

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 either a wood or steel 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

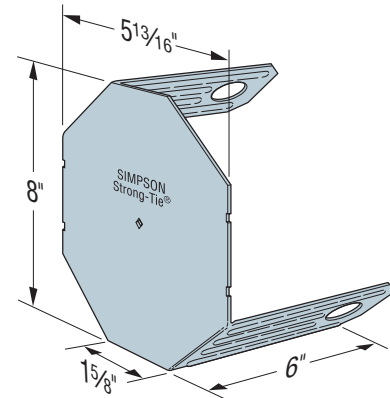
- Slip appropriate ledger connector underneath the ledger
- Install the eight ICF-D3.62 screws partially into the ledger
- Position bottom of the ledger level to the chalk line and drive the screws through the wood and into the ICFVL

Steel Ledger Attachment

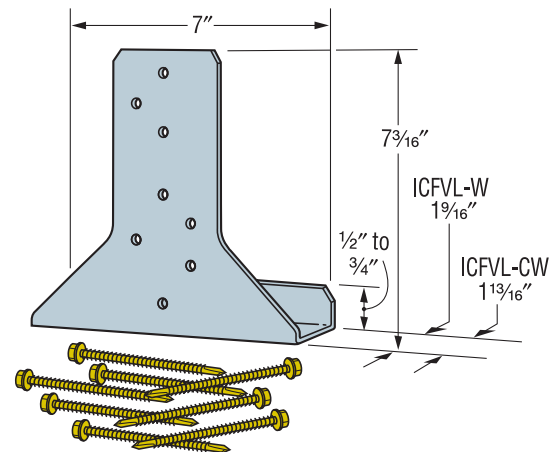
- Position bottom of the ledger level to the chalk line and against the ICFVL
- Attach with four #14 x ¾", #3 drill point screws (not provided)
- All screws should be located at least ½" from the edge of the ICFVL
- Space screws evenly

Codes: See p. 14 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.



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Patent pending



ICFVL-W and ICFVL-CW

| Ledger Type | Fasteners | Allowable Loads (lb.) | |
|-------------|---------------------------|------------------------|------------------------------|
| | | Download (100/115/125) | Lateral F ₁ (160) |
| Wood | (8) ICF-D3.62 | 1,940 | 1,905 |
| Steel | (4) #14 x ¾" ³ | 1,660 | 1,525 |

1. Fasteners for wood ledger (ICF-D3.62) are provided with the part and fasteners for steel ledger are not provided.
2. Loads apply to ICF foam thicknesses of 3¼" or less.
3. Alternately, ¼" x ¾" fastener may be used.
4. Tabulated loads may not be increased.
5. Concrete f_c = 2,500 psi minimum.
6. When combining download and lateral loads, Designer shall evaluate as follows:
Design Download/Allowable Download + Design Lateral Load/Allowable Lateral Load ≤ 1.
7. The ICFVL must be installed no closer than 4" below 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.

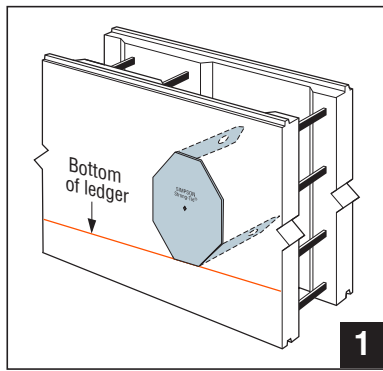
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Ledger Connector System (cont.)

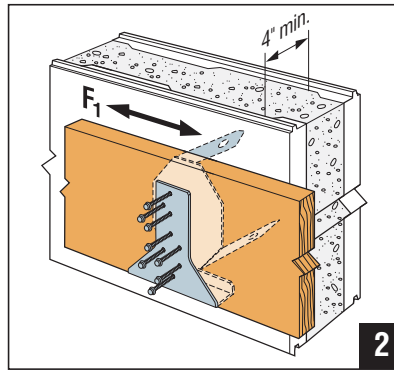
These tables address vertical load applications only.

| Ledger Type | Connector Type | ICFVL Spacing To Replace Anchor Bolts (in.) ^{1,2,3} | | | | | | | | | | | | | | | | Code Ref. |
|----------------------|-------------------|--|----------|----------|----------|--------------------------|----------|----------|----------|------------------------------|----------|----------|----------|--------------------------|----------|----------|----------|-----------|
| | | 1/2"-Diameter Anchors at | | | | 5/8"-Diameter Anchors at | | | | (2) 5/8"-Diameter Anchors at | | | | 3/4"-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 | 170 |
| 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 | — | — | — | — | — | — | — | — | 170 |
| 54 mil (0.054") | ICFVL | 15 | 30 | 45 | 48 | 12 | 24 | 36 | 48 | — | — | — | — | — | — | — | — | |

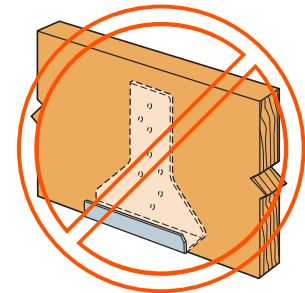
- The Designer may specify different spacing based on the load requirements.
- Spacings are based on perpendicular-to-grain capacity of bolt in wood ledger compared to tested value of ICFVL. Additional connectors required for out-of-plane loads.
- See flier F-C-ICFVL at strongtie.com for additional connection details.
- 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.
- Steel ledger values are based on steel. $F_u = 60$ ksi.
- Maximum ICF foam thickness is 2 3/4".



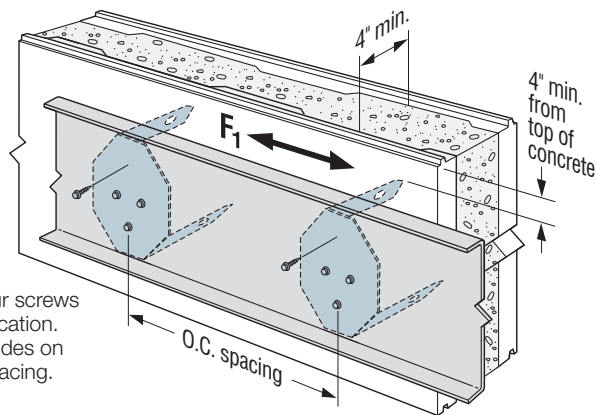
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Typical Wood Ledger Installation with ICFVL and ICFVL-W



Misinstallation



Requires four screws at each location. Table provides on center spacing.

Typical Steel Ledger Installation with ICFVL
(Minimum 16 ga. steel ledger)