



ICC-ES Listing Report ESL-1379

Reissued August 2023

Revised January 2024

This listing is subject to renewal August 2024.

CSI: DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 05 23.10—Adhesives
DIVISION: 09 00 00—FINISHES
Section: 09 29 10—Gypsum Board Accessories

Product Certification System:

The ICC-ES product-certification system includes evaluating reports of tests of standard manufactured product, prepared by accredited testing laboratories and provided by the listee, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the listee's quality system.

Product: MIRACLE® FOAMSEAL® F6400-LVR ONE-PART POLYURETHANE STRUCTURAL ADHESIVE

Listee: HOLCIM SOLUTIONS AND PRODUCTS US, LLC

Evaluation: The Miracle® Foamseal® F6400-LVR One-Part Polyurethane Structural Adhesive is used to bond wood framing, plywood sheathing and gypsum wallboard by applying adhesive beads between these materials and using mechanical fasteners. The Miracle® Foamseal® F6400-LVR One-part Polyurethane Structural Adhesive was evaluated when tested in accordance with the following standards:

- Specification CA 25-4 (1997), Standard for the Evaluation of Adhesives for Structural Use in Multi-unit Manufactured Housing and Commercial Coach Construction, State of California Department of Housing and Community Development.
- ASTM E72 (-15, -14a, -14, -13a, -10, -02, -98 and -80), Standard Test Methods of Conducting Strength Tests of Panels for Building Construction, ASTM International.
- ASTM C557-2003(2017), Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing, ASTM International.
- ASTM D905-08, Standard Test Method for Strength Properties of Adhesive Bonds in Shear by Compression Loading, ASTM International.
- ASTM D3498-03(2011), Standard Specification for Adhesives for Field-Gluing Plywood to Lumber Framing for Floor Systems, ASTM International.
- ASTM D6464-2003A (2017) and ASTM D6464-03a (2009) e1, Standard Specification for Foam Adhesives for Fastening Gypsum Wallboard to Wood Framing, ASTM International.
- AG-01, Standard Specification for Adhesives for Field-Gluing Plywood to Wood Framing, APA-Engineered Wood Association.

Findings: The Miracle® Foamseal® F6400-LVR One-Part Polyurethane Structural Adhesive has met the performance criteria in ASTM C557 and ASTM D6464, as referenced in the applicable section of the following code editions.

- 2021 and 2018 *International Building Code*®
Applicable Section: 2508.4
- 2021 and 2018 *International Residential Code*®
Applicable Section: R702.3.1.1

Wall assemblies constructed with the Miracle® Foamseal® F6400-LVR One-Part Polyurethane Structural Adhesive have average ultimate in-plane shear load as specified in Table 1, based on testing in accordance with ASTM E72.

Identification:

1. The ICC-ES mark of conformity, electronic labeling, or the listing report number (ICC-ES ESL-1379), and when applicable, the ICC-ES listing mark, along with the name, registered trademark, or registered logo of the report holder must be included in the product label.
2. In addition, packaging of the Miracle® Foamseal® F6400-LVR One-Part Polyurethane Structural Adhesive carries a label indicating the manufacturer's name (Holcim Solutions and Products US, LLC) and address, the product name, date of manufacture, and shelf-life information.
3. The report holder's contact information is the following:

HOLCIM SOLUTIONS AND PRODUCTS US, LLC
56 AIR STATION INDUSTRIAL PARK
ROCKLAND, MAINE 02370
(781) 681-0457
<http://Holcim.com>

Installation: The product must be installed in accordance with the Holcim Solutions and Products US, LLC. published installation instructions and applicable codes.

Conditions of listing:

1. The listing report addresses only conformance with the standards and applicable code sections noted above.
2. Approval of the product's use is the sole responsibility of the local code official.
3. The listing report applies only to the materials tested and as submitted for review by ICC-ES.
4. The ultimate loads listed in Table 1 are not intended to be used as design values. Design values based on a safety factor may be established by the registered design professional and approved by the authority having jurisdiction.
5. The Miracle® Foamseal® F6400-LVR One-Part Polyurethane Structural Adhesive is manufactured under a quality control program with inspections by ICC-ES.

