



KXH - Horizontal Rail Orientation
 Substrate: 16 Ga. Stud (50 ksi)
 Rail Size: Alum L-60x40x2.0

MAXIMUM UNFACTORED WIND LOAD (PSF)

Dead Load (psf)	Bracket Sizes (mm)																								
	40 mm leg in bracket		60		90		120		150		60 mm leg in bracket		180	210	240	270									
2	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32							
	24	41	18	10	46	30	19	46	30	19	45	29	19	44	28	19	35	23	17	26	17	13	21	14	10
3	36	20	12	6	30	20	11	29	19	11	29	18	11	28	18	11	23	15	11	17	11	8	14	9	6
	48	27	9	3	36	24	8	22	14	8	21	13	8	20	12	8	17	11	8	13	6	6	10	6	6
4	60	16	7	9	17	11	5	17	10	5	16	10	5	16	9	5	13	8	5	10	6	8	21	13	10
	24	41	18	9	45	29	17	45	29	17	44	28	17	43	27	17	34	22	16	26	17	12	21	13	10
5	36	27	11	8	29	19	9	28	17	9	27	17	9	27	16	9	22	14	9	17	10	7	13	8	6
	48	20	8	4	21	13	6	20	12	6	19	11	6	19	11	6	16	10	6	12	7	5	10	6	6
8	60	16	6	17	10	10	16	10	15	9	15	9	14	8	7	12	7	12	7	9	6	7	13	8	6
	24	41	17	9	44	29	15	44	28	15	43	27	15	42	26	15	33	21	15	25	16	11	20	13	9
5	36	26	11	5	29	18	8	28	17	8	27	16	8	26	15	8	21	13	8	16	10	7	13	8	5
	48	19	8	6	21	13	9	20	12	9	19	11	9	18	10	9	15	8	11	7	9	9	9	5	5
8	60	15	6	16	9	15	8	14	8	8	13	7	12	6	11	6	11	6	9	7	9	9	7	7	7
	24	40	17	9	44	28	13	43	27	13	41	25	13	40	24	13	33	21	13	25	15	11	20	12	8
5	36	26	10	26	17	6	27	16	6	24	14	6	23	13	6	21	12	6	15	9	5	12	7	7	
	48	19	7	9	20	11	11	17	9	16	8	15	7	15	7	14	6	9	8	5	8	8	8	8	8
8	60	15	5	15	7	14	7	13	6	12	5	10	5	9	4	9	4	8	4	8	4	7	7	7	7
	24	39	15	7	41	25	7	38	22	7	36	20	7	34	18	7	30	16	7	23	14	7	18	11	
8	36	25	9	25	12	23	12	22	11	20	9	20	9	18	7	16	6	14	7	14	7	11	11	11	
	48	17	6	17	11	15	12	14	11	12	10	10	10	10	7	8	8	7	7	7	7	7	7	7	7
60	12	12	11	9	9	9	7	9	7	7	7	5	5	5	5	5	5	5	5	5	5	5	5	5	5

GOVERNING DESIGN COMPONENT

Dead Load (psf)	Bracket Sizes (mm)																										
	40 mm leg in bracket		60		90		120		150		60 mm leg in bracket		180	210	240	270											
2	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32									
	24	Rail	Rail	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS
3	36	Rail	Rail	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS
	48	Rail	Rail	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS
4	60	Rail	Rail	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS
	24	Rail	Rail	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS
5	36	Rail	Rail	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS
	48	Rail	Rail	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS
8	60	Rail	Rail	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS
	24	Rail	Rail	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS
4	36	Rail	Rail	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS
	48	Rail	Rail	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS
5	60	Rail	Rail	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS
	24	Rail	Rail	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS
8	36	Rail	Rail	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS
	48	Rail	Rail	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS	Rail	BTS	BTS
60	12	11	9	9	9	9	7	9	7	7	7	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	

TABLE NOTES

The design wind loads above are based on the following:

- Analysis of the bracket, rail and mechanical attachments are in general accordance with NBCC 2015 using Limit States Design (LSD)
- Bracket: Kladfix KXH Single Bracket - Aluminum 6063-T6; Fy = 200 MPa
- Adaptor: Kladfix KXH Adaptor - Aluminum 6063-T6; Fy = 200 MPa
- Adaptor to Bracket & to Aluminum Rail Fastener: SDA5 #12 x 7/8" Full SS 316 Self-driller Screw
- Adaptor to Steel Rail Fastener: Generic #12-14 x 1" Full SS 316 Self-driller Screw
- Metal Stud Anchor: SFS Br-Metal Self-Drilling SD2 1/4-1/4 x 2" Screw (CCR-0387)
- Concrete Anchor: 1/4" x 2-1/4" (1 1/4" embed) Tapcon Screw Anchor (ESR-2202)
- CMU Anchor: 1/4" x 2" Tapcon Screw Anchor (ESR-1671)
- Vertical and horizontal rail deflection limited to L/360

The table above is intended to provide estimated design wind loads and is for advice and guidance based on NBCC 2015 and must be verified by a licensed engineer of record in the state or province where the product is to be installed. Analysis of the bracket, rail and mechanical attachments was conducted by MORRISON HERSHFELD. Results have not been verified by testing.

