

## ICFVL™

## Ledger Connector System

The ICFVL ledger connector system is engineered to solve the challenges of mounting wood or steel ledgers to insulated concrete form (ICF) walls up to 4½" in thickness as specified by the designer. The ICFVL6 maximum ICF foam wall thickness is 3¼", the ICFVL8 maximum ICF foam wall thickness is 4½". The ICFVL is designed to provide both vertical and lateral in-plane performance. The system offers many benefits over traditional anchor bolting, including better on-center spacing in most cases, faster installation and no protrusions.

The embedded legs of the ICFVL (ICFVL6 = 6", ICFVL8 = 8") are embossed for additional stiffness and the hole enables concrete to flow through and around the connector. The exposed flange on the face of the ICF provides a structural surface for mounting wood ledger. **Note:** For wood ledger applications, the ICFVL-W or ICFVL-CW is required (sold separately).

**Features:**

- Two size options to accommodate up to 4½" thick ICF foam walls.
- Embossments on the embedded legs for additional stiffness.
- Two diamond-shaped holes in the center of the connector allow screw installation to hold it in place during concrete pour and to aid in proper alignment during installation. (Remove center screws prior to ledger installation.)

**Material:** ICFVL — 14 gauge; ICFVL-CW and ICFVL-W — 16 gauge

**Finish:** Galvanized

**Installation:****ICFVL in ICF**

- For use with a minimum 4" thick core
- Snap a chalk line for the bottom of the ledger
- Mark required on-center spacing
- Use ICFVL to mark kerfs locations
- Cut kerfs as marked
- Insert ICFVL flush to the face of the ICF
- Pour concrete

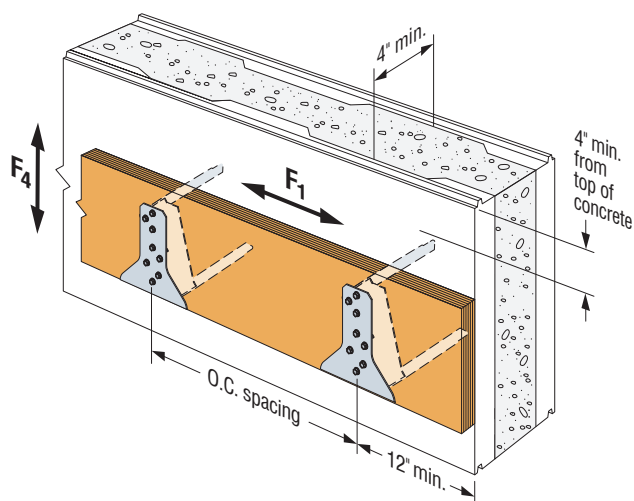
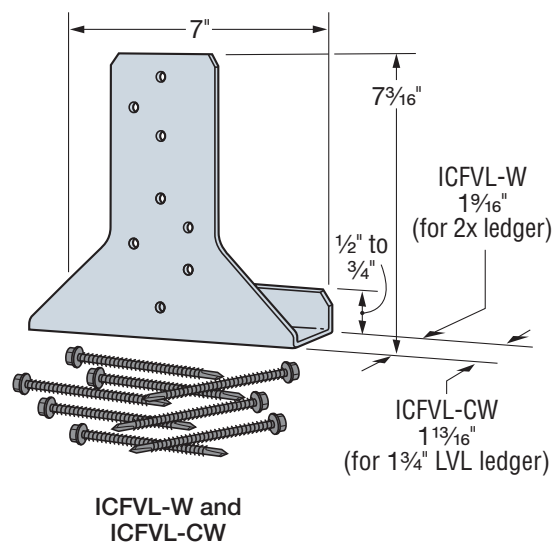
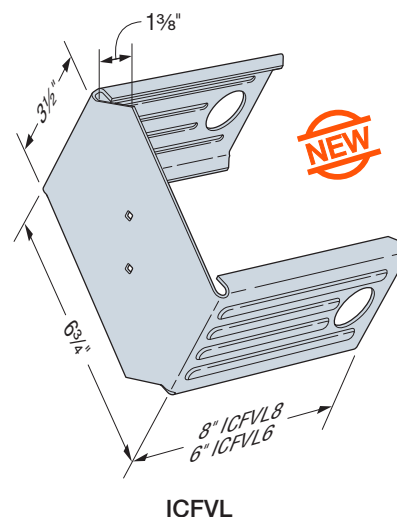
**Wood Ledger Attachment — ICFVL-W or ICFVL-CW**

- Slip appropriate ledger connector underneath the ledger.
- Install the eight ICF-D3.25 screws partially into the ledger. ICF-D3.25 installs best using a low-speed drill with ⅜" hex-head driver.
- For denser wood species (specific gravity ≥ 0.50), predrilling may be necessary. Predrill ledger only with ⅜" drill bit.
- Position bottom of the ledger level to the chalk line and drive the screws through the wood and into the ICFVL.

**Steel Ledger Attachment**

- Position bottom of the ledger level to the chalk line and against the ICFVL
- Attach with four #14 x ¾", #3 drill point screws (not provided)
- All screws should be located at least ½" from the edge of the ICFVL
- Space screws evenly

**Codes:** See p. 13 for Code Reference Key Chart



Typical Wood Ledger Installation with ICFVL8

**Warning:**  
Industry studies show that hardened fasteners can experience performance problems in wet environments. Accordingly, use this product in dry environments only.

