Tech Bulletin *Ledger Board: Structural Screw*

General Notes:

1. Deck ledger connections are based on connections to wood rim joists.
2. Deck ledger shall be preservative treated unless close grain redwood is used.
3. All ledger materials shall be No. 2 grade lumber minimum.
4. All lumber shall have a moisture content of 19% or less at time of installation.
5. The ledger shall be designed by a licensed design professional as required by the building code of jurisdiction or local ordinance.
6. Construction inspections as required by the building code of jurisdiction or local ordinance shall be coordinated with the construction schedule.
7. The live load assumed in these guidelines does not include snow load. The live loads contained herein are for residential occupancies of similar occupancies for the areas served by the deck.
8. Hot tubs and planters have not been included in these live loads.
9. The dead loads assumed shall include decking and finishes as well as decking support framing attached to the ledger board. Maximum dead load shall not exceed 10 psf.
10. The building code of jurisdiction and local building official ordinances shall govern over these guidelines contained in this bulletin.
11. A design professional should always be consulted for assemblies and fastening requirements.
12. Connection capacities are based on the National Design Specification (NDS) for wood construction, 2005 edition and GRK-Fasteners ICC-ES ESR-2442.
13. Capacities are designed at 100% stress level. Adjustments in stress level, such as for duration of load or wet-use conditions, may apply where permitted by code or local ordinance.
14. Deck Ledger boards and rim joist shall be 1½" thick minimum and shall be made of any of the following materials:

Table 1 Wood Species Specific Gravities

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

15. Rim joists shall have full bearing for the thickness of the material used and shall bear on a sill plate of preservative treated lumber or naturally decay resistant lumber such as close grain redwood.
16. All structural sheathing materials installed between the deck ledger board and the rim joist shall be positively attached with nails, screws or staples capable of transferring ledger board forces to the rim joists.
17. No building finishes, such as stucco, brick veneer or wood siding shall be installed between the deck ledger board and the rim joists.
18. Size and spacing of deck ledger connectors are based on gravity loads only and do not include wind and seismic forces.
19. Rim joist must be restrained for eccentric loading from deck ledger. Rim joist shall not be end-nailed to floor joists (not shown in Figure 1.)
20. Deck ledger connector spacing's may need to be reduced by up to 30% for wet-use in-service conditions depending on your climate and area of installation. Refer to Tables 3 and 5. Contact your local building official for guidance.

How to read this Bulletin:

1. Determine the required design live load based on the building code of jurisdiction or local governing ordinance.
2. Select the joist span and spacing.
3. Enter Tables 1 through 4 for the lumber species being used for the ledger or rim joist. The lumber species used in the tables shall be for the lowest specific gravity of either the ledger or rim joist.
4. Select screw type and spacing.

Example: A 2x Southern Pine deck ledger attached to a 2x Douglas Fir Larch rim joist. Deck joist span 10 feet supporting a 40 psf live load.

1. Live load = 40 psf
2. Joist span = 10 ft
3. Enter Table 1.
4. **Use a 5/16"x 4" RSS at 10" on center.**
5. **OR** enter Table 2 for **wet-use in- service** and use a 5/16"x 4" RSS at 7" on center.

Table 2

RSS 5/16 x 4"			Joist span				
			6 ft	8 ft	10 ft	12 ft	14 ft
Live load (psf)	Wood Species	Screw Shear Capacity	Screw Spacing in inches				
40	G= 0.42 / SPF	182	14	10	8	7	6
40	G = 0.50 / DF-PSL-LVL-LSV	213	17	12	10	8	7
40	G = 0.55 / SP	252	20	15	12	10	8
60	G= 0.42 / SPF	182	10	7	6	5	4
60	G = 0.50 / DF-PSL-LVL-LSV	213	12	9	7	6	5
60	G = 0.55 / SP	252	14	10	8	7	6

NOTE: 1. Deck Dead Load = 10 psf

Table 3 (wet-use in- service)

RSS 5/16 x 4"			Joist span				
			6 ft	8 ft	10 ft	12 ft	14 ft
Live load (psf)	Wood Species	Screw Shear Capacity	Screw Spacing in inches/ **wet-use in- service**				
40	G= 0.42 / SPF	127	10	7	6	5	4
40	G = 0.50 / DF-PSL-LVL-LSV	150	12	9	7	6	5
40	G = 0.55 / SP	176	14	10	8	7	6
60	G= 0.42 / SPF	127	7	5	4	3	3
60	G = 0.50 / DF-PSL-LVL-LSV	150	8	6	5	4	3
60	G = 0.55 / SP	176	10	7	6	5	4

NOTE: 1. Deck Dead Load = 10 psf

Table 4

***PHE*INOX** RSS 5/16 x 4"(Stainless steel)			Joist span				
			6 ft	8 ft	10 ft	12 ft	14 ft
Live load (psf)	Wood Species	Screw Shear Capacity	Screw Spacing in inches				
40	G= 0.42 / SPF	151	12	9	7	6	5
40	G = 0.50 / DF-PSL-LVL-LSV	187	14	11	8	7	6
40	G = 0.55 / SP	204	16	12	9	8	6
60	G= 0.42 / SPF	151	8	6	5	4	3
60	G = 0.50 / DF-PSL-LVL-LSV	187	10	8	6	5	4
60	G = 0.55 / SP	204	11	8	6	5	4