GOVERNING DESIGN COMPONENT TABLE LEGEND

ACRONYM	DESCRIPTION
ATB	Adaptor fastener connection to bracket (horizontal orientation only)
ATR	Rail fastener connection to adaptor (horizontal orientation only)
Bracket	Aluminum bracket
BTS	Fastener connection of bracket-to-substrate
BTS-D	Fastener connection of bracket-to-substrate at double bracket (vertical only)
D-Bracket	Aluminum dead load bracket (double) (vertical only)
Rail	Rail governs (either deflection or stress)
RTB-D	Rail to bracket fastener connection at double (dead load) bracket (vertical only)
BTS-S	Rail to bracket fastener connection at single (wind load) bracket (vertical only)
S-Bracket	Aluminum wind load bracket (single)



KXH - Horizontal Rail Orientation
 Substrate: 16 Ga. Stud (50 ksi)
 Rail Size: Steel L-60x40x1.27

MAXIMUM UNFACTORED WIND LOAD (PSF)

Dead Load (psf)	Bracket Sizes (mm)																																
	40 mm leg in bracket			60 mm leg in bracket			90 mm leg in bracket			120 mm leg in bracket			150 mm leg in bracket			180 mm leg in bracket			210 mm leg in bracket			240 mm leg in bracket			270 mm leg in bracket								
	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32
2	24	33	22	16	46	30	22	46	30	22	45	29	21	44	28	20	35	23	17	26	17	13	21	14	10	10	6	6	6	6	6		
3	36	22	14	11	30	20	14	29	19	13	29	18	13	28	18	12	23	15	11	17	11	8	14	9	6	6	6	6	6	6	6		
4	48	16	11	8	22	14	10	22	14	10	21	13	9	20	12	8	17	11	8	6	10	6	6	6	6	6	6	6	6	6	6		
5	60	13	9	7	17	11	8	17	10	7	14	10	7	16	10	7	13	8	6	10	6	6	6	6	6	6	6	6	6	6	6		
6	24	33	22	16	45	29	21	44	28	20	43	27	19	43	27	19	34	22	16	26	17	12	21	13	10	10	6	6	6	6	6		
7	36	22	14	11	29	19	13	29	18	13	28	17	12	27	17	11	22	14	10	17	10	7	13	8	6	6	6	6	6	6	6		
8	48	16	11	8	21	13	9	21	13	9	20	12	8	19	11	7	16	10	6	12	7	5	10	6	6	6	6	6	6	6	6		
9	60	13	9	7	17	10	7	16	10	6	15	9	6	15	8	5	12	7	5	9	6	6	6	6	6	6	6	6	6	6	6		
10	24	33	22	16	44	28	20	43	27	19	41	25	17	40	24	16	33	21	14	25	15	11	20	12	8	8	6	6	6	6	6		
11	36	22	14	11	28	17	12	27	16	11	25	15	9	24	14	8	23	13	7	21	12	6	15	9	5	5	5	5	5	5	5		
12	48	16	11	8	20	12	8	17	9	6	16	8	5	16	8	5	15	7	6	14	6	4	8	5	5	5	5	5	5	5	5		
13	60	13	9	5	15	9	5	14	7	4	13	6	4	12	5	3	9	5	3	8	4	3	6	4	4	4	4	4	4	4	4		
14	24	33	22	16	41	25	17	39	23	15	38	22	14	36	20	12	34	18	10	23	14	7	18	11	11	11	11	11	11	11	11		
15	36	22	14	9	25	14	9	23	13	7	22	11	6	20	9	5	18	6	5	16	6	4	7	5	5	5	5	5	5	5	5		
16	48	16	9	5	17	9	5	15	7	4	14	6	4	12	5	3	10	5	3	8	4	3	6	4	4	4	4	4	4	4	4		
17	60	12	6	6	12	6	6	11	9	7	9	6	6	7	6	5	8	6	5	10	7	5	7	5	5	5	5	5	5	5	5		

GOVERNING DESIGN COMPONENT

Dead Load (psf)	Bracket Sizes (mm)																																
	40 mm leg in bracket			60 mm leg in bracket			90 mm leg in bracket			120 mm leg in bracket			150 mm leg in bracket			180 mm leg in bracket			210 mm leg in bracket			240 mm leg in bracket			270 mm leg in bracket								
	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32
2	ATR	ATR	ATR	ATR	ATR	ATR	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
3	ATR	ATR	ATR	ATR	ATR	ATR	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
4	ATR	ATR	ATR	ATR	ATR	ATR	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
5	ATR	ATR	ATR	ATR	ATR	ATR	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
8	ATR	ATR	ATR	ATR	ATR	ATR	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
60	ATR	ATR	ATR	ATR	ATR	ATR	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS

TABLE NOTES

The design wind loads above are based on the following:

