



April 15, 2026

SnapNrack
775 Fiero Lane, Ste. 200
San Luis Obispo, CA 93401
TEL: (877) 732-2860

Attn.: SnapNrack - Engineering Department
PZSE Reference Number 2024-04731
Re: Master Report #'s 2017-03227.11, 2018-11940.03 & 2022-02141

PZSE, Inc. – Structural Engineers determined the allowable capacity for various SnapNrack roof attachments. This analysis is based on requirements set forth in the ASCE 7-16, ASCE 7-22, the 2018, 2021 & 2024 International Building Code(s), and the 2018, 2021 & 2024 International Residential Code(s). This letter shall serve as a summary letter showing the design capacity per attachment to be used with the an associated racking system. Please refer to the System Master Certification Report(s) for limitations of the racking system(s) certification and code criteria.

SnapNack Attachments:

The following published tables showing design reactions are considered maximum allowable(s). Fasteners shall be embedded into competent material. Refer to the tables for fastening material and minimum embedment requirements. For deck attachments, install fasteners with min. ¼” protrusion through the deck to ensure adequate thread engagement. Where fastener diameter is not shown, use fastener specified by manufacture with min. (6) diameter embedment. For standing seam roof clamps, clamps shall be torqued to mnfr. Specification.

Design Responsibility:

This report does not explicitly consider the effects on the existing building structural or architectural components. This requires additional knowledge of the building and is outside the scope of the certification of this racking system.

If you have any questions, do not hesitate to call.

