

Ledger Board to Rim Joist

U2 Fasteners' 5/16" and 25/64" Black Flat Head Screws are designed for wood-to-wood connections. The fasteners are partially threaded, self-drilling, dowel-type fasteners that are manufactured with carbon steel using standard cold-forming processes and are subsequently heat-treated and coated with a proprietary black nano coating. U2 Fasteners' 5/16" and 25/64" Black Flat Head Screws are Torx-driven screws with a washer head with Talon Grip™ on the bottom-side of the head and reamer threads above the cutting threads.

NOTES:

1. Connection capacities for multi-ply beams are based on U2 Fasteners 25/64" Black Flat Head Screws DrJ Engineering Report ENG-2404-324 and IAMPO UES ER-454.
2. Fastener Spacing Tables apply to Washer Head (CS) Construction Screws manufactured by U2 Fasteners and recognized in UES Evaluation Report 454.
3. Fastener Spacing Tables based on 2018 National Design Specification (NDS) 12.3 Reference Lateral Design Values.
4. Uniform deck live loads (40 psf and 60 psf) and dead loads (10 psf max) per ASCE 7-10 typical for residences.
5. Tabulated fastener size and spacing represents minimum installation to resist dead and live loads shown.
6. Wind and seismic loads are not considered in the tabulated values and shall be designed separately by others.
7. The minimum fastener end and edge distances and spacing shall be in accordance with NDS requirements, Table 5 of UES ER-454, or engineered wood product manufacturer recommendations, whichever is more restrictive.
8. Where installation creates splitting of the wood, holes are required to be pre-drilled in accordance with the NDS for wood-screw installation.
9. The U2 fasteners shall be installed only in exposure conditions described in Table 6 of UES ER-0454. Reference lateral design values in the Tables are for allowable stress design and shall be multiplied by the applicable adjustment factors specified in the NDS.
10. Fastener Spacing Tables apply to Number 2 Grade or better Wood Species shown in **TABLE 1**.
11. Specific Gravity (SG) shall be the assigned specific gravity for sawn lumber or wood structural panels per NDS Table 12.3.3A, or the engineered wood product equivalent specific gravity in applicable evaluation report.

TABLE 1

Wood Species	Specific Gravity (SG)
(SPF) Spruce-Pine Fir	G=0.42
(SPF) Spruce-Pine Fir	G=0.42
(HF) Hem Fir	G=0.43
(DFL) Douglas Fir Larch	G=0.50
(PSL) Parallel Strand Lumber	G=0.50
(LVL) Laminated Veneer Lumber	G=0.50
(LSL) Laminated Strand Lumber	G=0.50
(SP) Southern Pine	G=0.55

12. All lumber exposed to weather, water, concrete, masonry, fungus, termite, or any type of decay shall be pressure treated/wolmanized and/or protected per code and installed per manufacturer instructions.
13. Screws shall be installed straight into the side grain of the wood main members with the screw axis at a 90-degree angle to the wood fibers.
14. Tables apply to deck ledger boards (1-1/2" min. thickness) attached to wood rim joists (1-1/2" min. thickness) having sufficient capacity to support all imposed loads.
15. No building materials shall be installed between the deck ledger board and the rim joist.
16. All lumber shall have a moisture content of 19% or less at time of installation.
17. All lumber/connections shall be designed by a Register Design Professional acceptable to the Authority Having Jurisdiction (AHJ).
18. Special inspections per Chapter 17 of the International Building Code or locally adopted codes, as applicable.

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TECH BULLETIN
TABLE 2a

FASTENER: 5/16 x 4"			JOIST SPAN (ft)				
			6	8	10	12	14
Live Load (psf)	Wood Species	Fastener Shear Capacity	Fastener Spacing (in)				
40	SG =0.42 / SPF	197	15	11	9	7	6
40	SG =0.50 / DFL-PSL-LVL-LSL	227	18	13	10	9	7
40	SG =0.55 / SP	246	19	14	11	9	8
60	SG =0.42 / SPF	197	11	8	6	5	4
60	SG =0.50 / DFL-PSL-LVL-LSL	227	12	9	7	6	5
60	SG =0.55 / SP	246	14	10	8	7	6

NOTE: 1. Deck Dead Load (psf)=10

TABLE 2b (Wet Service)

FASTENER: 5/16 x 4"			JOIST SPAN (ft)				
			6	8	10	12	14
Live Load (psf)	Wood Species	Fastener Shear Capacity	Fastener Spacing (in)				
40	SG =0.42 / SPF	179	14	10	8	7	6
40	SG =0.50 / DFL-PSL-LVL-LSL	190	15	11	9	7	6
40	SG =0.55 / SP	197	15	11	9	7	6
60	SG =0.42 / SPF	179	10	7	6	5	4
60	SG =0.50 / DFL-PSL-LVL-LSL	190	10	8	6	5	4
60	SG =0.55 / SP	197	11	8	6	5	4

NOTE: 1. Deck Dead Load (psf)=10

2. Wet service factor 0.7

TABLE 2a

FASTENER: 25/64 x 4"			JOIST SPAN (ft)				
			6	8	10	12	14
Live Load (psf)	Wood Species	Fastener Shear Capacity	Fastener Spacing (in)				
40	SG =0.42 / SPF	301	24	18	14	12	10
40	SG =0.50 / DFL-PSL-LVL-LSL	378	30	22	18	15	12
40	SG =0.55 / SP	459	36	27	22	18	15
60	SG =0.42 / SPF	301	17	12	10	8	7
60	SG =0.50 / DFL-PSL-LVL-LSL	378	21	16	12	10	9
60	SG =0.55 / SP	459	26	19	15	13	11

