



153 BOWLES ROAD  
AGAWAM, MA 01001-3824  
800-518-3569  
FAX: 413-786-1760  
[www.fastenmaster.com](http://www.fastenmaster.com)

### **Technical Note: Deck2wall Spacers with LedgerLOK Fasteners**

One of the primary causes for deck failures is the poor construction techniques connecting the deck ledger to rim joist of the house. This includes poor fastener selection (nails), improper spacing between fasteners (too wide) and lack of embedment into the primary structure (fastened into sheathing only). Wood decay of the ledger and rim boards due to moisture collection at this intersection is also a strong contributor to these failures.

Methods for minimizing moisture, including the use of stacked washers, blocking or specially manufactured deck spacers that allow water and organics to pass between the deck ledger and rim are becoming more widely used. These techniques, however, have the potential to change the allowable strength given the fastener being used. FastenMaster has evaluated all three of these spacing methods and approved their use.

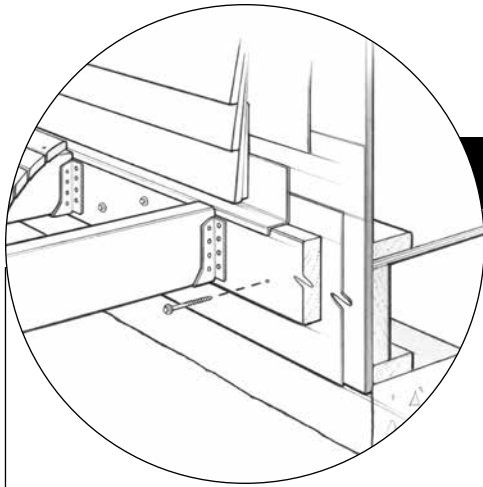
This Technical Note addresses the use of one of the manufactured systems, the Deck2wall Spacer for Structural Wood Screws (Model # D2W38-SWS). FastenMaster has evaluated this product based on third party reports from Washington State University as well as internal ledger testing to ASTM standards and found that there is no negative impact on the strength of these connections.

When using LedgerLOK fasteners to make this connection, follow the instructions and IRC code-compliant fastening schedule found on the technical bulletin inside each package. No adjustments need to be made to the fastening patterns. Installation of the Deck2wall Spacer must also comply with the spacer instructions which can be found at [www.deck2wallspacer.com](http://www.deck2wallspacer.com)

For additional questions or connection details not covered by this Technical Note, please contact FastenMaster Technical Services at 800-518-3569 or [info@fastenmaster.com](mailto:info@fastenmaster.com).

This dated guarantee supersedes all written statements prior to April 15, 2018.

**FMLLD2W0418**



## DECK LEDGER TO RIM JOIST

### CONNECTION DETAILS

The LedgerLOK Ledger Board Fastener has been designed specifically for attaching the deck ledger to a rim joist or band board of the house in a code compliant manner. When installed as instructed in this bulletin, the LedgerLOK can be used to replace the 1/2" Lag Screws called for in Chapter 5 of the International Residential Code (IRC).

In addition, the proprietary coating on this fastener exceeds the corrosion protection provided by code approved hot-dipped galvanized coatings.

### INSTALLATION PROCEDURES

- Choose 3-5/8" or 5" LedgerLOK so that threads fully engage the rim material and fastener tip extends beyond the inside face of the rim joist.
- Use a high torque, 1/2" variable speed drill (18V if cordless).
- Follow the minimum spacing and fastening patterns from Figure 1 and Table 1.
- Install fasteners through the ledger and sheathing. Continue into the rim joist until the washer head is drawn firm and flush to the ledger board. Do not overdrive.

### CORROSION STATEMENT

The proprietary galvanized and polymer coating applied to the LedgerLOK has been tested under the current ICC standard for evaluating corrosion resistance in treated lumber (AC257) and deemed suitable alternative to code-approved hot-dipped galvanized coatings when exposed to ground contact ACQ preservative treatment in wet-use conditions. A statement of this compliance can be found in the ICC Evaluation Report for LedgerLOK (ESR #1078), available online at [icc-es.org](http://icc-es.org) or the FastenMaster website. For applications within 1,000 feet of saltwater, we recommend the use of a stainless steel fastener.

### SPACING REQUIREMENTS

Fasteners should be staggered in a "V" pattern and spaced as follows:

- A. Minimum end distance = 3-3/4"
- B. Minimum edge distance = 2"
- C. On-center spacing = Per Table 1

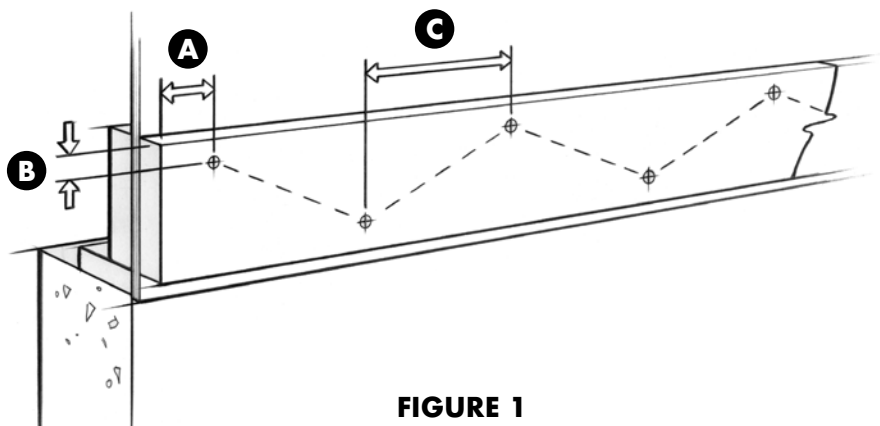


FIGURE 1



Effective December 1, 2017. Please reference our website to ensure that you are using the most up to date version.