Prepared by:
PZSE, Inc. – Structural Engineers
Roseville, CA

Racking System: UltraRail - Flush Mount			Minimum Embedment (in)	Design Reactions			
Mount	Fastener	Fastening Material		Uplift (lb)	Downforce (lb)	Side (lb)	Lateral (lb)
UltraFoot, Rafter	(1) 5/16" lag screw	Framing	2.1/2"	1325	2500	444	735
UltraFoot, Deck	(4) #14 wood screws	1/2" sheathing/plank/T&G	Full	285	350	180	245
UltraFoot, Deck	(4) #14 wood screws	3/8" sheathing/plank/T&G	Full	260	335	100	100
UltraFoot, Deck	(2) #14 wood screws	Framing	1.1/4"	584	674	271	271
UltraFoot, Anchor	(2) DeckAnchors	1/2" sheathing/plank/T&G	Full	500	350	430	430
UltraFoot, Anchor	(2) DeckAnchors	3/8" sheathing/plank/T&G	Full	375	350	200	200
UltraFoot, Anchor	(1) 5/16" lag screw	Framing	2.1/2"	1325	2500	444	735
SpeedSeal Foot	(1) 5/16" lag screw	Framing	2.1/2"	829	1333	443.8	443.8
SpeedSeal DeckFoot	(2) #14 wood screws	Framing	1.1/4"	584	674	271	271
SpeedSeal DeckFoot	(4) #14 wood screws	1/2" sheathing/plank/T&G	Full	448	335	275.7	275.7
SpeedSeal DeckFoot	(4) #14 wood screws	3/8" sheathing/plank/T&G	Full	260	335	100	100
Umbrella L-Foot	(1) 5/16" lag screw	Framing	2"	829	1333	356.7	356.7
Tile Hook WS	(2) 5/16" lag screws	Framing	2.1/2"	1200	500	356.7	356.7
Tile Hook WS	(6) #14 wood screws	1/2" sheathing/plank/T&G	Full	225	350	100	100
Tile Hook WS	(8) #14 wood screws	1/2" sheathing/plank/T&G	Full	300	350	100	100
Tile Hook WS	(6) #14 wood screws	3/8" sheathing/plank/T&G	Full	195	350	100	100
Tile Hook WS	(8) #14 wood screws	3/8" sheathing/plank/T&G	Full	262	335	120	120
Tile Roof Hook F	(2) 5/16" lag screws	Framing	2.1/2"	829.2	500	615.8	615.8
Adjustable Tile Hook	(2) 5/16" lag screws	Framing	2.1/2"	1200	500	615.8	615.8
Adjustable Tile Hook	(6) #14 wood screws	1/2" sheathing/plank/T&G	Full	225	350	100	100
Adjustable Tile Hook	(8) #14 wood screws	1/2" sheathing/plank/T&G	Full	300	350	100	100
Adjustable Tile Hook	(6) #14 wood screws	3/8" sheathing/plank/T&G	Full	195	350	100	100
Adjustable Tile Hook	(8) #14 wood screws	3/8" sheathing/plank/T&G	Full	262	350	100	100
OmniBase with 8-1/2 in Standoff	(1) 5/16" lag screw	Framing	2.1/2"	655	1333	305	266.3
OmniBase with 8-1/2 in Standoff	(6) #14 wood screws	1/2" sheathing/plank/T&G	Full	670	350	250	250
OmniBase with 8-1/2 in Standoff	(6) #14 wood screws	3/8" sheathing/plank/T&G	Full	390	335	120	120
OmniBase with 10 in Standoff	(1) 5/16" lag screw	Framing	2.1/2"	655	1333	259	226
OmniBase with 10 in Standoff + Omnishield	(6) #14 wood screws	1/2" sheathing/plank/T&G	Full	670	350	250	200
OmniBase with 10 in Standoff + Omnishield	(6) #14 wood screws	3/8" sheathing/plank/T&G	Full	390	350	250	200
OmniBase with 14 in Standoff	(1) 5/16" lag screw	Framing	2.1/2"	655	1333	185	162
OmniBase with 14 in Standoff + Omnishield	(6) #14 wood screws	1/2" sheathing/plank/T&G	Full	670	350	185	162
OmniBase with 14 in Standoff + Omnishield	(6) #14 wood screws	3/8" sheathing/plank/T&G	Full	390	350	185	162
OmniBase with 23 in Standoff	(1) 5/16" lag screw	Framing	2.1/2"	655	1333	113	98
OmniBase with 23 in Standoff + Omnishield	(6) #14 wood screws	1/2" sheathing/plank/T&G	Full	670	350	113	98
OmniBase with 23 in Standoff + Omnishield	(6) #14 wood screws	3/8" sheathing/plank/T&G	Full	390	350	113	98
AnchorFoot	(2) DeckAnchors	1/2" sheathing/plank/T&G	Full	500	350	430	430
AnchorFoot	(2) DeckAnchors	3/8" sheathing/plank/T&G	Full	375	350	200	200
AnchorFoot	(4) #14 wood screws	1/2" sheathing/plank/T&G	Full	500	350	275	275
AnchorFoot	(4) #14 wood screws	3/8" sheathing/plank/T&G	Full	260	350	100	100
AnchorFoot	(1) 5/16" lag screw	Framing	2.1/2"	802	1333	287	287
AnchorFoot	(2) #14 wood screws	Framing	1.1/4"	584	674	271	271
All Purpose L-Foot (90 Deg)	(1) 5/16" lag screw	Framing	2.1/2"	444.7	1468.7	259.3	336
Hanger Bolt Clamp	(1) 3/8" bolt	Framing	2.1/2"	397.3	460.9	500	500