- Analysis of the bracket, rail and mechanical attachments are in general accordance with NBCC 2015 using Limit States Design (LSD)
- Bracket: Kladfix KXH Single Bracket - Aluminum 6063-T6; Fy = 200 MPa
- Adaptor to Bracket & to Aluminum Rail Fastener: SDA5 #12 x 7/8" Full SS 316 Self-driller Screw
- Adaptor to Steel Rail Fastener: Generic #12-14 x 1" Full SS 316 Self-driller Screw
- Metal Stud Anchor: SFS Br-Metal Self-Drilling SD2 1/4-1/4 x 2" Screw (OCRR-0387)
- Concrete Anchor: 1/4" x 2-1/4" (1 1/4" embed) Tapcon Screw Anchor (ESR-2202)
- CMU Anchor: 1/4" x 2" Tapcon Screw Anchor (ESR-1671)
- Vertical and horizontal rail deflection limited to L/360

The table above is intended to provide estimated design wind loads and is for advice and guidance based on NBCC 2015 and must be verified by a licensed engineer of record in the state or province where the product is to be installed. Analysis of the bracket, rail and mechanical attachments was conducted by MORRISON HERSHFELD. Results have not been verified by testing.

GOVERNING DESIGN COMPONENT TABLE LEGEND

ACRONYM	DESCRIPTION
ATR	Adaptor fastener connection to bracket (horizontal orientation only)
ATR	Rail fastener connection to adaptor (horizontal orientation only)
Bracket	Aluminum bracket
BTS	Fastener connection of bracket-to-substrate
BTS-D	Fastener connection of bracket-to-substrate at double bracket (vertical only)
BTS-S	Fastener connection of bracket-to-substrate at single bracket (vertical only)
D-Bracket	Aluminum dead load bracket (double) (vertical only)
Rail	Rail governs (either deflection or stress)
Rail-D	Rail to bracket fastener connection at double (dead load) bracket (vertical only)
Rail-S	Rail to bracket fastener connection at single (wind load) bracket (vertical only)
S-Bracket	Aluminum wind load bracket (single)



KXH - Horizontal Rail Orientation
 Substrate: 18 Ga. Stud (33 ksi)
 Rail Size: Alum L-60x40x2.0

MAXIMUM UNFACTORED WIND LOAD (PSF)

Dead Load (psf)	I, S _w , S _h , S _w (in)	Bracket Sizes (mm)																								
		40 mm leg in bracket		60 mm leg in bracket		90		120		150		180		210		240		270								
		16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32				
2	24	25	16	10	6	11	24	15	11	23	15	10	23	14	10	22	14	9	22	13	9	21	13	8		
	36	16	10	6	11	7	15	9	6	15	9	6	14	8	5	14	8	5	13	7	8	7	7	6		
	48	11	7	7	11	7	11	6	6	10	6	8	7	7	5	9	7	7	6	6	6	6	6	6		
3	24	24	15	9	9	24	15	11	23	14	10	23	14	9	22	13	9	21	12	8	21	12	7	19	10	6
	36	15	9	8	15	9	6	14	8	14	8	13	7	9	8	7	7	12	7	7	12	6	11	5	10	6
	48	11	6	6	11	6	10	6	9	7	7	6	6	6	6	6	6	5	5	5	7	7	7	7	6	6
4	24	23	14	9	23	14	10	22	13	9	21	12	8	20	12	7	19	11	6	19	10	5	18	9	17	8
	36	14	8	5	14	8	5	13	7	12	7	12	6	11	6	10	5	9	9	9	9	9	9	9	8	8
	48	10	5	5	10	5	9	8	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
5	24	22	13	9	22	13	9	21	12	8	20	11	7	19	10	6	18	9	17	8	16	7	14	6	6	
	36	13	7	7	13	7	12	6	11	5	10	5	9	8	7	6	6	6	6	6	6	6	6	6	6	
	48	9	6	6	9	6	8	6	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
8	24	20	11	6	20	11	6	18	9	16	7	14	5	13	11	11	11	11	9	9	9	9	9	7	7	
	36	11	6	6	11	6	10	6	9	7	7	7	5	5	5	5	5	5	5	5	5	5	5	5	5	
	48	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	

GOVERNING DESIGN COMPONENT

Dead Load (psf)	I, S _w , S _h , S _w (in)	Bracket Sizes (mm)																							
		40 mm leg in bracket		60 mm leg in bracket		90		120		150		180		210		240		270							
		16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32			
2	24	BTS	BTS	Rail	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	36	BTS	BTS	Rail	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	48	BTS	BTS	Rail	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
3	24	BTS	BTS	Rail	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	36	BTS	BTS	Rail	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	48	BTS	BTS	Rail	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
4	24	BTS	BTS	Rail	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	36	BTS	BTS	Rail	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	48	BTS	BTS	Rail	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
5	24	BTS	BTS	Rail	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	36	BTS	BTS	Rail	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	48	BTS	BTS	Rail	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
8	24	BTS	BTS	Rail	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	36	BTS	BTS	Rail	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	48	BTS	BTS	Rail	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS

TABLE NOTES

The design wind loads above are based on the following:

- Analysis of the bracket, rail and mechanical attachments are in general accordance with NBCC 2015 using Limit States Design (LSD)
- Bracket: Kladfix KXH Single Bracket - Aluminum 6063-T6; F_y = 200 MPa
- Adaptor: Kladfix KXH Adaptor - Aluminum 6063-T6; F_y = 200 MPa
- Adaptor to Bracket & to Aluminum Rail Fastener: SDA5 #12 x 7/8" Full SS 316 Self-driller Screw
- Adaptor to Steel Rail Fastener: Generic #12-14 x 1" Full SS 316 Self-driller Screw
- Metal Stud Anchor: SFS Br-Metal Self-Drilling SD2 1/4-1/4 x 2" Screw (CCR-0387)
- Concrete Anchor: 1/4" x 2-1/4" (1 1/4" embed) Tapcon Screw Anchor (ESR-2202)
- CMU Anchor: 1/4" x 2" Tapcon Screw Anchor (ESR-1671)
- Vertical and horizontal rail deflection limited to L/360

The table above is intended to provide estimated design wind loads and is for advice and guidance based on NBCC 2015 and must be verified by a licensed engineer of record in the state or province where the product is to be installed. Analysis of the bracket, rail and mechanical attachments was conducted by MORRISON HERSHFELD. Results have not been verified by testing.

GOVERNING DESIGN COMPONENT TABLE LEGEND

ACRONYM	DESCRIPTION
AB	Adaptor fastener connection to bracket (horizontal orientation only)
ATR	Rail fastener connection to adaptor (horizontal orientation only)
Bracket	Aluminum bracket
BTS	Fastener connection of bracket-to-substrate
BTS-D	Fastener connection of bracket-to-substrate at double bracket (vertical only)
BTS-S	Fastener connection of bracket-to-substrate at single bracket (vertical only)
D-Bracket	Aluminum dead load bracket (double) (vertical only)
Rail	Rail governs (either deflection or stress)
Rail-D	Rail to bracket fastener connection at double (dead load) bracket (vertical only)
Rail-S	Rail to bracket fastener connection at single (wind load) bracket (vertical only)
S-Bracket	Aluminum wind load bracket (single)



KXH - Horizontal Rail Orientation
 Substrate: 18 Ga. Stud (33 ksi)
 Rail Size: Steel L-60x40x1.27

MAXIMUM UNFACTORED WIND LOAD (PSF)

Dead Load (psf)	Bracket Sizes (mm)																																
	40 mm leg in bracket		60 mm leg in bracket		90		120		150		180		210		240		270																
	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32															
2	24	25	16	11	24	15	11	24	15	11	23	15	10	23	14	10	22	13	9	21	13	8											
3	36	16	10	7	16	10	7	15	9	6	15	9	6	14	8	5	14	8	7	13	7	8											
4	48	11	7	11	7	11	7	11	7	8	8	7	8	7	7	7	7	6	6	6	6	6											
5	60	9	5	9	5	24	15	11	23	14	10	23	14	9	22	13	9	21	12	8	21	12	7	20	11	7	19	10	6				
6	36	15	9	6	15	9	6	14	8	14	8	14	8	13	7	13	7	12	6	12	6	12	6	11	5	11	5	10	6				
7	48	11	6	11	6	11	6	10	6	10	6	9	6	9	6	8	6	8	6	8	6	7	6	7	6	7	6	6	6	6			
8	60	8	8	8	8	8	8	8	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
9	24	23	14	10	23	14	10	22	13	9	21	12	8	20	12	7	19	11	6	19	10	5	18	9	17	8	8	8	8	8	8		
10	36	14	8	5	14	8	5	13	7	12	6	11	6	10	5	10	5	9	9	9	9	9	9	9	9	9	9	9	9	9	9		
11	48	10	5	10	5	10	5	9	6	9	6	8	6	8	6	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
12	60	7	7	7	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
13	24	22	13	9	22	13	9	21	12	8	20	11	7	19	10	6	18	9	17	8	17	8	16	7	14	6	14	6	14	6	14	6	
14	36	13	7	13	7	13	7	12	6	11	5	10	5	10	5	9	9	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
15	48	9	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
16	60	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
17	24	20	11	6	20	11	6	18	9	16	7	14	5	14	5	13	13	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	
18	36	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
19	48	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

GOVERNING DESIGN COMPONENT

Dead Load (psf)	Bracket Sizes (mm)																																
	40 mm leg in bracket		60 mm leg in bracket		90		120		150		180		210		240		270																
	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32															
2	24	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	
3	36	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	
4	48	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	
5	60	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	
6	24	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	
7	36	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	
8	48	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
9	60	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS

TABLE NOTES

The design wind loads above are based on the following:

