



4/26/2017

Attn: Mr. Marshall Green
Quick Mount PV
2700 Mitchell Dr.
Walnut Creek, CA, 94598

RE: Quick Mount PV QHook Mount System for use with
SnapNrack Series 100 Roof Mount System

SEI Project No.: 17054.00

Dear Mr. Green

Structural Enginuity Inc. (SEI) has completed its review of the Quickmount PV QHook Mount System for use in conjunction with the SnapNrack Series 100 Roof Mount System 6063 Alloy Rails. The QHook product line includes the Quick Hook for Side Mount Rails (QMHS & QMHS) mounts.

The review was based on the following reference data:

- SnapNrack, Series 100 Residential Roof Mount System Installation Manual
- Norman Scheel, Structural Report and Calculations for Series 100 Roof Mount, July 6, 2013
- Applied Materials & Engineering, Laboratory Load Test of the QMHS with 6061 Base Plate, Project Number 114490C, March 18, 2015
- Applied Materials & Engineering, Laboratory Load Test of the QMHS with 6061 Base Plate, Project Number 114490C, March 10, 2015

SEI has determined that the QHook Mount is suitable for use with the SnapNrack Series 100 Roof Mount System, 6063 Alloy Rails. The approved installation and allowable loads for the Quick Mount PV TRM products is outlined in the Structural Enginuity, Inc. letters referenced above. The allowable load values are shown below, no additional load duration factors may be applied to these values.

Table 1: Qhook Allowable Loads

Load Direction	Mount Type	Allowable Load
Uplift	QMHSS	506 lb.
	QMHLs	418 lb.
Lateral	QMHSS	367 lb.
	QMHLs	323 lb.
Compression	QMHSS	378 lb.
	QMHLs	338 lb.

SEI has prepared allowable rail span charts for the Series 100 Roof Mount System used in conjunction with the Quick Mount PV QHook products. These span tables serve as a quick reference for looking up maximum rail spans based on building and site conditions and follow the 2016 CBC, 2015 IBC/IRC and applicable ASCE 7-10 load cases. The tables take into account the strength of the rail system as well as the allowable tension, compression, and lateral forces of the QHook Mount. A site specific analysis is required if the site conditions or building characteristics do not meet the requirements listed in the attached tables. In all cases, the tables are meant to be used in conjunction with SnapNrack Series 100 Structural Report and Calculations and all requirements listed are still applicable for these tables including edge zones and edge distances.

Please contact our office if you have any further questions relating to this matter.

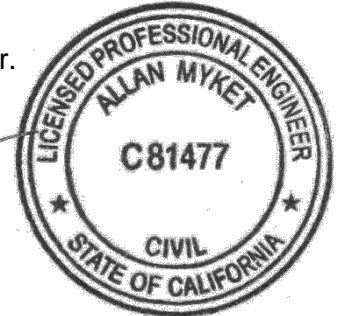
Sincerely,



Peter Martin
Engineer II
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Allan T. Myket, P.E.
President/Founder
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4/26/17

Structural Engenuity Inc.

Rail Spans for SnapNrack Series 100 Roof Mount for use with QMHSS Products

Table 1A		Roof Height:		0-30 ft												
		Roof Angle:		8 - 26 degrees												
Wind Load (Exposure Category B)																
Ground Snow Load (psf)	vult	110	115	120	125	130	135	140	145	150	155	160	170	180	190	
	qh	11.1	12.1	13.2	14.3	15.4	16.7	17.9	19.2	20.6	22.0	23.4	26.4	29.6	33.0	
	pg	ps	-7.6	-8.3	-9.1	-9.9	-10.7	-11.5	-12.4	-13.3	-14.2	-15.2	-16.1	-18.2	-20.4	-22.8
	0	0	126	126	126	126	126	123	117	112	107	103	99	93	87	81
	10	7.315	125	125	125	125	125	123	117	112	107	103	99	93	87	81
	20	14.63	89	89	89	89	89	89	89	89	89	89	89	89	87	81
	30	21.95	64	64	64	64	64	64	64	64	64	64	64	64	64	64
	40	29.26	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	50	36.58	41	41	41	41	41	41	41	41	41	41	41	41	41	41
	60	43.89	35	35	35	35	35	35	35	35	35	35	35	35	35	35
	70	51.21	30	30	30	30	30	30	30	30	30	30	30	30	30	30
	80	58.52	27	27	27	27	27	27	27	27	27	27	27	27	27	27
	100	73.15	22	22	22	22	22	22	22	22	22	22	22	22	22	22
	120	87.78	18	18	18	18	18	18	18	18	18	18	18	18	18	18