Racking System: UltraRail - Flush Mount			Minimum Embedment (in)	Design Reactions			
Mount	Fastener	Fastening Material		Uplift (lb)	Downforce (lb)	Side (lb)	Lateral (lb)
S-5! N-mini w/ SnapNrack hardware	-	Taylor Metals Easy Lock Standing Seam 22ga (.030") Steel	-	485	500	409	204.5
S-5! N-mini w/ SnapNrack hardware	-	New Tech FF 100 22ga (.030") Steel	-	485	500	409	204.5
S-5! N-mini w/ SnapNrack hardware	-	Dimond Roofing Eurotray Lite 22ga (.030") Steel	-	496	500	225	225
S-5! N-mini w/ SnapNrack hardware	-	Metal Panel Systems NS-100 22ga (.030") Steel	-	485	500	409.1	204.5
S-5! N-mini w/ SnapNrack hardware	-	The Bryer Company TBC-Proseam 24ga (.024") Steel	-	766.5	500	337	168.5
S-5! N-mini w/ SnapNrack hardware	-	AB Martin AB Seam 124ga (.024") Steel	-	533.5	500	337	168.5
S-5! N-mini w/ SnapNrack hardware	-	McElroy Meridian 24ga (.024") Steel	-	533	500	464.5	232.25
S-5! N-mini w/ SnapNrack hardware	-	Englert A1101 24ga (.024") Steel	-	372	500	337	168.5
S-5! N-mini w/ SnapNrack hardware	-	Lysaght ENSEAM® 25mm 24ga (.024") Steel	-	595.5	500	400	133.3
S-5! N-mini w/ SnapNrack hardware	-	Sheet Metal Supply NS-124ga (.024") Steel	-	595.5	500	400	133.3
S-5! N-mini w/ SnapNrack hardware	-	Taylor Metals Easy Lock Standing Seam 24ga (.024") Steel	-	370	500	400	133.3
S-5! N-mini w/ SnapNrack hardware	-	New Tech FF 100 24ga (.024") Steel	-	370	500	370	185
S-5! N-mini w/ SnapNrack hardware	-	Westform Metals PROLOK 24ga (.024") Steel	-	481	500	253.5	126.75
S-5! N-mini w/ SnapNrack hardware	-	The Bryer Company TBC-Proseam 26ga (.018") Steel	-	380	500	225	112.5
S-5! N-mini w/ SnapNrack hardware	-	McElroy Meridian 26ga (.018") Steel	-	262.5	500	342	171
S-5! N-mini w/ SnapNrack hardware	-	ABC SL16 26ga (.018") Steel	-	367	500	225	112.5
S-5! N-mini w/ SnapNrack hardware	-	Westman Steel Snap-Lok 26ga (.018") Steel	-	200.7	500	225	112.5
S-5! N-mini w/ SnapNrack hardware	-	Agway NS25 26ga (.018") Steel	-	273.45	500	225	112.5
S-5! N-mini w/ SnapNrack hardware	-	Metal Sales Image II 26ga (.018") Steel	-	269.45	500	225	112.5
S-5! N-mini w/ SnapNrack hardware	-	Taylor Metals Easy Lock Standing Seam 26ga (.018") Steel	-	262	500	225	112.5
S-5! N-mini w/ SnapNrack hardware	-	New Tech FF 100 26ga (.018") Steel	-	262	500	229.5	114.75