- Analysis of the bracket, rail and mechanical attachments are in general accordance with NBCC 2015 using Limit States Design (LSD)
- Bracket: Kladfix KXH Single Bracket - Aluminum 6063-T6; Fy = 200 MPa
- Adaptor to Bracket & to Aluminum Rail Fastener: SDA5 #12 x 7/8" Full SS 316 Self-driller Screw
- Adaptor to Bracket & to Aluminum Rail Fastener: SDA5 #12 x 7/8" Full SS 316 Self-driller Screw
- Adaptor to Steel Rail Fastener: Generic #12-14 x 1" Full SS 316 Self-driller Screw
- Metal Stud Anchor: SFS Br-Metal Self-Drilling SD2 1/4-1/4 x 2" Screw (OCRR-0387)
- Concrete Anchor: 1/4" x 2-1/4" (1 1/4" embed) Tapcon Screw Anchor (ESR-2202)
- CMU Anchor: 1/4" x 2" Tapcon Screw Anchor (ESR-1671)
- Vertical and horizontal rail deflection limited to L/360

The table above is intended to provide estimated design wind loads and is for advice and guidance based on NBCC 2015 and must be verified by a licensed engineer of record in the state or province where the product is to be installed. Analysis of the bracket, rail and mechanical attachments was conducted by MORRISON HERSHFELD. Results have not been verified by testing.

GOVERNING DESIGN COMPONENT TABLE LEGEND

ACRONYM	DESCRIPTION
A/B	Adaptor fastener connection to bracket (horizontal orientation only)
A/R	Rail fastener connection to adaptor (horizontal orientation only)
Bracket	Aluminum bracket
BTS	Fastener connection of bracket-to-substrate
BTS-D	Fastener connection of bracket-to-substrate at double bracket (vertical only)
BTS-S	Fastener connection of bracket-to-substrate at single bracket (vertical only)
D-Bracket	Aluminum dead load bracket (double) (vertical only)
Rail	Rail governs (either deflection or stress)
R/B-D	Rail to bracket fastener connection at double (dead load) bracket (vertical only)
R/B-S	Rail to bracket fastener connection at single (wind load) bracket (vertical only)
S-Bracket	Aluminum wind load bracket (single)



KXH - Horizontal Rail Orientation
 Substrate: Concrete Wall
 Rail Size: Alum L-60x40x2.0

MAXIMUM UNFACTORED WIND LOAD (PSF)

Dead Load (psf)	Bracket Sizes (mm)																								
	40 mm leg in bracket		60		90		120		150		60 mm leg in bracket		180	210	240	270									
2	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32							
	24	41	18	10	55	36	19	55	36	19	55	36	19	48	31	19	35	23	17	26	17	13	21	14	10
3	36	27	12	6	36	23	11	36	23	11	36	23	11	31	20	11	17	11	8	14	9	6	10	9	6
	48	20	9	26	17	8	26	17	8	26	17	8	23	15	8	13	6	10	6	10	6	6	10	6	6
4	60	16	7	21	12	5	21	12	5	21	12	5	17	11	5	13	8	5	10	6	10	6	10	6	10
	24	41	18	9	54	35	17	54	35	17	54	35	17	47	30	17	34	22	16	26	17	12	21	13	10
5	36	27	11	8	35	21	9	35	21	9	35	21	9	30	19	9	22	14	9	17	10	7	13	8	6
	48	20	8	25	15	6	25	15	6	25	15	6	22	14	6	16	10	6	12	7	5	10	6	6	6
8	60	16	6	20	11	20	11	20	11	20	11	20	11	17	11	12	8	9	6	6	6	7	7	7	7
	24	41	17	9	53	33	15	53	33	15	53	33	15	46	29	15	33	21	15	25	16	11	20	13	9
3	36	26	11	5	34	19	8	34	19	8	34	19	8	29	19	8	21	13	8	16	10	7	13	8	5
	48	19	8	24	13	24	13	24	13	24	13	24	13	21	13	9	15	9	11	7	9	9	9	5	5
4	60	15	6	19	9	19	9	19	9	19	9	19	9	16	9	12	7	7	7	7	7	7	7	7	7
	24	40	17	9	52	31	13	52	31	13	52	31	13	45	29	13	33	21	13	25	15	11	20	12	8
5	36	26	10	33	18	6	33	18	6	33	18	6	29	18	6	21	13	6	15	9	6	12	7	7	7
	48	19	5	23	11	23	11	23	11	23	11	23	11	20	11	8	11	8	8	8	8	8	8	8	8
6	60	15	7	18	7	18	7	18	7	18	7	18	7	15	7	11	8	8	8	8	8	8	8	8	8
	24	39	15	7	48	25	7	48	25	7	48	25	7	42	25	7	30	18	7	23	14	7	18	11	7
8	36	25	9	30	12	30	12	30	12	30	12	30	12	26	12	18	10	7	14	7	9	7	7	7	7
	48	18	6	20	12	20	12	20	12	20	12	20	12	18	12	12	9	9	9	9	9	9	9	9	9
6	60	14	15	15	15	15	15	15	15	15	15	15	15	13	13	9	9	9	6	6	6	6	6	6	6