153 BOWLES ROAD, AGAWAM, MA 01001

413-789-0252

800-518-3569

WWW.FASTENMASTER.COM

**FASTENING PATTERN**

Determine the proper spacing of LedgerLOK fasteners from Table 1 below based on:

- Live load requirement for your local code
- Ledger material being attached to the house
- Rim material that you are attaching to
- Joist span as measured from the ledger to the first supporting beam

**TABLE 1: Fastening pattern for attachment of ledger to rim board using LedgerLOK**

Live Load	Ledger Material	Rim Material	Spacing between fasteners (in inches) based on Joist Spans of:						
			6' or Less	Up to 8'	Up to 10'	Up to 12'	Up to 14'	Up to 16'	Up to 18'
40 psf	Doug. Fir or S. Pine	2x Lumber	24	18	14	12	10	9	8
		EW Rim	25	19	15	12	10	9	8
	Hem Fir	2x Lumber	20	15	12	10	8	7	6
		EW Rim	25	19	15	12	10	9	8
60 psf	Doug. Fir or S. Pine	2x Lumber	17	13	10	8	7	6	5
		EW Rim	18	13	10	9	7	6	6
	Hem Fir	2x Lumber	14	11	8	7	6	5	4
		EW Rim	18	13	10	9	7	6	6

LedgerLOK fastening patterns outlined in this table provide equal or better performance to lag screw patterns in the 2009, 2012 and 2015 IRC in accordance with IRC sections R104.11 and in accordance with generally accepted engineering practice. Design values used to create these patterns were derived from individual fastener testing under ICC Acceptance Criteria AC233 (ESR #1078) as well as full system testing directly comparing lag screw and LedgerLOK performance in ledger to rim connections using generally accepted industry standards used to generate the IRC fastener spacing tables for lag screws.

- **Ledger materials** must be a minimum of 2 x 8 nominal dimensional pressure-preservative-treated No. 2 lumber from any of the following species: Hem-Fir, SPF, Douglas Fir or Southern Pine.
- **Rim joist materials** must be either solid sawn 2x lumber or engineered wood specifically designated by the manufacturer as rim material. 2x lumber may be of any species greater than 0.42 specific gravity, including SPF, HF or DF. Engineered Wood (EW) Rim may be OSB, LSL or LVL material measuring 1" or greater in thickness.
- **Sheathing** of 15/32" or 7/16" OSB may separate the ledger and rim but must be attached per code. For additional materials between ledger and rim, please refer to the guidelines below.

Wet service conditions have been tested for and applied to the patterns above. **No further reductions for wet service need to be applied.**

The code-standard dead load for building materials of 10 pounds per square foot is assumed in all calculations above.

As required by IRC Section 507.2.1, the calculations and installation instructions found in this bulletin have been reviewed and found to be in accordance with accepted engineering practices. For a copy of the engineer stamped/sealed letter or further technical information to support this bulletin, please contact FastenMaster at 800-518-3569.

**GENERAL FASTENING GUIDELINES**

- The LedgerLOK is not designed for attachment to masonry/concrete or over stucco, siding, rigid foam insulation or brick veneer.
- Connections and joints shall be properly flashed to prevent water from contacting the rim joist.
- Where a positive connection to the rim joist cannot be verified through inspection, decks shall be self supporting.
- Ledgers should not be attached over cantilevered portions of the house where the rim is unsupported by a foundation.
- For ledgers being attached to open web floor trusses, consult "Attachment of Residential Deck Ledger to Metal Plate Connected Wood Truss Floor System" published by the Structural Building Component Association for proper design methods. This Technical Note can be found at [www.sbcindustry.com](http://www.sbcindustry.com).
- Wood structural panel sheathing or gypsum board sheathing not exceeding 1" in thickness shall be permitted provided that the maximum distance between the inner face of the ledger board and the outer face of the rim joist is no greater than 1" and is properly fastened to the rim.
- Under the following conditions, the LedgerLOK may still be approved but a design professional should be consulted for proper spacing requirements:
  1. In areas where live load requirements exceed 60 psf or snow load requirements exceed 70 psf.
  2. For decks designed to carry increased dead loads (ex: hot tubs, stationary planters).
  3. Three-season or fully enclosed decks supporting an overhead roof.
- All local code requirements as well as guidelines set forth in this technical bulletin must be followed for patterns outlined above to be applicable.