Rail Spans for SnapNrack Series 100 Roof Mount for use with QMHLS Products

Table 1B		Roof Height:		0-30 ft												
		Roof Angle:		8 - 26 degrees												
Wind Load (Exposure Category B)																
Ground Snow Load (psf)	vult	110	115	120	125	130	135	140	145	150	155	160	170	180	190	
	qh	11.1	12.1	13.2	14.3	15.4	16.7	17.9	19.2	20.6	22.0	23.4	26.4	29.6	33.0	
	pg	ps	-7.6	-8.3	-9.1	-9.9	-10.7	-11.5	-12.4	-13.3	-14.2	-15.2	-16.1	-18.2	-20.4	-22.8
	0	0	126	126	126	126	126	123	117	112	107	103	99	93	87	81
	10	7.315	125	125	125	125	125	123	117	112	107	103	99	93	87	81
	20	14.63	80	80	80	80	80	80	80	80	80	80	80	80	80	80
	30	21.95	57	57	57	57	57	57	57	57	57	57	57	57	57	57
	40	29.26	45	45	45	45	45	45	45	45	45	45	45	45	45	45
	50	36.58	37	37	37	37	37	37	37	37	37	37	37	37	37	37
	60	43.89	31	31	31	31	31	31	31	31	31	31	31	31	31	31
	70	51.21	27	27	27	27	27	27	27	27	27	27	27	27	27	27
	80	58.52	24	24	24	24	24	24	24	24	24	24	24	24	24	24
	100	73.15	19	19	19	19	19	19	19	19	19	19	19	19	19	19
	120	87.78	16	16	16	16	16	16	16	16	16	16	16	16	16	16

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Edge zone reductions are only required at shaded spans where reduction is 29 inches to a minimum of 32 inches.
3. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans for SnapNrack Series 100 Roof Mount for use with QMHSS Products

Table 2A		Roof Height:		0-30 ft												
		Roof Angle:		8 - 26 degrees												
Wind Load (Exposure Category C)																
Ground Snow Load (psf)	vult	110	115	120	125	130	135	140	145	150	155	160	170	180	190	
	qh	15.5	16.9	18.4	20.0	21.6	23.3	25.1	26.9	28.8	30.7	32.8	37.0	41.5	46.2	
	pg	ps	-10.7	-11.7	-12.7	-13.8	-14.9	-16.1	-17.3	-18.6	-19.9	-21.2	-22.6	-25.5	-28.6	-31.9
	0	0	126	121	115	109	104	100	95	92	88	85	82	76	72	68
	10	7.315	125	121	115	109	104	100	95	92	88	85	82	76	72	68
	20	14.63	89	89	89	89	89	89	89	89	88	85	82	76	72	68
	30	21.95	64	64	64	64	64	64	64	64	64	64	64	64	64	64
	40	29.26	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	50	36.58	41	41	41	41	41	41	41	41	41	41	41	41	41	41
	60	43.89	35	35	35	35	35	35	35	35	35	35	35	35	35	35
	70	51.21	30	30	30	30	30	30	30	30	30	30	30	30	30	30
	80	58.52	27	27	27	27	27	27	27	27	27	27	27	27	27	27
	100	73.15	22	22	22	22	22	22	22	22	22	22	22	22	22	22
120	87.78	18	18	18	18	18	18	18	18	18	18	18	18	18	18	

Rail Spans for SnapNrack Series 100 Roof Mount for use with QMHLS Products

Table 2B		Roof Height:		0-30 ft												
		Roof Angle:		8 - 26 degrees												
Wind Load (Exposure Category C)																
Ground Snow Load (psf)	vult	110	115	120	125	130	135	140	145	150	155	160	170	180	190	
	qh	15.5	16.9	18.4	20.0	21.6	23.3	25.1	26.9	28.8	30.7	32.8	37.0	41.5	46.2	
	pg	ps	-10.7	-11.7	-12.7	-13.8	-14.9	-16.1	-17.3	-18.6	-19.9	-21.2	-22.6	-25.5	-28.6	-31.9
	0	0	126	121	115	109	104	100	95	92	88	85	82	76	70	62
	10	7.315	125	121	115	109	104	100	95	92	88	85	82	76	70	62
	20	14.63	80	80	80	80	80	80	80	80	80	80	80	76	70	62
	30	21.95	57	57	57	57	57	57	57	57	57	57	57	57	57	57
	40	29.26	45	45	45	45	45	45	45	45	45	45	45	45	45	45
	50	36.58	37	37	37	37	37	37	37	37	37	37	37	37	37	37
	60	43.89	31	31	31	31	31	31	31	31	31	31	31	31	31	31
	70	51.21	27	27	27	27	27	27	27	27	27	27	27	27	27	27
	80	58.52	24	24	24	24	24	24	24	24	24	24	24	24	24	24
	100	73.15	19	19	19	19	19	19	19	19	19	19	19	19	19	19
120	87.78	16	16	16	16	16	16	16	16	16	16	16	16	16	16	

