

# 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. 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 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.

**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

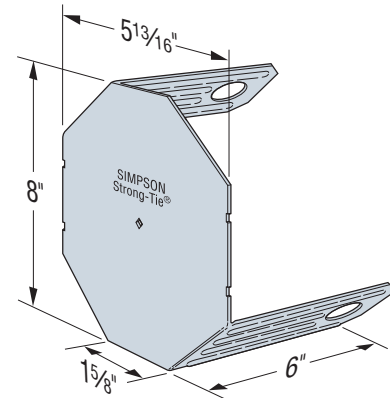
- Slip appropriate ledger connector underneath the ledger.
- Install the eight ICF-D3.25 screws partially into the ledger. **ICF-D3.25 installs best using a low-speed drill with 3/8" hex-head driver.**
- **For denser wood species (specific gravity  $\geq 0.50$ ), predrilling may be necessary. Predrill ledger only with 5/32" 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

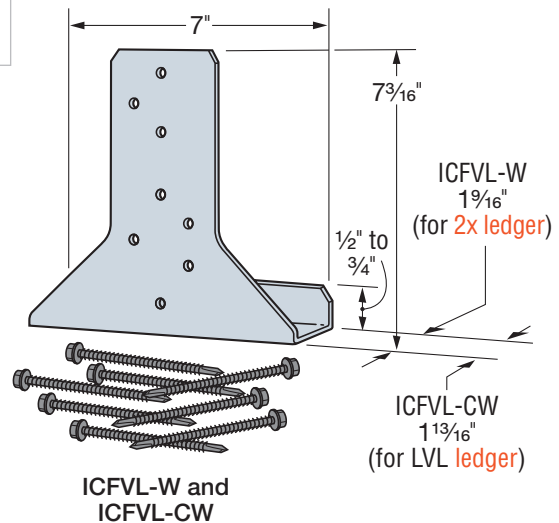
- Position bottom of the ledger level to the chalk line and against the ICFVL.
- Attach with four #14 x 3/4", #3 drill point screws (not provided)
- All screws should be located at least 1/2" from the edge of the ICFVL.
- Space screws evenly

**Codes:** See p. 11 for Code Reference Key Chart

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



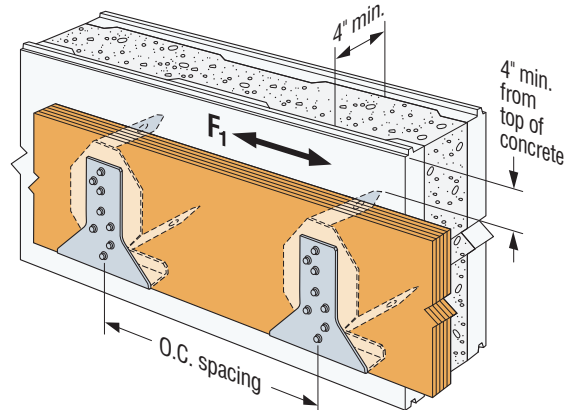
ICFVL



ICFVL-W and ICFVL-CW

Ledger Type	Fasteners	Allowable Loads (lb.)	
		Download (100/115/125)	Lateral F <sub>1</sub> (160)
Wood	(8) ICF-D3.25	1,940	1,905

1. Fasteners for wood ledger (ICF-D3.25) are provided with the part, and fasteners for steel ledger are not provided.
2. Loads apply to ICF foam thicknesses of 3 1/4" or less.
3. Alternatively, 1/4" x 3/4" fastener may be used.
4. Tabulated loads may not be increased.
5. Concrete shall have a minimum compressive strength of  $f'_c = 2,500$  psi.
6. When combining downloads and lateral loads, designer shall evaluate as follows:  $(\text{Design Download} / \text{Allowable Download}) + (\text{Design Lateral Load} / \text{Allowable Lateral Load}) \leq 1$ .
7. The ICFVL must be installed no closer than 4" to the top of the wall to achieve the allowable loads shown. For installations where the ICFVL is installed less than 4" from the top of the wall (including flush applications), multiply the allowable loads by 0.94.



Typical Wood Ledger Installation with ICFVL

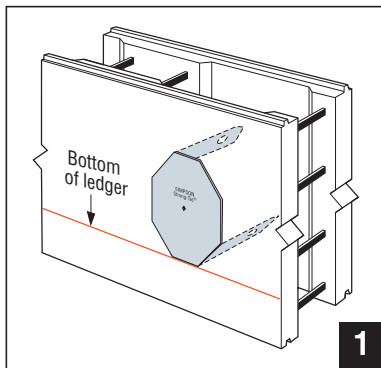
# ICFVL

## Ledger Connector System (cont.)

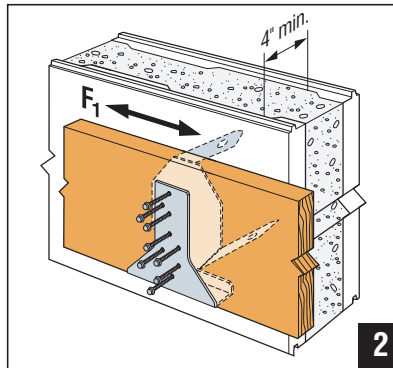
These tables address vertical load applications only.