Racking System: UltraRail - Flush Mount			Minimum Embedment (in)	Design Reactions			
Mount	Fastener	Fastening Material		Uplift (lb)	Downforce (lb)	Side (lb)	Lateral (lb)
S-5! N-mini w/ SnapNrack hardware	-	Metal Panel Systems NS-100 26ga (.018") Steel	-	262	500	225	225
S-5! N-mini w/ SnapNrack hardware	-	Westform Metals PROLOK 26ga (.018") Steel	-	264	500	233.5	116.75
S-5! N-mini w/ SnapNrack hardware	-	Englert A1101 18ga (.040") Aluminum	-	267	500	225	225
S-5! N-mini w/ SnapNrack hardware	-	Generic Generic 26ga (.018") Steel	-	225	500	225	113
S-5! N-mini w/ SnapNrack hardware	-	Generic Generic 20ga (.032") Aluminum	-	400	500	400	200
S-5! Protea Bracket w/ SnapNrack hardware	(4) 1/4" Self-Piercing Metal Screws	29ga (.014") Steel	Full	327	500	248	124
S-5! Protea Bracket w/ SnapNrack hardware	(4) 1/4" Self-Piercing Metal Screws	26ga (.018") Steel	Full	501.6	500	279.5	139.75
S-5! Protea Bracket w/ SnapNrack hardware	(4) 1/4" Self-Piercing Metal Screws	24ga (.024") Steel	Full	560	500	333.5	166.76
S-5! CorruBracket w/ SnapNrack hardware	(4) 1/4" Wood Screws	Framing	1.1/2"	795.6	500	616.76	308.38
S-5! CorruBracket w/ SnapNrack hardware	(4) 1/4" Self-Piercing Metal Screws	16ga (.060") Steel	Full	695.2	500	544.3	272.15
S-5! CorruBracket w/ SnapNrack hardware	(4) 1/4" Wood Screws	1/2" sheathing/plank/T&G	Full	306.9	500	338.3	169.16
S-5! CorruBracket w/ SnapNrack hardware	(4) 1/4" Wood Screws	3/8" sheathing/plank/T&G	Full	260	350	100	100
S-5! CorruBracket 100T w/ SnapNrack hardware	(4) 1/4" Self-Piercing Metal Screws	27ga (.017") Steel	Full	375	500	644.3	322.15
S-5! CorruBracket 100T w/ SnapNrack hardware	(4) 1/4" Self-Piercing Metal Screws	24ga (.024") Steel	Full	455.5	500	628.7	314.37
S-5! CorruBracket 100T w/ SnapNrack hardware	(4) 1/4" Self-Piercing Metal Screws	26ga (.018") Steel	Full	388	500	465.26	232.63
S-5! CorruBracket 100T w/ SnapNrack hardware	(4) 1/4" Self-Piercing Metal Screws	20ga (.032") Aluminum	Full	337	500	398.8	199.4
S-5! SolarFoot w/ SnapNrack hardware	(4) Fasteners	5/8" sheathing/plank/T&G	Full	446.4	500	392.8	196.4
S-5! SolarFoot w/ SnapNrack hardware	(4) Fasteners	17ga (.055") Galv Steel	Full	624	500	913.6	304.5
S-5! SolarFoot w/ SnapNrack hardware	(2) Fasteners	17ga (.055") Galv Steel	Full	507.2	500	722	240.67
S-5! SolarFoot w/ SnapNrack hardware	(2) Fasteners	Framing	1.1/2"	491.6	500	270.8	135.4
S-5! SolarFoot w/ SnapNrack hardware	(4) Fasteners	Framing	1.1/2"	621.6	500	662.4	331.2
S-5! SolarFoot w/ SnapNrack hardware	(4) Fasteners	1/2" sheathing/plank/T&G	Full	194.5	500	392.8	196.4
S-5! SolarFoot w/ SnapNrack hardware	(4) Fasteners	3/8" sheathing/plank/T&G	Full	260	350	100	100
S-5! VersaBracket 47 w/ SnapNrack hardware	(3) Fasteners	Framing	(6) Diameters	754.4	500	662.4	331.2
S-5! VersaBracket 47 w/ SnapNrack hardware	(2) Fasteners	Framing	(6) Diameters	526.8	500	394	197
S-5! VersaBracket 47 w/ SnapNrack hardware	(2) Fasteners	16ga (.060") Steel	Full	354.8	500	512.8	256.4
S-5! VersaBracket 47 w/ SnapNrack hardware	(3) Fasteners	1/2" sheathing/plank/T&G	Full	193.4	500	230.4	115.2
S-5! VersaBracket 47 w/ SnapNrack hardware	(3) Fasteners	3/8" sheathing/plank/T&G	Full	170	350	100	100
Metal Roof Base with L-Foot	(1) 1/4" Tek Screw	16ga (.060") Steel	Full	445	1458	445	445
Metal Roof Base with 7 in Standoff	(1) 1/4" Tek Screw	16ga (.060") Steel	Full	416	788	286	286
Metal Roof Base with L-Foot	(1) 5/16" lag screw	Framing	2.1/2"	445	1458	445	445
Metal Roof Base with 7 in Standoff	(1) 5/16" lag screw	Framing	2.1/2"	416	788	286	286
Wide Base Seam Clamp with L-Foot	-	26ga (.018") Steel	-	598	461	275	275