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Edge zone reductions are only required at shaded spans where reduction is 28 inches to a minimum of 32 inches.
3. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans for SnapNrack Series 100 Roof Mount for use with QMHSS Products

Table 3A		Roof Height:		0-30 ft												
		Roof Angle:		8 - 26 degrees												
Wind Load (Exposure Category D)																
Ground Snow Load (psf)	vult	110	115	120	125	130	135	140	145	150	155	160	170	180	190	
	qh	18.33	20.03	21.81	23.66	25.59	27.6	29.68	31.84	34.08	36.39	38.77	43.77	49.07	54.67	
	pg	ps	-12.6	-13.8	-15.0	-16.3	-17.7	-19.0	-20.5	-22.0	-23.5	-25.1	-26.8	-30.2	-33.9	-37.7
	0	0	115	109	104	99	94	90	86	83	80	77	74	70	65	62
	10	7.315	115	109	104	99	94	90	86	83	80	77	74	70	65	62
	20	14.63	89	89	89	89	89	89	86	83	80	77	74	70	65	62
	30	21.95	64	64	64	64	64	64	64	64	64	64	64	64	64	62
	40	29.26	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	50	36.58	41	41	41	41	41	41	41	41	41	41	41	41	41	41
	60	43.89	35	35	35	35	35	35	35	35	35	35	35	35	35	35
	70	51.21	30	30	30	30	30	30	30	30	30	30	30	30	30	30
	80	58.52	27	27	27	27	27	27	27	27	27	27	27	27	27	27
	100	73.15	22	22	22	22	22	22	22	22	22	22	22	22	22	22
120	87.78	18	18	18	18	18	18	18	18	18	18	18	18	18	18	

Rail Spans for SnapNrack Series 100 Roof Mount for use with QMHLS Products

Table 3B		Roof Height:		0-30 ft												
		Roof Angle:		8 - 26 degrees												
Wind Load (Exposure Category D)																
Ground Snow Load (psf)	vult	110	115	120	125	130	135	140	145	150	155	160	170	180	190	
	qh	18.3	20.0	21.8	23.7	25.6	27.6	29.7	31.8	34.1	36.4	38.8	43.8	49.1	54.7	
	pg	ps	-12.6	-13.8	-15.0	-16.3	-17.7	-19.0	-20.5	-22.0	-23.5	-25.1	-26.8	-30.2	-33.9	-37.7
	0	0	115	109	104	99	94	90	86	83	80	77	74	66	58	52
	10	7.315	115	109	104	99	94	90	86	83	80	77	74	66	58	52
	20	14.63	80	80	80	80	80	80	80	80	80	77	74	66	58	52
	30	21.95	57	57	57	57	57	57	57	57	57	57	57	57	57	52
	40	29.26	45	45	45	45	45	45	45	45	45	45	45	45	45	45
	50	36.58	37	37	37	37	37	37	37	37	37	37	37	37	37	37
	60	43.89	31	31	31	31	31	31	31	31	31	31	31	31	31	31
	70	51.21	27	27	27	27	27	27	27	27	27	27	27	27	27	27
	80	58.52	24	24	24	24	24	24	24	24	24	24	24	24	24	24
	100	73.15	19	19	19	19	19	19	19	19	19	19	19	19	19	19
120	87.78	16	16	16	16	16	16	16	16	16	16	16	16	16	16	

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Edge zone reductions are only required at shaded spans where reduction is 26 inches to a minimum of 32 inches.
3. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans for SnapNrack Series 100 Roof Mount for use with QMHSS Products

