



TABLE 2. POWERLAG® FASTENER SPACING FOR MAXIMUM DECK JOIST SPANS<sup>1,6,7,8,12</sup>

Loading Condition (Live Load, psf)	Head Type	Fastener Length <sup>2,4,5</sup> (in)	2x Nominal Ledger Species <sup>3,9,10</sup>	Band Joist Material <sup>11</sup>	Maximum Deck Joist Spans						
					Up to 6'	Up to 8'	Up to 10'	Up to 12'	Up to 14'	Up to 16'	Up to 18'
					Maximum On-Center Spacing of PowerLag® Fasteners						
40	T-Star	4 or 5	HF/SPF	Sawn Lumber	22	16	16	15	12	11	10
				1" min EWP	23	17	16	15	13	11	10
			DF/SP	Sawn Lumber	34	25	20	17	13	12	10
				1" min EWP	23	17	16	14	12	11	9
	Hex Head		HF/SPF	Sawn Lumber	28	21	17	12	11	9	8
				1" min EWP	21	14	11	9	8	7	6
			DF/SP	Sawn Lumber	30	22	18	12	10	9	8
				1" min EWP	26	19	16	13	11	10	8
60	T-Star	4 or 5	HF/SPF	Sawn Lumber	16	16	12	10	9	8	7
				1" min EWP	16	16	13	11	9	8	7
			DF/SP	Sawn Lumber	24	18	13	11	9	8	7
				1" min EWP	16	15	12	10	9	7	7
	Hex Head		HF/SPF	Sawn Lumber	20	13	11	9	7	6	6
				1" min EWP	14	10	8	7	6	5	4
			DF/SP	Sawn Lumber	21	1	10	8	7	6	5
				1" min EWP	18	14	11	9	8	7	6

SI: 1" = 25.4 mm

- Based on load duration of 1.0. Spacing may be adjusted by the applicable load duration as specified in *NDS*.
- Fasteners are required to have full thread penetration into the main member. Excess fastener length extending beyond the main member is not reflected in the table above.
- Solid sawn ledgers shall be HF/SPF or DFL/SP species (specific gravity of 0.42 and 0.50 respectively), designed by others.
- Fastener spacing for 4" fasteners is based on tested loads. The design values use the lesser of a 1/8" deflection or a factor of safety equivalent to or greater than that of the code compliant lag screw application. See Figure 3.
- Fastener spacing for 5" fasteners is based on previously published reference lateral design values.
- Fasteners shall be staggered from the top to the bottom along the length of the ledger while maintaining the required edge and end distances as shown in Figure 3.
- A maximum 5/8" structural sheathing may be installed between the ledger and the band joist.
- Table values assume 10 psf dead load.
- Ledger materials assumed to be in wet service condition.
- Minimum ledger board requirements: 1 1/2" thickness and 7 1/2" depth
- Minimum band joist requirements: SPF (specific gravity of 0.42) solid-sawn lumber 1 1/2" thick and 7 1/2" depth; EWP 1.0" thick and 7 1/4" depth
- Tabulated on-center spacing values are applicable where a third party tested plastic washer (e.g. Deck2Wall® Spacer) is installed between the ledger board and band joist at each fastener location. The plastic washer shall be installed per the washer manufacturer's instructions and this TER. The plastic washer shall be 2" in diameter, 1/2" thick (max), with an approximate 5/16" hole in the center for the PowerLag® and three 3/16" (approx.) holes for the #8 screws. The plastic washer shall be independently fastened to the ledger with three SPAX® #8x1-5/8" or three SPAX® #8x2" screws.

## 6 INSTALLATION

- 6.1 Installation shall comply with the manufacturer's installation instructions and this TER. In the event of a conflict between the manufacturer's installation instructions and this TER, the more restrictive shall govern.
- 6.2 The  $\frac{5}{16}$ " PowerLag® structural wood fastener must be installed with a  $\frac{1}{2}$ " (12.7 mm), low rpm/high torque electric drill (450 rpm) or impact wrench using the appropriate driver bit. Drive the fasteners through the ledger and sheathing into the band joist until the built-in washer head is drawn firm and flush to the ledger board. Do not overdrive.
- 6.3 Install PowerLag® fasteners such that the threads fully engage the band joist material and the fastener tip extends beyond the back face of the band joist material when fully seated against the installed ledger.

  - 6.3.1 A third party tested plastic washer (e.g., Deck2Wall® Spacer) may be installed between the ledger board and band joist at each fastener location. The plastic washer shall be installed per the washer manufacturer's instructions and this TER.
    - 6.3.1.1 The third party tested plastic washer shall be 2" in diameter,  $\frac{1}{2}$ " thick (max), with an approximate  $\frac{5}{16}$ " hole in the center for the PowerLag® and three  $\frac{3}{16}$ " (approx.) holes for the #8 screws.
    - 6.3.1.1.1 The third party tested plastic washer shall be independently fastened to the ledger with three SPAX® #8x1- $\frac{5}{8}$ " or three SPAX® #8x2" screws.

- 6.4 Lead holes are not required.
- 6.5 Figure 3 shows a detail of the PowerLag® fastener deck connection, including minimum edge and end distances.
- 6.6 Stagger the PowerLag® fasteners from the top to the bottom along the length of the ledger while maintaining the required edge and end distances.

