪ ASTM C 557 ▪ HUD UM-60 ▪ Green Guard Certified ▪ Green Guard Certified for Children & Schools

Compression Shear Strength, ASTM D3498:
Douglas Fir to Douglas Fir plywood

Dry Lumber Bonding	638 psi (4.4 N/mm^2)
Wet Lumber Bonding	404 psi (2.8 N/mm^2)
Frozen Lumber Bonding	773 psi (5.3 N/mm^2)
Gap Filling	468 psi (3.2 N/mm^2)
Moisture Resistance	585 psi (4.0 N/mm^2) no delamination

Bond Strength Development @ 23°C (73°F):
Douglas Fir to Douglas Fir Plywood

6 hours cure	208 psi (1.4 N/mm^2)
8 hours cure	279psi (1.9 N/mm^2)
16 hours cure	450 psi (3.1 N/mm^2)
24 hours cure	524 psi (3.6 N/mm^2)

Stone Bonding: Compression shear strength

Granite (unpolished) to Douglas fir plywood (7 day cure)	467 psi (3.2 N/mm^2)
Marble (unpolished) to Douglas fir plywood (7 day cure)	542 psi (3.7 N/mm^2)
Granite to Granite (unpolished, 7 day cure followed by 24 hours water immersion)	371 psi (2.6 N/mm^2)
Marble to Marble (unpolished, 7 day cure followed by 24 hours water immersion)	305 psi (2.1 N/mm^2)

Compression Shear Strength to Various Substrates

OSB to expanded cellular PVC (24 hour cure)	263 psi (1.8 N/mm^2)
PVC trim molding to pine (24 hour cure)	305 psi (2.1 N/mm^2)
Fiber cement to Douglas Fir plywood (7 day cure)	305 psi (2.1 N/mm^2) Substrate failure
Fiber cement to Douglas Fir plywood (14 day cure followed by water immersion and drying)	377 psi (2.6 N/mm^2) Substrate failure

Tensile Shear Strength (Lap Shear Strength)

Douglas Fir Plywood to stainless steel	590 psi (4.1 N/mm^2) Substrate failure
Douglas Fir Plywood to hot galvanized steel	512 psi (3.5 N/mm^2) Substrate failure

American Plywood Association AFG-01 Test Results

	Shear Strength		
APA AFG-01	**Average (pounds)***	**Minimum Requirements (pounds)***	**Compliance Status**
Test A (Wet Lumber) On Douglas Fir On Southern Pine	 785 593	 225 225	Passed
Test B (Frozen Lumber) On Douglas Fir On Southern Pine	 837 762	 150 150	Passed
Test C (Dry Lumber) On Douglas Fir	890	225	Passed
Moisture Resistance On Douglas Fir (No delamination)	911	225	Passed
Oxidation Resistance	Pass	100% - No sign of fracture when bent.	Passed

*** Bond area = 1.5 in^2**