Ledger Type	Connector Type	ICFVL Spacing To Replace Anchor Bolts (in.) <sup>1,2,3</sup>																Code Ref.
		½"-Diameter Anchors at				⅝"-Diameter Anchors at				(2) ⅝"-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.	
<b>Wood Ledgers</b>																		
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	—
<b>Steel Ledgers</b>																		
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	—	—	—	—	—	—	—	—	—

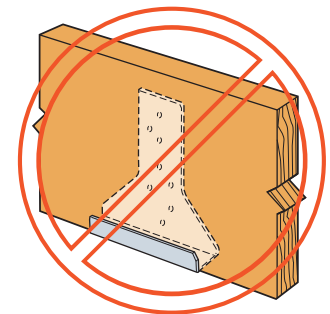
1. The designer may specify different spacing based on the load requirements.
2. Spacings are based on the perpendicular-to-grain capacity of the bolt in the wood ledger compared to the tested value of the ICFVL. Additional connectors are required for out-of-plane loads.
3. See flier F-C-ICFVL at [strongtie.com](http://strongtie.com) 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.  $F_u = 60$  ksi.
6. Maximum ICF foam thickness is 3¼".



ICFVL



Typical Wood Ledger Installation with ICFVL and ICFVL-W



Misinstallation

# ICFVL Ledger Connector System

The ICFVL ledger connector system is engineered to solve the challenges of mounting CFS ledgers to insulated concrete form (ICF) walls. The ICFVL is designed to provide both vertical and lateral, in-plane performance. There are 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 are embossed for additional stiffness and the hole allows for concrete to flow through and around the connector. The exposed flange on the face of the ICF provides a structural surface for mounting a CFS ledger.

**Material:** ICFVL — 68 mil (14 ga.)

**Finish:** Galvanized (G90)

**Installation:**

**ICFVL in ICF**

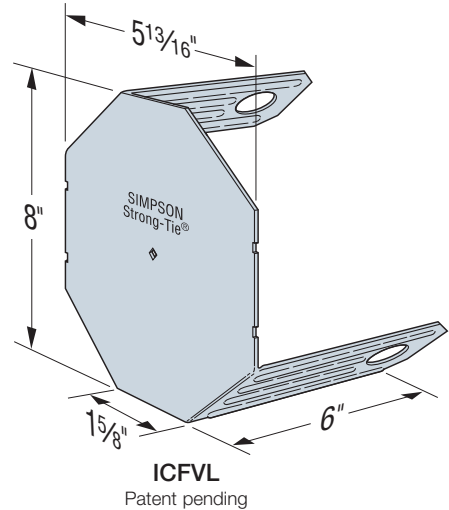
- Snap a chalk line for the bottom of the ledger
- Mark required on-center spacing
- Use ICFVL to mark kerf locations
- Cut kerfs as marked
- Insert ICFVL flush to the face of the ICF
- Pour concrete

**CFS Ledger Attachment**

- Position the ledger level to the chalk line and against the ICFVL
- Attach with four #14 x 3/4", #3 drill point screws (not provided)
- All screws should be located at least 1/2" from the edge of the ICFVL
- Space screws evenly

**Codes:** See p. 11 for Code Reference Key Chart

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



Reduce the chance of misinstallations using the wrong size screws; specify Simpson Strong-Tie® #14 Self-Drilling E Metal screw (Model No. E1B1414) with the ICFVL Ledger Connector System. Visit [strongtie.com](http://strongtie.com) for details.



Available in 100 ct. and 2,500 ct. cartons.

Model No.	Fasteners	Allowable ASD Load (lb.)		Code Ref.
		Download	Lateral F <sub>1</sub>	
ICFVL	(4) #14 x 3/4" <sup>3</sup>	1,660	1,525	—

1. Fasteners for CFS ledger are not provided.
2. Loads apply to ICF foam thicknesses of 2 3/4" or less. Contact Simpson Strong-Tie for allowable loads on thicker walls.
3. Alternately, 1/4" x 3/4" fasteners may be used.
4. Concrete f<sub>c</sub> = 2,500 psi minimum.
5. When combining download and lateral loads, the designer shall use the following interaction equation: Design Download/Allowable Download + Design Lateral Load/Allowable Lateral Load ≤ 1.

These tables address vertical load applications only

Ledger Material Thickness mil (ga.)	Connector Type	ICFVL Spacing to Replace Anchor Bolts on a CFS Ledger (in.) <sup>1,2</sup>							
		1/2"-Diameter Anchors at				5/8"-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.
68 (14)	ICFVL	11	22	33	44	9	18	27	36
54 (16)	ICFVL	15	30	45	48	12	24	36	48

1. The designer may specify different spacing based on the load requirements.
2. See filer F-ICFVL on [strongtie.com](http://strongtie.com) for additional connection details.