GOVERNING DESIGN COMPONENT

Dead Load (psf)	Bracket Sizes (mm)																							
	40 mm leg in bracket		60		90		120		150		60 mm leg in bracket		180	210	240	270								
2	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32						
	24	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
3	36	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
	48	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
4	60	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
	24	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
5	36	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
	48	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
8	60	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
	24	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
3	36	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
	48	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
4	60	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
	24	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
5	36	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
	48	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
8	60	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket
	24	Rail	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	ATB	ATB	Rail	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket	Bracket

GOVERNING DESIGN COMPONENT TABLE LEGEND

ACRONYM	DESCRIPTION
ATB	Adaptor fastener connection to bracket (horizontal orientation only)
ATR	Rail fastener connection to adaptor (horizontal orientation only)
Bracket	Aluminum bracket
BTS	Fastener connection of bracket-to-substrate
BTS-D	Fastener connection of bracket-to-substrate at double bracket (vertical only)
BTS-S	Fastener connection of bracket-to-substrate at single bracket (vertical only)
D-Bracket	Aluminum dead load bracket (double) (vertical only)
Rail	Rail governs (either deflection or stress)
RTB-D	Rail to bracket fastener connection at double (dead load) bracket (vertical only)
RTB-S	Rail to bracket fastener connection at single (wind load) bracket (vertical only)
S-Bracket	Aluminum wind load bracket (single)

TABLE NOTES

The design wind loads above are based on the following:

- Analysis of the bracket, rail and mechanical attachments are in general accordance with NBCC 2015 using Limit States Design (LSD)
- Bracket: Kladfix KXH Single Bracket - Aluminum 6063-T6; Fy = 200 MPa
- Adaptor to Bracket & to Aluminum Rail Fastener: SDA5 #12 x 7/8" Full SS 316 Self-driller Screw
- Adaptor to Steel Rail Fastener: Generic #12-14 x 1" Full SS 316 Self-driller Screw
- Metal Stud Anchor: SFS Br-Metal Self-Drilling SD2 1/4-1/4 x 2" Screw (OCRR-0387)
- Concrete Anchor: 1/4" x 2-1/4" (1 1/4" embed) Tapcon Screw Anchor (ESR-2202)
- CMU Anchor: 1/4" x 2" Tapcon Screw Anchor (ESR-1671)
- Vertical and horizontal rail deflection limited to L/360

The table above is intended to provide estimated design wind loads and is for advice and guidance based on NBCC 2015 and must be verified by a licensed engineer of record in the state or province where the product is to be installed. Analysis of the bracket, rail and mechanical attachments was conducted by MORRISON HERSHFELD. Results have not been verified by testing.



KXH - Horizontal Rail Orientation
 Substrate: Concrete Wall
 Rail Size: Steel L-60x40x1.27

MAXIMUM UNFACTORED WIND LOAD (PSF)

Dead Load (psf)	Bracket Sizes (mm)																										
	40 mm leg in bracket			60 mm leg in bracket			90 mm leg in bracket			120 mm leg in bracket			150 mm leg in bracket			180 mm leg in bracket			210 mm leg in bracket			240 mm leg in bracket			270 mm leg in bracket		
2	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32
	24	33	22	16	48	32	24	48	32	24	48	32	24	48	32	24	48	32	24	48	32	24	48	32	24	48	32
	36	22	14	11	32	21	16	32	21	16	32	21	16	32	21	16	32	21	16	32	21	16	32	21	16	32	21
3	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32
	24	33	22	16	48	32	24	48	32	24	48	32	24	48	32	24	48	32	24	48	32	24	48	32	24	48	32
	36	22	14	11	32	21	16	32	21	16	32	21	16	32	21	16	32	21	16	32	21	16	32	21	16	32	21
4	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32
	24	33	22	16	48	32	24	48	32	24	48	32	24	48	32	24	48	32	24	48	32	24	48	32	24	48	32
	36	22	14	11	32	21	16	32	21	16	32	21	16	32	21	16	32	21	16	32	21	16	32	21	16	32	21
5	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32
	24	33	22	16	48	32	24	48	32	24	48	32	24	48	32	24	48	32	24	48	32	24	48	32	24	48	32
	36	22	14	11	32	21	16	32	21	16	32	21	16	32	21	16	32	21	16	32	21	16	32	21	16	32	21
8	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32
	24	33	22	16	48	32	24	48	32	24	48	32	24	48	32	24	48	32	24	48	32	24	48	32	24	48	32
	36	22	14	11	32	21	16	32	21	16	32	21	16	32	21	16	32	21	16	32	21	16	32	21	16	32	21

GOVERNING DESIGN COMPONENT

Dead Load (psf)	Bracket Sizes (mm)																											
	40 mm leg in bracket			60 mm leg in bracket			90 mm leg in bracket			120 mm leg in bracket			150 mm leg in bracket			180 mm leg in bracket			210 mm leg in bracket			240 mm leg in bracket			270 mm leg in bracket			
2	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	
	24	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR
	36	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR
3	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	
	24	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR
	36	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR
4	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	
	24	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR
	36	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR
5	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	
	24	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR
	36	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR
8	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	
	24	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR
	36	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR	ATR