NOTE: 1. Deck Dead Load (psf)=10

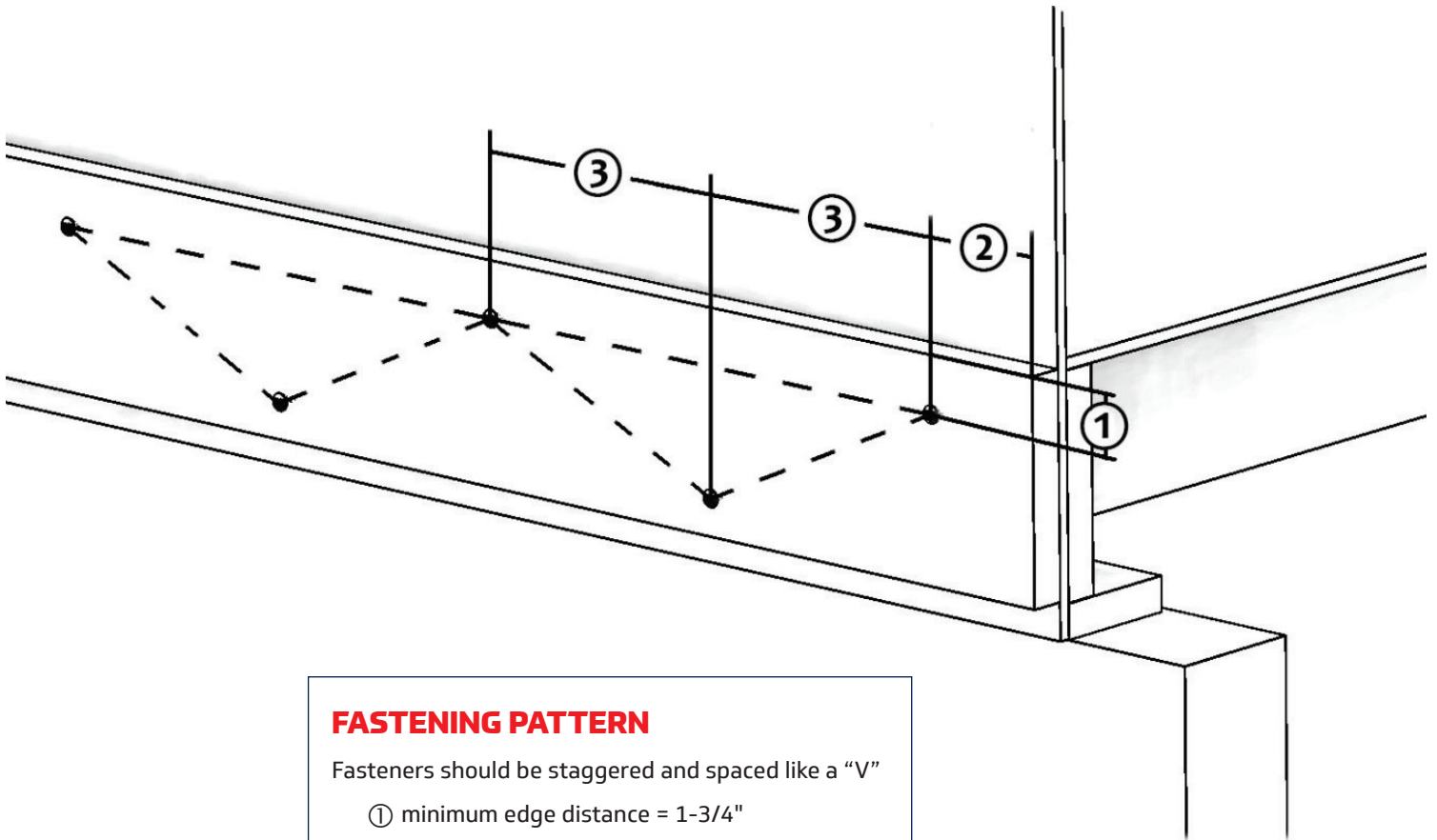
TABLE 3b (Wet Service)

FASTENER: 25/64 x 4"			JOIST SPAN (ft)				
			6	8	10	12	14
Live Load (psf)	Wood Species	Fastener Shear Capacity	Fastener Spacing (in)				
40	SG =0.42 / SPF	210	16	12	10	8	7
40	SG =0.50 / DFL-PSL-LVL-LSL	265	21	15	12	10	9
40	SG =0.55 / SP	321	25	19	15	12	11
60	SG =0.42 / SPF	210	12	9	7	6	5
60	SG =0.50 / DFL-PSL-LVL-LSL	265	15	11	9	7	6
60	SG =0.55 / SP	321	18	13	11	9	7

NOTE: 1. Deck Dead Load (psf)=10

2. Wet service factor 0.7

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FASTENING PATTERN

Fasteners should be staggered and spaced like a “V”

- ① minimum edge distance = 1-3/4"
- ② minimum end distance = 3-3/16"
- ③ spacing as per **TABLE 2a** or **TABLE 2b**



REFERENCES:

- DrJ ENG-2404-324 25-64 Screw US Design Value Report
- IAMPO UES ER-454

Scan QR code to find additional Code Compliance resources on our website:
u2fasteners.com/technical/code-compliance/