Table 4A		Roof Height: 0-30 ft		Wind Load (Exposure Category B)												
		Roof Angle: 27 - 45 degrees														
Ground Snow Load (psf)	vult	110	115	120	125	130	135	140	145	150	155	160	170	180	190	
	qh	11.06	12.09	13.16	14.28	15.45	16.66	17.91	19.22	20.56	21.96	23.4	26.41	29.61	32.99	
	pg	ps	-4.76	-5.2	-5.66	-6.14	-6.64	-7.16	-7.7	-8.26	-8.84	-9.44	-10.1	-11.4	-12.7	-14.2
	0	0	126	126	126	126	126	126	126	126	126	126	126	123	115	107
	10	5.39	126	126	126	126	126	126	126	126	125	124	123	120	115	107
	20	10.78	109	109	109	109	109	109	109	108	108	107	106	105	103	101
	30	16.17	92	92	92	92	92	92	92	92	92	92	91	89	87	84
	40	21.56	72	72	72	72	72	72	72	72	72	72	72	72	72	71
	50	26.95	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	60	32.34	51	51	51	51	51	51	51	51	51	51	51	51	51	51
	70	37.73	44	44	44	44	44	44	44	44	44	44	44	44	44	44
	80	43.12	39	39	39	39	39	39	39	39	39	39	39	39	39	39
	100	53.9	32	32	32	32	32	32	32	32	32	32	32	32	32	32
120	64.68	27	27	27	27	27	27	27	27	27	27	27	27	27	27	

Rail Spans for SnapNrack Series 100 Roof Mount for use with QMHLS Products

Table 4B		Roof Height: 0-30 ft		Wind Load (Exposure Category B)												
		Roof Angle: 27 - 45 degrees														
Ground Snow Load (psf)	vult	110	115	120	125	130	135	140	145	150	155	160	170	180	190	
	qh	11.1	12.1	13.2	14.3	15.4	16.7	17.9	19.2	20.6	22.0	23.4	26.4	29.6	33.0	
	pg	ps	-4.8	-5.2	-5.7	-6.1	-6.6	-7.2	-7.7	-8.3	-8.8	-9.4	-10.1	-11.4	-12.7	-14.2
	0	0	126	126	126	126	126	126	126	126	126	126	126	123	115	107
	10	5.39	126	126	126	126	126	126	126	126	125	124	123	120	115	107
	20	10.78	109	109	109	109	109	109	109	107	105	104	102	99	96	92
	30	16.17	82	82	82	82	82	82	82	82	82	82	82	80	77	75
	40	21.56	65	65	65	65	65	65	65	65	65	65	65	65	65	64
	50	26.95	53	53	53	53	53	53	53	53	53	53	53	53	53	53
	60	32.34	46	46	46	46	46	46	46	46	46	46	46	46	46	46
	70	37.73	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	80	43.12	35	35	35	35	35	35	35	35	35	35	35	35	35	35
	100	53.9	29	29	29	29	29	29	29	29	29	29	29	29	29	29
120	64.68	24	24	24	24	24	24	24	24	24	24	24	24	24	24	

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Edge zone reductions are only required at shaded spans where reduction is 15 inches to a minimum of 32 inches.
3. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans for SnapNrack Series 100 Roof Mount for use with QMHSS Products

Table 5A		Roof Height:		0-30 ft												
		Roof Angle:		27 - 45 degrees												
Wind Load (Exposure Category C)																
Ground Snow Load (psf)	vult	110	115	120	125	130	135	140	145	150	155	160	170	180	190	
	qh	15.48	16.92	18.42	19.99	21.62	23.32	25.08	26.9	28.79	30.74	32.75	36.98	41.46	46.19	
	pg	ps	-6.66	-7.28	-7.92	-8.6	-9.3	-10	-10.8	-11.6	-12.4	-13.2	-14.1	-15.9	-17.8	-19.9
	0	0	126	126	126	126	126	126	126	122	117	112	108	100	94	88
	10	5.39	126	126	126	125	124	123	121	120	117	112	108	100	94	88
	20	10.78	109	109	109	108	107	106	105	104	103	102	102	99	94	88
	30	16.17	92	92	92	92	92	91	90	89	87	86	84	82	79	76
	40	21.56	72	72	72	72	72	72	72	72	72	72	71	69	67	65
	50	26.95	60	60	60	60	60	60	60	60	60	60	60	60	59	57
	60	32.34	51	51	51	51	51	51	51	51	51	51	51	51	51	51
	70	37.73	44	44	44	44	44	44	44	44	44	44	44	44	44	44
	80	43.12	39	39	39	39	39	39	39	39	39	39	39	39	39	39
	100	53.9	32	32	32	32	32	32	32	32	32	32	32	32	32	32
	120	64.68	27	27	27	27	27	27	27	27	27	27	27	27	27	27