## ICFVL™

## Ledger Connector System (cont.)

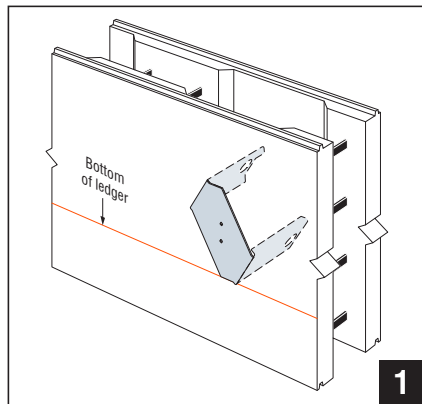
| Ledger Type | Fasteners     | Allowable Loads (lb.)      |                           |
|-------------|---------------|----------------------------|---------------------------|
|             |               | Vertical (F <sub>4</sub> ) | Lateral (F <sub>1</sub> ) |
| Wood        | (8) ICF-D3.25 | 2,280                      | 1,265                     |

1. Use (8) ICF-D3.25 screws (provided).
2. Loads apply to ICF with 4½" maximum foam thickness with the ICFVL8 and 3¼" maximum foam thickness with the ICFVL6.
3. Loads assume a minimum spruce-pine-fir ledger.
4. Loads may not be increased for short-term loading.
5. The top of the ICFVL must be installed 4" minimum below the top of the wall.  
For installations where the ICFVL is installed less than 4" from the top of the wall (including flush), multiply the allowable loads by 0.94.

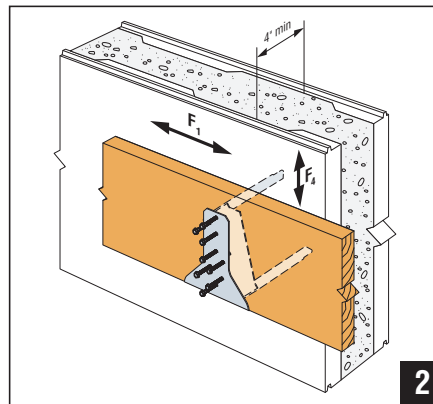
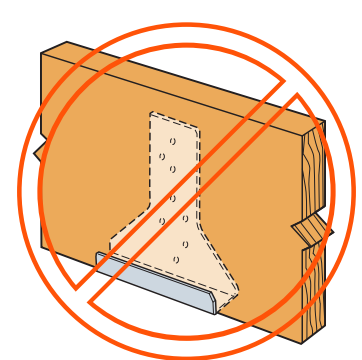
This table address vertical load applications only.

| Ledger Type     | Connector Type    | ICFVL Spacing To Replace Anchor Bolts (in.) <sup>1,2,3</sup> |          |          |          |                        |          |          |          |                            |          |          |          |                        |          |          |          | Code Ref. |
|-----------------|-------------------|--|----------|----------|----------|------------------------|----------|----------|----------|----------------------------|----------|----------|----------|------------------------|----------|----------|----------|-----------|
|                 |                   | ½"-Diameter Anchors at                                       |          |          |          | ¾"-Diameter Anchors at |          |          |          | (2) ¾"-Diameter Anchors at |          |          |          | ¾"-Diameter Anchors at |          |          |          |           |
|                 |                   | 12" o.c.   | 24" o.c. | 36" o.c. | 48" o.c. | 12" o.c.               | 24" o.c. | 36" o.c. | 48" o.c. | 12" o.c.                   | 24" o.c. | 36" o.c. | 48" o.c. | 12" o.c.               | 24" o.c. | 36" o.c. | 48" o.c. |           |
| Wood Ledgers    |                   |  |          |          |          |                        |          |          |          |                            |          |          |          |                        |          |          |          |           |
| DF/SP/SPF       | ICFVL w/ ICFVL-W  | 48   | 48       | 48       | 48       | 48                     | 48       | 48       | 48       | 24                         | 48       | 48       | 48       | 42                     | 48       | 48       | 48       | —         |
| LVL             | ICFVL w/ ICFVL-CW | 48   | 48       | 48       | 48       | 48                     | 48       | 48       | 48       | 24                         | 48       | 48       | 48       | 42                     | 48       | 48       | 48       |           |
| Steel Ledgers   |                   |  |          |          |          |                        |          |          |          |                            |          |          |          |                        |          |          |          |           |
| 68 mil (0.068") | ICFVL             | 11   | 22       | 33       | 44       | 9                      | 18       | 27       | 36       | —                          | —        | —        | —        | —                      | —        | —        | —        | —         |
| 54 mil (0.054") | ICFVL             | 15   | 30       | 45       | 48       | 12                     | 24       | 36       | 48       | —                          | —        | —        | —        | —                      | —        | —        | —        |           |

1. The designer may specify different spacing based on the load requirements.
2. Spacings are based on the perpendicular-to-grain capacity of the bolt in the wood ledger compared to the tested value of the ICFVL.  
Additional connectors are required for out-of-plane loads.
3. See flier F-C-ICFVL at [strongtie.com](http://strongtie.com) for additional connection details.
4. For steel ledgers, the 68 mil ledger spacing is closer than the 54 mil ledger because the calculated load of a bolt is higher in a thicker piece of steel.
5. Steel ledger values are based on steel. F<sub>u</sub> = 60 ksi.
6. Values shown apply to ICF foam thicknesses up to 3¼" for ICFVL6 and 4½" for ICFVL8.



ICFVL

Typical Wood Ledger Installation  
with ICFVL and ICFVL-W

Misinstallation