TABLE 1: IN-PLANE SHEAR LOADING ON WOOD FRAME (SECTION 14 OF ASTM E72)¹

ASSEMBLY NUMBER	TOP PLATE / BOTTOM PLATE	STUDS / STUD SPACING ³	SINGLE / DOUBLE SIDED	SIDE A	SIDE B	ADHESIVE	ULTIMATE LOAD (PLF) ²
1	2x4 SPF ungraded	P/C: 2x4 stud grade SPF, Field: 1x4 SPF ungraded, 24" on center	Single	⁵ / ₁₆ " Vertical, USG Sheetrock MH	NA	Side A: F6400-LVR	407.1
2				⁵ / ₁₆ " Vertical, Georgia-Pacific		Side A: F6400-LVR	386
3				⁵ / ₁₆ " Vertical, National Gypsum Gold Bond		Side A: F6400-LVR	388.5
4	2x4 SPF ungraded	P/C: 2x4 stud grade SPF, Filed: 1x4 SPF ungraded, 24" on center	Double	⁵ / ₁₆ " Vertical, USG Sheetrock MH	⁵ / ₁₆ " Vertical, USG Sheetrock MH	Sides A & B: F6400-LVR	697.3
5				⁵ / ₁₆ " Vertical, National Gypsum Gold Bond	⁵ / ₁₆ " Vertical, National Gypsum Gold Bond	Sides A & B: F6400-LVR	677.4
6				⁵ / ₁₆ " Vertical, Georgia-Pacific	⁵ / ₁₆ " Vertical, Georgia-Pacific	Sides A & B: F6400-LVR	704
7	2x4 SPF ungraded	2x4 stud grade SPF, 16" on center	Double	⁵ / ₁₆ " Vertical, National Gypsum Gold Bond	⁵ / ₁₆ " Vertical, National Gypsum Gold Bond	Sides A & B: F6400-LVR	887.1
8				⁵ / ₁₆ " Vertical, USG Sheetrock MH	⁵ / ₁₆ " Vertical, USG Sheetrock MH	Sides A & B: F6400-LVR	925
9				⁵ / ₁₆ " Vertical, Georgia-Pacific	⁵ / ₁₆ " Vertical, Georgia-Pacific	Sides A & B: F6400-LVR	965.3
10	2x4 SPF ungraded	2x4 stud grade SPF, 16" on center	Single	⁵ / ₁₆ " Vertical, National Gypsum Gold Bond	NA	Side A: F6400-LVR	567.6
11				⁵ / ₁₆ " Vertical, USG Sheetrock MH		Side A: F6400-LVR	556.2
12				⁵ / ₁₆ " Vertical, Georgia-Pacific		Side A: F6400-LVR	615.1
13				0.2" Vertical, Three-ply Lauan		Side A: F6400-LVR	1042.7
14	2x4 SPF ungraded	2x4 stud grade SPF, 16" on center	Double	⁵ / ₁₆ " Vertical, National Gypsum Gold Bond	⁵ / ₁₆ " Vertical, National Gypsum Gold Bond	Sides A & B: F6400-LVR	1021.6
15				⁵ / ₁₆ " Vertical, USG Sheetrock MH	⁵ / ₁₆ " Vertical, USG Sheetrock MH	Sides A & B: F6400-LVR	1027.8
16				⁵ / ₁₆ " Vertical, Georgia-Pacific	⁵ / ₁₆ " Vertical, Georgia-Pacific	Sides A & B: F6400-LVR	1064.8
17	2x4 SPF ungraded	2x4 stud grade SPF, 16" on center	Single	⁵ / ₁₆ " Vertical, National Gypsum Gold Bond	NA	Side A: F6400-LVR	581.9
18				⁵ / ₁₆ " Vertical, USG Sheetrock MH		Side A: F6400-LVR	567.1
19				⁵ / ₁₆ " Vertical, Georgia-Pacific		Side A: F6400-LVR	630.3
20	2x4 SPF ungraded	2x4 stud grade SPF, 16" on center	Double	⁵ / ₁₆ " Vertical, National Gypsum Gold Bond	³ / ₈ " Vertical, OSB	Side A: F6400-LVR Side B: Gun-N-Go	1164.7
21				¹ / ₂ " Horizontal, National Gypsum Gold Bond	³ / ₈ " Vertical, OSB	Side A: F6400-LVR Side B: Gun-N-Go	1214.4
22	2x4 SPF ungraded	2x4 stud grade SPF, 16" on center	Single	¹ / ₂ " Horizontal, National Gypsum Gold Bond	NA	Side A: F6400-LVR	637.7
23	2x4 SPF ungraded	2x4 stud grade SPF, 16" on center	Double	¹ / ₂ " Horizontal, National Gypsum Gold Bond	³ / ₈ " Horizontal, OSB	Side A: F6400-LVR Side B: Gun-N-Go	1231.6
24				¹ / ₂ " Horizontal, National Gypsum Gold Bond	¹ / ₂ " Horizontal, National Gypsum Gold Bond	Side A: F6400-LVR Side B: Gun-N-Go	974.8