Rail Spans for SnapNrack Series 100 Roof Mount for use with QMHLS Products

Table 5B		Roof Height:		0-30 ft												
		Roof Angle:		27 - 45 degrees												
Wind Load (Exposure Category C)																
Ground Snow Load (psf)	vult	110	115	120	125	130	135	140	145	150	155	160	170	180	190	
	qh	15.5	16.9	18.4	20.0	21.6	23.3	25.1	26.9	28.8	30.7	32.8	37.0	41.5	46.2	
	pg	ps	-6.7	-7.3	-7.9	-8.6	-9.3	-10.0	-10.8	-11.6	-12.4	-13.2	-14.1	-15.9	-17.8	-19.9
	0	0	126	126	126	126	126	126	126	122	117	112	108	100	94	88
	10	5.39	126	126	126	125	124	123	121	120	117	112	108	100	94	88
	20	10.78	109	109	108	106	104	102	100	98	96	94	93	89	85	82
	30	16.17	82	82	82	82	82	82	81	79	78	77	76	73	71	68
	40	21.56	65	65	65	65	65	65	65	65	65	65	64	62	60	58
	50	26.95	53	53	53	53	53	53	53	53	53	53	53	53	52	51
	60	32.34	46	46	46	46	46	46	46	46	46	46	46	46	46	45
	70	37.73	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	80	43.12	35	35	35	35	35	35	35	35	35	35	35	35	35	35
	100	53.9	29	29	29	29	29	29	29	29	29	29	29	29	29	29
	120	64.68	24	24	24	24	24	24	24	24	24	24	24	24	24	24

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Edge zone reductions are only required at shaded spans where reduction is 15 inches to a minimum of 32 inches.
3. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans for SnapNrack Series 100 Roof Mount for use with QMHSS Products

Table 6A		Roof Height:		0-30 ft												
		Roof Angle:		27 - 45 degrees												
Wind Load (Exposure Category D)																
Ground Snow Load (psf)	vult	110	115	120	125	130	135	140	145	150	155	160	170	180	190	
	qh	18.33	20.03	21.81	23.66	25.59	27.6	29.68	31.84	34.08	36.39	38.77	43.77	49.07	54.67	
	pg	ps	-7.88	-8.61	-9.38	-10.2	-11	-11.9	-12.8	-13.7	-14.7	-15.6	-16.7	-18.8	-21.1	-23.5
	0	0	126	126	126	126	126	120	115	110	105	101	97	91	85	80
	10	5.39	126	125	124	122	121	119	115	110	105	101	97	91	85	80
	20	10.78	109	108	107	106	105	104	103	102	101	100	97	91	85	80
	30	16.17	92	92	92	91	90	88	87	85	84	82	81	78	75	72
	40	21.56	72	72	72	72	72	72	72	72	71	70	69	66	64	62
	50	26.95	60	60	60	60	60	60	60	60	60	60	60	58	56	55
	60	32.34	51	51	51	51	51	51	51	51	51	51	51	51	50	49
	70	37.73	44	44	44	44	44	44	44	44	44	44	44	44	44	44
	80	43.12	39	39	39	39	39	39	39	39	39	39	39	39	39	39
	100	53.9	32	32	32	32	32	32	32	32	32	32	32	32	32	32
120	64.68	27	27	27	27	27	27	27	27	27	27	27	27	27	27	

Rail Spans for SnapNrack Series 100 Roof Mount for use with QMHLS Products

Table 6B		Roof Height:		0-30 ft												
		Roof Angle:		27 - 45 degrees												
Wind Load (Exposure Category D)																
Ground Snow Load (psf)	vult	110	115	120	125	130	135	140	145	150	155	160	170	180	190	
	qh	18.3	20.0	21.8	23.7	25.6	27.6	29.7	31.8	34.1	36.4	38.8	43.8	49.1	54.7	
	pg	ps	-7.9	-8.6	-9.4	-10.2	-11.0	-11.9	-12.8	-13.7	-14.7	-15.6	-16.7	-18.8	-21.1	-23.5
	0	0	126	126	126	126	126	120	115	110	105	101	97	91	85	80
	10	5.39	126	125	124	122	121	119	115	110	105	101	97	91	85	80
	20	10.78	108	106	104	102	100	98	96	93	91	89	87	84	80	76
	30	16.17	82	82	82	82	80	79	77	76	75	73	72	69	67	64
	40	21.56	65	65	65	65	65	65	65	64	63	62	61	59	57	55
	50	26.95	53	53	53	53	53	53	53	53	53	53	53	52	50	49
	60	32.34	46	46	46	46	46	46	46	46	46	46	46	46	45	44
	70	37.73	40	40	40	40	40	40	40	40	40	40	40	40	40	39
	80	43.12	35	35	35	35	35	35	35	35	35	35	35	35	35	35
	100	53.9	29	29	29	29	29	29	29	29	29	29	29	29	29	29
120	64.68	24	24	24	24	24	24	24	24	24	24	24	24	24	24	

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Edge zone reductions are only required at shaded spans where reduction is 16 inches to a minimum of 32 inches.
3. Panels are assumed to be in portrait orientation with a maximum length of 66"