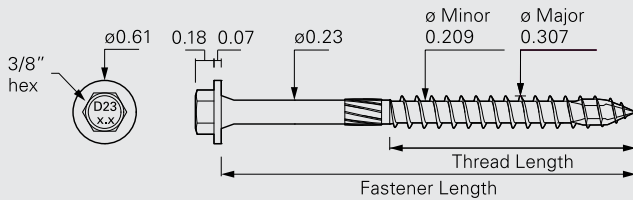




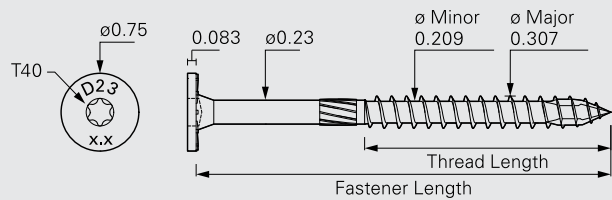
Deck Ledger to Rim Joist Structural *H23* and *F23*

Starborn® Structural *H23* and *F23* Deck Ledger / Multipurpose screws are specifically designed to attach deck ledgers to rim joists in accordance with IRC Section R507.9 and IBC Section 1604.8.3.

Structural *H23*



Structural *F23*



Installation Instructions

- Select either the 4" or 5" screw so the threads fully engage the rim joist and the tip extends beyond its back face.
- Determine spacing pattern utilizing Table 2. Install screws in a staggered "W" pattern along the length of the ledger while maintaining the required edge and end distances (Figure 2).
- Use a high-torque low-speed drill with a 3/8" hex or Torx® T40 driver bit. Pre-drilling is not required, but can be used where lumber is prone to splitting.
- Drive until the washer is drawn firm and flush. Do not overdrive or countersink.

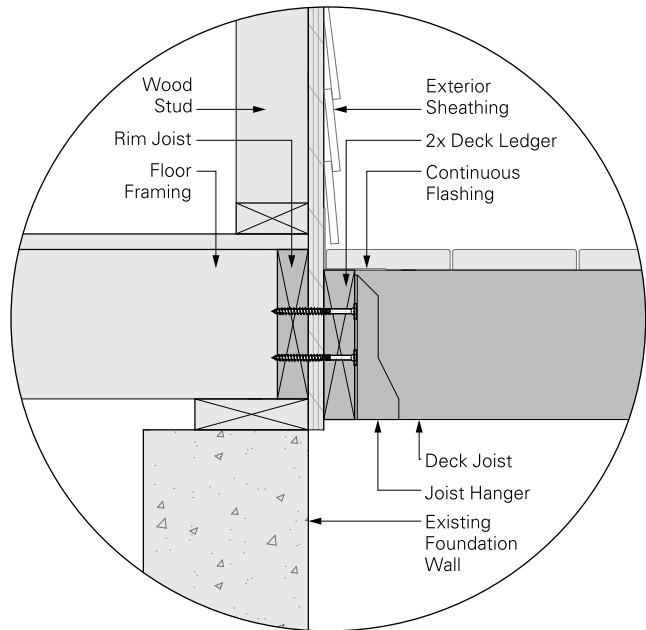


Figure 1—Deck Connection Assembly

Corrosion Resistance

- Structural *H23* and *F23* screws feature a high-adhesion exterior grade coating and are a code compliant alternative to hot-dip galvanized fasteners. The coating is approved for use in ACQ, Fire Retardant Treated (FRT), and other pressure treated lumbers.
- Structural *H23* and *F23* screws are not designed for use in or near saltwater environments.

Table 1: Screw Properties

Product Name	Head Marking	Unthreaded Shank Diameter (in)	Head Type	Screw Length (in)	Thread Length (in)
Structural <i>H23</i>	D23 4	0.23	Hex 3/8"	4	2-3/8
	D23 5			5	3
Structural <i>F23</i>	D23 4		Flat T40	4	2-3/8
	D23 5			5	3

For the most up to date version of this Technical Guide and more detailed information contained in the Deck Ledger and Ledger to Stud Applications code compliance report (DrJ TER 1703-01), visit starbornindustries.com. For applications outside the scope of this Technical Guide, an engineered design is required.