TABLE 1: IN-PLANE SHEAR LOADING ON WOOD FRAME (SECTION 14 OF ASTM E72)¹ (Continued)

ASSEMBLY NUMBER	TOP PLATE / BOTTOM PLATE	STUDS / STUD SPACING ³	SINGLE / DOUBLE SIDED	SIDE A	SIDE B	ADHESIVE	ULTIMATE LOAD (PLF) ²
25	2x4 SPF ungraded	2x4 stud grade SPF, 16" on center	Single	3.6 mm Vertical, Three-ply Lauan	NA	Side A: F6400-LVR	1067.1
26	2x4 stud grade SPF	2x4 stud grade SPF, 16" on center	Double	¹ / ₂ " Horizontal, USG Sheetrock MH UltraLight Panels Tuf-Base	¹ / ₂ " Horizontal, USG Sheetrock MH UltraLight Panels Tuf-Base	Sides A & B: F6400-LVR	823.1
27	2x4 stud grade SPF	2x4 stud grade SPF, 16" on center	Single	¹ / ₂ " Horizontal, USG Sheetrock MH UltraLight Panels Tuf-Base	NA	Side A: F6400-LVR	621.1
28	2x4 stud grade SPF	2x4 stud grade SPF, 16" on center	Double	¹ / ₂ " Horizontal, USG Sheetrock MH UltraLight Panels Tuf-Base	¹ / ₂ " Horizontal, USG Sheetrock MH UltraLight Panels Tuf-Base	Sides A & B: F6400-LVR	881.3

For **SI**: 1 inch = 25.4 mm; 1 plf = 14.6 N/m

¹Bead sizes: a) One 3/8" bead of Gun-N-Go adhesive is applied on all framing members except for a double bead along the OSB seam. b) Two 1/16" – 1/8" beads of Miracle® Foamseal® F6400-LVR One-Part Polyurethane Structural Adhesive is applied on all 2x framing members

²Ultimate load values does not include any safety factors.

³Stud P/C: perimeter and center of tested specimen.



FIGURE 1 – SINGLE BEAD APPLICATION HEAD

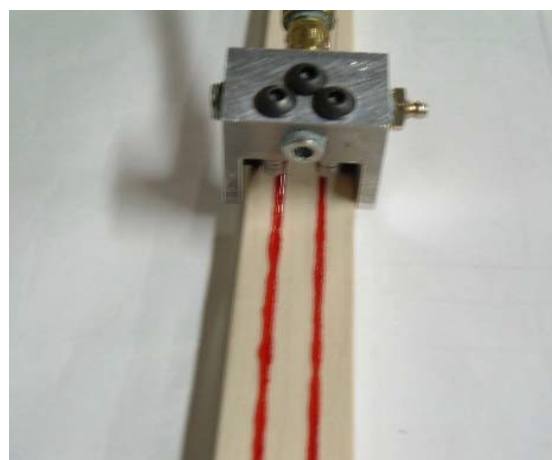


FIGURE 2 – DUAL BEAD APPLICATION HEAD



FIGURE 3 – MIRACLE® FOAMSEAL® F6400-LVR 55 GALLON DRUM



FIGURE 4 – MIRACLE® FOAMSEAL® F6400-LVR 275 GALLON TOTE