NOTE: 1. Deck Dead Load = 10 psf

Table 5 (wet-use in- service)

***PHE*INOX** RSS 5/16 x 4"(Stainless steel)			Joist span				
			6 ft	8 ft	10 ft	12 ft	14 ft
Live load (psf)	Wood Species	Screw Shear Capacity	Screw Spacing in inches/ **wet-use in- service**				
40	G= 0.42 / SPF	106	8	6	5	4	3
40	G = 0.50 / DF-PSL-LVL-LSV	131	10	7	6	5	4
40	G = 0.55 / SP	143	11	8	6	5	4
60	G= 0.42 / SPF	106	6	4	3	3	2
60	G = 0.50 / DF-PSL-LVL-LSV	131	7	5	4	3	3
60	G = 0.55 / SP	143	8	6	4	4	3

NOTE: 1. Deck Dead Load = 10 psf

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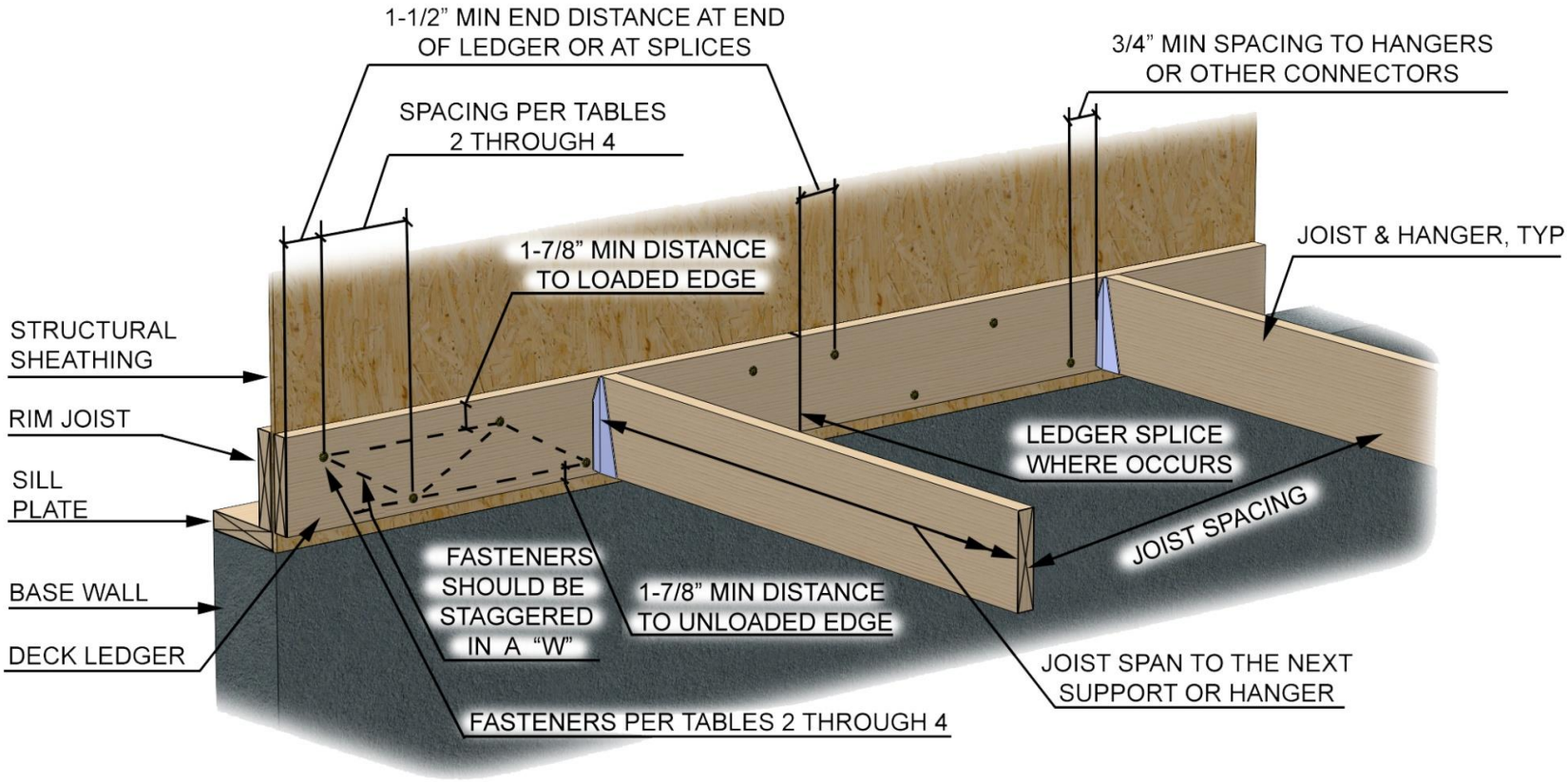

Figure 1

Scan code for the ICC Report ESR-2442

Note: 1. Floor joists not shown

2. Provide a fastener at end of splice or ledger board in addition to the screw spacing if more than 4-1/2" remains.

Flyer effective until Oct. 31, 2015

Updates should be obtained after this date.

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