Racking System: UltraRail - Tilt Systems			Minimum Embedment (in)	Design Reactions			
Mount	Fastener	Fastening Material		Uplift (lb)	Downforce (lb)	Side (lb)	Lateral (lb)
Simple Tilt (5 Deg)	(1) 5/16" lag screw	Framing	2.1/2"	598	462	265	166
Simple Tilt (10 Deg)	(1) 5/16" lag screw	Framing	2.1/2"	598	462	265	166
OmniBase with 8-1/2 in Standoff	(1) 5/16" lag screw	Framing	2.1/2"	500	789	265	265
OmniBase with 8-1/2 in Standoff	(6) #14 wood screws	1/2" sheathing/plank/T&G	Full	500	350	100	100
OmniBase with 8-1/2 in Standoff	(6) #14 wood screws	3/8" sheathing/plank/T&G	Full	393	350	100	100
OmniBase with 10 in Standoff	(1) 5/16" lag screw	Framing	2.1/2"	655	1333	259	226
OmniBase with 10 in Standoff + Omnishield	(6) #14 wood screws	1/2" sheathing/plank/T&G	Full	500	350	175	150
OmniBase with 10 in Standoff + Omnishield	(6) #14 wood screws	3/8" sheathing/plank/T&G	Full	393	350	100	100
OmniBase with 14 in Standoff	(1) 5/16" lag screw	Framing	2.1/2"	655	1333	185	161.7
OmniBase with 14 in Standoff + Omnishield	(6) #14 wood screws	1/2" sheathing/plank/T&G	Full	500	350	124	106.5
OmniBase with 14 in Standoff + Omnishield	(6) #14 wood screws	3/8" sheathing/plank/T&G	Full	393	350	100	100
OmniBase with 23 in Standoff	(1) 5/16" lag screw	Framing	2.1/2"	655	1333	112.7	98
OmniBase with 23 in Standoff + Omnishield	(6) #14 wood screws	1/2" sheathing/plank/T&G	Full	500	350	75	64.5
OmniBase with 23 in Standoff + Omnishield	(6) #14 wood screws	3/8" sheathing/plank/T&G	Full	393	350	75	64.5

Note: All standoffs on this sheet refer to rear-leg height; front leg height is variable

Racking System: TopSpeed			Minimum	Design Reactions			
Mount	Fastener	Fastening Material	Embedment (in)	Uplift (lb)	Downforce (lb)	Side (lb)	Lateral (lb)
TopSpeed Original	(4) #14 wood screws	1/2" sheathing/plank/T&G	Full	448	335	320	320
TopSpeed Original	(4) #14 wood screws	3/8" sheathing/plank/T&G	Full	260	335	100	100
TopSpeed Universal - AlphaTrack	(1) 5/16" lag screw	Framing	2.1/2"	1325	2500	444	735
TopSpeed Universal - AlphaTrack	(2) DeckAnchors	1/2" sheathing/plank/T&G	Full	220	350	240	100
TopSpeed Universal - AlphaTrack	(2) DeckAnchors	3/8" sheathing/plank/T&G	Full	165	350	200	100
TopSpeed Universal - DeltaTrack	(2) #14 wood screws	Framing	1.1/4"	584	674	271	271
TopSpeed Universal - DeltaTrack	(4) #14 wood screws	1/2" sheathing/plank/T&G	Full	220	335	240	100
TopSpeed Universal - DeltaTrack	(4) #14 wood screws	3/8" sheathing/plank/T&G	Full	127	335	100	100
TopSpeed Universal - SpeedSeal Track	(1) 5/16" lag screw	Framing	2.1/2"	1325	2500	444	735
TopSpeed Universal - SpeedSeal DeckTrack	(1) 5/16" lag screw	Framing	2.1/2"	1325	2500	444	735
TopSpeed Universal - FlashTrack	(1) 5/16" lag screw	Framing	2.1/2"	1325	2500	444	735