EVERSTEAD
ENGINEERING & DESIGN

June 10, 2022

Summit Homes
120 SE 30th St.
Lee's Summit, MO 64082

RE: Field Issue of over-driven nails and incorrect nail pattern for Lot #12 Hawthorne Ridge – 2950 Arboridge Lee's Summit, MO 64082 – Permit # PRRES20214363

Findings:

- Dining room requires engineered bracing with 8d nails @ 3" oc at top and bottom of rim joist.
- More nails were fastened than required with a some nails being over-driven.

Recommendations:

- Overdriven nails in area in between top and bottom row at rim joist do not need renailed if countersunk more than 1/8" since they are not required for braced panel.
- 3" oc nailing pattern is allowable per APA report PR-N124 as shown in image below:
- Repair overdriven nails per manufacturer's spec's as shown in image below:

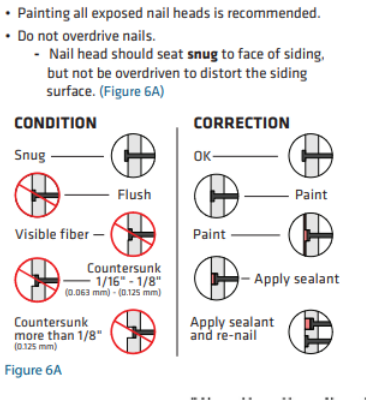

Figure 6A

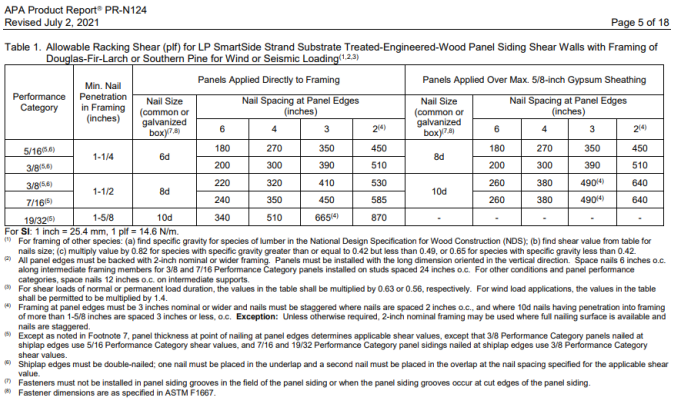
APA Product Report® PR-N124
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Table 1. Allowable Racking Shear (plf) for LP SmartSide Strand Substrate Treated-Engineered-Wood Panel Siding Shear Walls with Framing of Douglas-Fir-Larch or Southern Pine for Wind or Seismic Loading[1,2,3]

Performance Category	Min. Nail Penetration in Framing (inches)	Panels Applied Directly to Framing					Panels Applied Over Max. 5/8-inch Gypsum Sheathing				
		Nail Size (common or galvanized box)[7,8]	Nail Spacing at Panel Edges (inches)				Nail Size (common or galvanized box)[7,8]	Nail Spacing at Panel Edges (inches)			
			6	4	3	2[4]		6	4	3	2[4]
5/16[5,6]	1-1/4	6d	180	270	350	450	8d	180	270	350	450
3/8[5,6]			200	300	390	510		200	300	390	510
3/8[5,6]	1-1/2	8d	220	320	410	530	10d	260	380	490[4]	640
7/16[5]			240	350	450	585		260	380	490[4]	640
19/32[5]	1-5/8	10d	340	510	665[4]	870	-	-	-	-	-

For **SI**: 1 inch = 25.4 mm, 1 plf = 14.6 N/m.
(1) For framing of other species: (a) find specific gravity for species of lumber in the National Design Specification for Wood Construction (NDS); (b) find shear value from table for nails size; (c) multiply value by 0.82 for species with specific gravity greater than or equal to 0.42 but less than 0.49, or 0.65 for species with specific gravity less than 0.42.
(2) All panel edges must be backed with 2-inch nominal or wider framing. Panels must be installed with the long dimension oriented in the vertical direction. Space nails 6 inches o.c. along intermediate framing members for 3/8 and 7/16 Performance Category panels installed on studs spaced 24 inches o.c. For other conditions and panel performance categories, space nails 12 inches o.c. on intermediate supports.
(3) For shear loads of normal or permanent load duration, the values in the table shall be multiplied by 0.63 or 0.56, respectively. For wind load applications, the values in the table shall be permitted to be multiplied by 1.4.
(4) Framing at panel edges must be 3 inches nominal or wider and nails must be staggered where nails are spaced 2 inches o.c., and where 10d nails having penetration into framing of more than 1-5/8 inches are spaced 3 inches or less, o.c. **Exception:** Unless otherwise required, 2-inch nominal framing may be used where full nailing surface is available and nails are staggered.
(5) Except as noted in Footnote 7, panel thickness at point of nailing at panel edges determines applicable shear values, except that 3/8 Performance Category panels nailed at shiplap edges use 5/16 Performance Category shear values, and 7/16 and 19/32 Performance Category panel sidings nailed at shiplap edges use 3/8 Performance Category shear values.
(6) Shiplap edges must be double-nailed; one nail must be placed in the underlap and a second nail must be placed in the overlap at the nail spacing specified for the applicable shear value.
(7) Fasteners must not be installed in panel siding grooves in the field of the panel siding or when the panel siding grooves occur at cut edges of the panel siding.
(8) Fastener dimensions are as specified in ASTM F1667.

Sincerely,

Bradley Huxol, PE