



# Deck Connection Safety

## SAFETY BULLETIN

Data has shown that the primary reason for deck collapses is the failure of connections between the deck and the primary structure. These failures are most common at the ledger connection to the structure where there is a poor connection such as nails only. The connection should be positively connected to the structure in order to provide a safe condition for those using the deck. If you have a nail only connection on your deck to structure connection, it is likely you have an older home or a condition where the deck requires additional support. Today's codes require a much stronger connection at the structure due to what we have learned about ledger failures and deck collapses. Cleaning and maintenance is also a must.

A professional contractor, engineer, certified inspector or other professional can quickly inspect and determine if an elevated deck is supported by a deck ledger that is attached to the structure solely by nails. This type of connection can constitute a "dangerous condition".

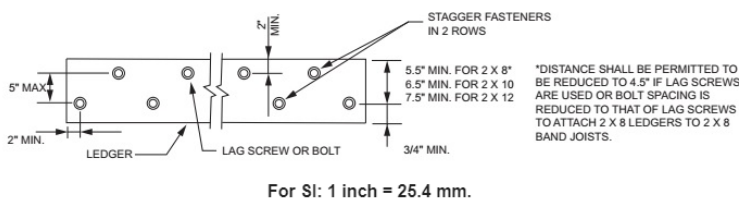
Since early 2000 the International Residential Code (IRC), has required that decks be anchored to the structure to resist both vertical and lateral loads. Nails as the sole means of connection are no longer allowed. Codes require the ledger to be connected as shown below. Although there are a number of variations that can take place for this connection, this is the code requirement currently in place. Ref IRC:

**TABLE R507.9.1.3(2) PLACEMENT OF LAG SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS**

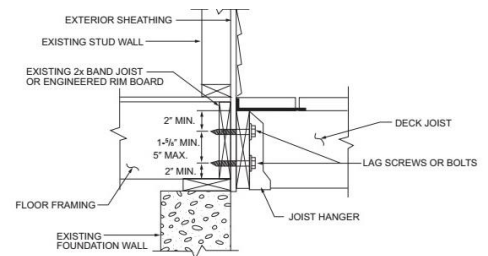
MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS				
	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING
Ledger <sup>a</sup>	2 inches <sup>d</sup>	3/4 inch	2 inches <sup>b</sup>	1 5/8 inches <sup>b</sup>
Band Joist <sup>c</sup>	3/4 inch	2 inches	2 inches <sup>b</sup>	1 5/8 inches <sup>b</sup>

For SI: 1 inch = 25.4 mm.

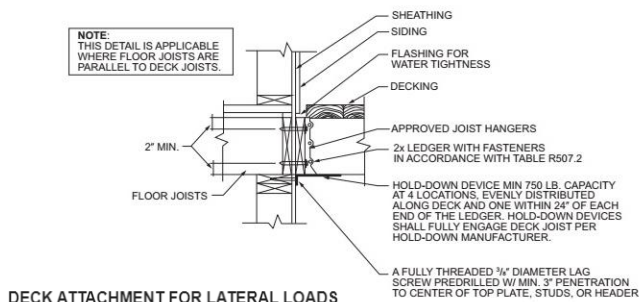
- a. Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with Figure R507.9.1.3(1).
- b. Maximum 5 inches.
- c. For engineered rim joists, the manufacturer's recommendations shall govern.
- d. The minimum distance from bottom row of lag screws or bolts to the top edge of the ledger shall be in accordance with Figure R507.9.1.3(1).



**FIGURE R507.9.1.3(1) PLACEMENT OF LAG SCREWS AND BOLTS IN LEDGERS**



**FIGURE R507.9.1.3(2) PLACEMENT OF LAG SCREWS AND BOLTS IN BAND JOISTS**



If you believe your deck is not connected properly, have it inspected. If you have questions, please contact your Mason County inspection staff at 360-427-9670 Ext 697