Deck Ledger to Rim Joist Structural H23 and F23

Figure 2—Minimum Spacing Requirements

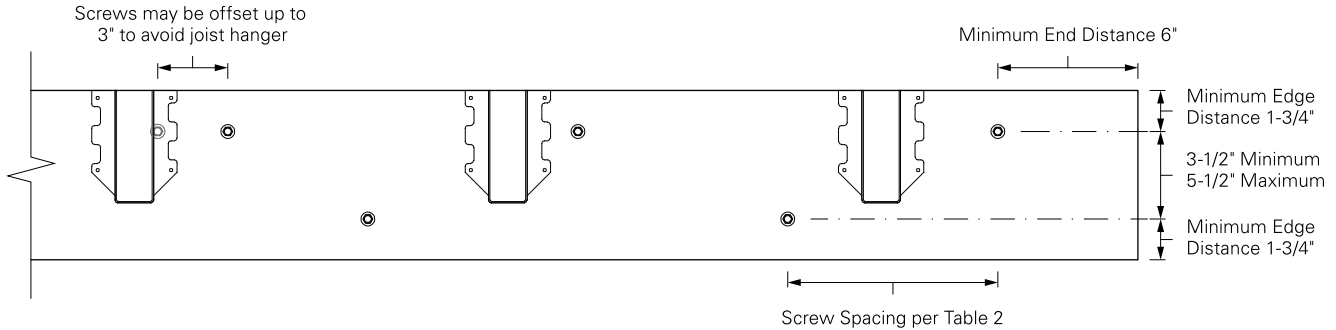


Table 2: IRC Compliant Screw Spacing Pattern for Attaching a Deck Ledger to a Band Joist

Loading Condition (psf): Live Load + Dead Load	Screw Length (in)	Rim Joist Material	2x Ledger Species	Maximum Deck Joist Spans (ft)						
				Up to 6	Up to 8	Up to 10	Up to 12	Up to 14	Up to 16	Up to 18
				Maximum On-Center Fastener Spacing (in)						
40+10	4	2x Sawn Lumber	HF/SPF	22	17	13	11	9	8	7
			DF/SP	30	22	18	15	12	11	10
		EWP	HF/SPF	24	18	14	12	10	9	8
			DF/SP	28	21	17	14	12	10	9
	5	2x Sawn Lumber	HF/SPF	24	18	14	12	10	9	8
			DF/SP	30	23	18	15	13	11	10
		EWP	HF/SPF	26	19	15	13	11	9	8
			DF/SP	30	23	18	15	13	11	10
60+10	4	2x Sawn Lumber	HF/SPF	16	12	9	8	6	6	5
			DF/SP	21	16	12	10	9	8	7
		EWP	HF/SPF	17	13	10	8	7	6	5
			DF/SP	20	15	12	10	8	7	6
	5	2x Sawn Lumber	HF/SPF	17	13	10	8	7	6	5
			DF/SP	23	17	13	11	9	8	7
		EWP	HF/SPF	18	14	11	9	8	7	6
			DF/SP	22	16	13	11	9	8	7

- Spacing for items in IRC 2018 Table 507.9.1.3(1) or IRC 2015 Table 507.2 and other materials and conditions.
- 2x solid sawn lumber rim joists and ledger shall be HF/SPF (SG = 0.42) or DF/SP (SG = 0.50).
- Minimum rim joist: 2x solid sawn lumber SPF (SG = 0.42) 1-1/2" thick and 7-1/4" deep; EWP (SG = 0.50) 1" thick and 7-1/4" deep.
- Minimum ledger: 1-1/2" thick and 7-1/4" deep.
- Ledger assumed to be in wet service condition.

- Design values include a wood load duration (C_D) = 1.0. Spacing may be adjusted by the applicable load duration as specified in NDS.
- Screw spacing based on tested loads. The design values are the lesser of a 1/8" deflection or a safety factor greater than or equivalent to the code compliant lag screw application.
- A maximum of 1/2" structural sheathing may be installed between the ledger and rim joist.

psf = pounds per square foot
EWP = Engineered Wood Product

HF = Hem-Fir
SPF = Spruce-Pine-Fir

DF = Douglas Fir
SP = Southern Pine

SG = Specific Gravity