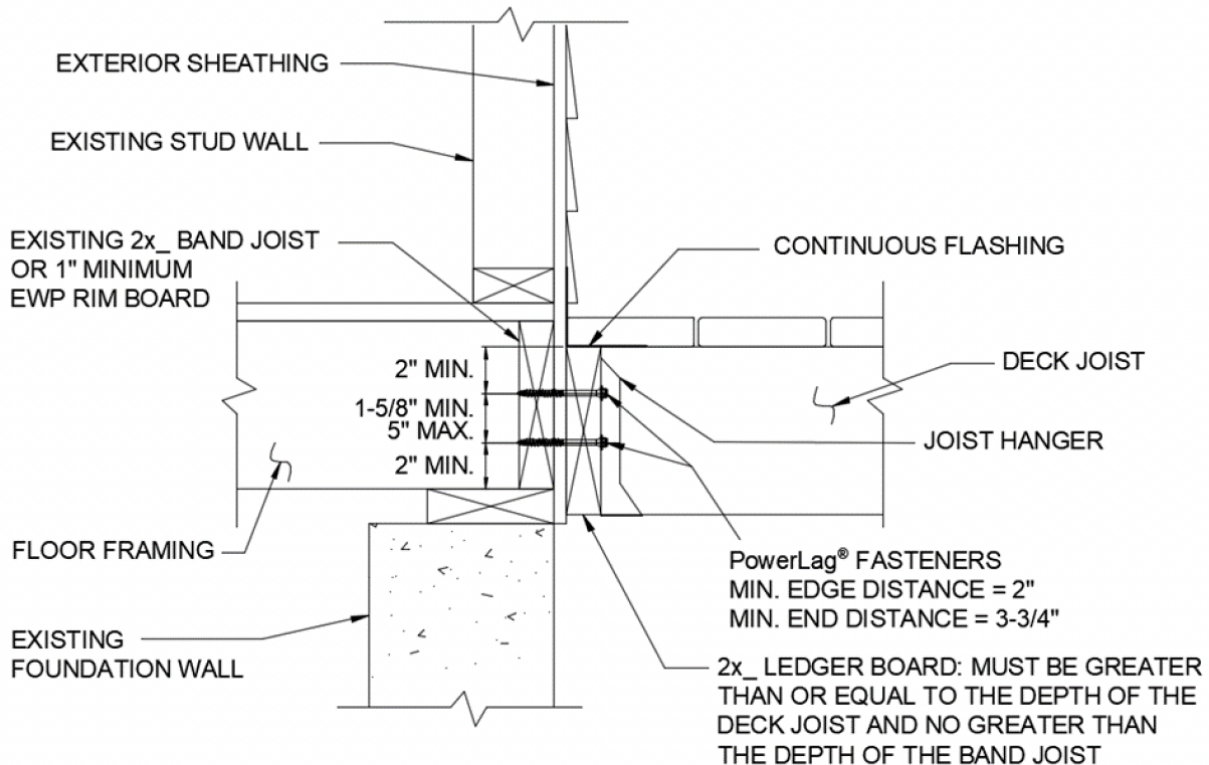


FIGURE 3. POWERLAG® FASTENER DECK CONNECTION

- 6.7 For applications outside the scope of this TER, an engineered design is required.

21-DrJ-0164  
February 25, 2022

Ms. Jodi Thomas  
Altenloh, Brinck and Company  
2105 County Rd 12C  
Bryan, OH 43506-8301

Re: Altenloh, Brinck and Company SPAX PowerLag® Deck Ledger to Rim Connection Design Value with Spacers Review

Dear Ms. Thomas:

The Center for Building Innovation (CBI) test report number 21-0075 entitled "Fastener Lateral Resistance Testing of SPAX PowerLag® Fasteners With and Without Deck2Wall Spacer" was reviewed.

Our evaluation of test data indicates that the SPAX® 5/16" PowerLag® and 3/8" PowerLags® can use the design properties found in TER 1711-01 when these screws are used with Deck2Wall® SWS Spacer.

Our evaluation of test data also indicates that the SPAX® #8x1-5/8" PowerDeck 304 Stainless Steel Deck Screw and #8x2" Multi-Material HCR-X™ (Exterior Coated) Deck Screw can be used with the Deck2Wall® SWS Spacer.

Finally, our evaluation of the test data indicates that the Deck2Wall® SWS Spacer can be applied over nominal 1/2" (i.e. 7/16") or 5/8" (i.e. 19/32") sheathing.

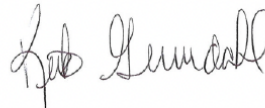
Please contact either of us with the contact information below, if we can help further in any way.

Prepared and Respectfully Submitted by:

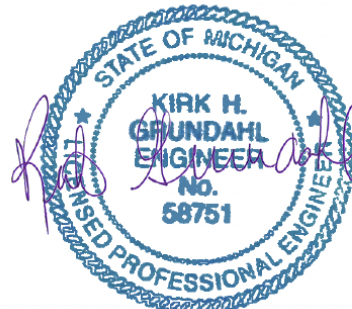


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