TABLE NOTES

The design wind loads above are based on the following:

- Analysis of the bracket, rail and mechanical attachments are in general accordance with NBCC 2015 using Limit States Design (LSD)
- Bracket: Kladfix KXH Single Bracket - Aluminum 6063-T6; Fy = 200 MPa
- Adaptor to Bracket & to Aluminum Rail Fastener: SDA5 #12 x 7/8" Full SS 316 Self-driller Screw
- Adaptor to Bracket & to Aluminum Rail Fastener: SDA5 #12 x 7/8" Full SS 316 Self-driller Screw
- Adaptor to Steel Rail Fastener: Generic #12-14 x 1" Full SS 316 Self-driller Screw
- Metal Stud Anchor: SFS Br-Metal Self-Drilling SD2 1/4-1/4 x 2" Screw (OCRR-0387)
- Concrete Anchor: 1/4" x 2-1/4" (1 1/4" embed) Tapcon Screw Anchor (ESR-2202)
- CMU Anchor: 1/4" x 2" Tapcon Screw Anchor (ESR-1671)
- Vertical and horizontal rail deflection limited to L/360

The table above is intended to provide estimated design wind loads and is for advice and guidance based on NBCC 2015 and must be verified by a licensed engineer of record in the state or province where the product is to be installed. Analysis of the bracket, rail and mechanical attachments was conducted by MORRISON HERSHFELD. Results have not been verified by testing.

GOVERNING DESIGN COMPONENT TABLE LEGEND

ACRONYM	DESCRIPTION
ATB	Adaptor fastener connection to bracket (horizontal orientation only)
ATR	Rail fastener connection to adaptor (horizontal orientation only)
Bracket	Aluminum bracket
BTS	Fastener connection of bracket-to-substrate
BTS-D	Fastener connection of bracket-to-substrate at double bracket (vertical only)
BTS-S	Fastener connection of bracket-to-substrate at single bracket (vertical only)
D-Bracket	Aluminum dead load bracket (double) (vertical only)
Rail	Rail governs (either deflection or stress)
RTB-D	Rail to bracket fastener connection at double (dead load) bracket (vertical only)
RTB-S	Rail to bracket fastener connection at single (wind load) bracket (vertical only)
S-Bracket	Aluminum wind load bracket (single)



KXH - Horizontal Rail Orientation

Substrate: CMU
Rail Size: Alum L-60x40x2.0

MAXIMUM UNFACTORED WIND LOAD (PSF)

Dead Load (psf)	I, S _w , S _h , → (in)	Bracket Sizes (mm)																							
		40 mm leg in bracket				60 mm leg in bracket				150 mm leg in bracket				270 mm leg in bracket											
		16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32			
2	24	20	13	9	20	13	9	19	12	8	18	11	8	18	11	7	18	10	7	17	10	6	17	9	6
	36	13	8	5	13	8	5	12	7	8	11	6	11	6	7	10	5	10	6	10	5	6	9	6	6
	48	9	5	5	9	5	5	8	6	6	8	5	6	7	6	7	7	6	7	6	6	6	6	6	6
3	24	19	11	8	19	11	8	18	11	7	17	10	6	17	9	5	15	8	15	7	15	7	14	7	7
	36	11	7	7	11	7	7	10	5	9	10	5	9	9	8	9	8	9	7	9	7	7	7	7	7
	48	8	6	6	8	6	6	7	6	6	6	5	6	6	5	6	5	6	5	6	5	5	5	5	5
4	24	18	10	7	18	10	7	17	10	6	16	9	15	8	14	7	13	6	12	5	12	5	12	5	12
	36	10	6	6	10	6	6	10	6	9	8	8	8	8	7	7	7	6	7	5	7	5	7	5	7
	48	7	7	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
5	24	17	9	6	17	9	6	16	8	14	7	13	6	12	6	11	11	10	9	10	9	10	9	9	9
	36	9	9	9	9	9	9	8	8	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	6
	48	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
8	24	14	6	6	14	6	6	12	12	10	10	8	8	8	6	6	6	6	6	6	6	6	6	6	6
	36	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	48	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

GOVERNING DESIGN COMPONENT

Dead Load (psf)	I, S _w , S _h , → (in)	Bracket Sizes (mm)																							
		40 mm leg in bracket				60 mm leg in bracket				150 mm leg in bracket				270 mm leg in bracket											
		16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32
2	24	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	36	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	48	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
3	24	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	36	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	48	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
4	24	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	36	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	48	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
5	24	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	36	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	48	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
8	24	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	36	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	48	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS

TABLE NOTES

The design wind loads above are based on the following:

- Analysis of the bracket, rail and mechanical attachments are in general accordance with NBCC 2015 using Limit States Design (LSD)
- Bracket: Kladfix KX01 Single Bracket - Aluminum 6063-T6; F_y = 200 MPa
- Adaptor: Kladfix KXH Adaptor - Aluminum 6063-T6; F_y = 200 MPa
- Adaptor to Bracket & to Aluminum Rail Fastener: SDA5 #12 x 7/8" Full SS 316 Self-driller Screw
- Adaptor to Steel Rail Fastener: Generic #12-14 x 1" Full SS 316 Self-driller Screw
- Metal Stud Anchor: SFS Br-Metal Self-Drilling SD2 1/4-14 x 2" Screw (CCR-0387)
- Concrete Anchor: 1/4" x 2-1/4" (1 1/4" embed) Tapcon Screw Anchor (ESR-2202)
- CMU Anchor: 1/4" x 2" Tapcon Screw Anchor (ESR-1671)
- Vertical and horizontal rail deflection limited to L/360

The table above is intended to provide estimated design wind loads and is for advice and guidance based on NBCC 2015 and must be verified by a licensed engineer of record in the state or province where the product is to be installed. Analysis of the bracket, rail and mechanical attachments was conducted by MORRISON HERSHFIELD. Results have not been verified by testing.

GOVERNING DESIGN COMPONENT TABLE LEGEND

ACRONYM	DESCRIPTION
ATB	Adaptor fastener connection to bracket (horizontal orientation only)
ATR	Rail fastener connection to adaptor (horizontal orientation only)
Bracket	Aluminum bracket
BTS	Fastener connection of bracket-to-substrate
BTS-D	Fastener connection of bracket-to-substrate at double bracket (vertical only)
BTS-S	Fastener connection of bracket-to-substrate at single bracket (vertical only)
D-Bracket	Aluminum dead load bracket (double) (vertical only)
Rail	Rail governs (either deflection or stress)
RTB-D	Rail to bracket fastener connection at double (dead load) bracket (vertical only)
RTB-S	Rail to bracket fastener connection at single (wind load) bracket (vertical only)
S-Bracket	Aluminum wind load bracket (single)



KXH - Horizontal Rail Orientation

Substrate: CMU

Rail Size: Steel L-60x40x1.27

MAXIMUM UNFACTORED WIND LOAD (PSF)

Dead Load (psf)	I, S _w , S _h , S _w (in)	Bracket Sizes (mm)																				
		40 mm leg in bracket				60 mm leg in bracket				150 mm leg in bracket												
		60	90	120	150	180	210	240	270	60	90	120	150	180	210	240	270					
2	24	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32	16	24	32			
	36	20	13	9	20	13	9	19	12	8	18	11	7	18	10	7	17	10	6	17	9	6
	48	9	5	5	9	5	5	12	7	6	11	6	6	10	5	10	6	6	6	6	6	6
	60	7	7	7	6	6	6	6	6	6	5	5	5	7	7	6	6	6	6	6	6	6
3	24	19	11	8	18	11	7	17	10	6	17	9	5	15	8	15	7	14	7	14	7	7
	36	11	7	7	11	6	10	5	9	6	9	5	8	9	8	7	7	7	7	7	7	7
	48	8	8	8	8	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	60	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
4	24	18	10	7	18	10	6	16	9	6	15	8	7	14	7	13	6	12	5	12	5	12
	36	10	6	6	10	6	10	6	9	8	8	8	7	7	6	6	6	5	5	5	5	5
	48	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	60	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
5	24	17	9	6	17	9	6	14	7	6	13	6	12	11	11	10	9	9	9	9	9	9
	36	9	9	9	9	8	8	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6
	48	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	60	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
8	24	14	6	6	14	6	6	10	10	10	8	8	6	6	6	6	6	6	6	6	6	6
	36	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	48	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	60	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

GOVERNING DESIGN COMPONENT

Dead Load (psf)	I, S _w , S _h , S _w (in)	Bracket Sizes (mm)																				
		40 mm leg in bracket				60 mm leg in bracket				150 mm leg in bracket												
		60	90	120	150	180	210	240	270	60	90	120	150	180	210	240	270					
2	24	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	36	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	48	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	60	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
3	24	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	36	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	48	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	60	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
4	24	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	36	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	48	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	60	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
5	24	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	36	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	48	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	60	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
8	24	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	36	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	48	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS
	60	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS	BTS

TABLE NOTES

The design wind loads above are based on the following:

- a) Analysis of the bracket, rail and mechanical attachments are in general accordance with NBCC 2015 using Limit States Design (LSD)
- b) Bracket: Kladfix KXH Single Bracket - Aluminum 6063-T6; F_y = 200 MPa
- c) Adaptor to Bracket & to Aluminum Rail Fastener: SDA5 #12 x 7/8" Full SS 316 Self-driller Screw
- d) Adaptor to Bracket & to Aluminum Rail Fastener: SDA5 #12 x 7/8" Full SS 316 Self-driller Screw
- e) Metal Stud Anchor: SFS Br-Metal Self-Drilling SD2 1/4-14 x 2" Screw (OCRR-0387)
- f) Concrete Anchor: 1/4" x 2-1/4" (1 1/4" embed) Tapcon Screw Anchor (ESR-2202)
- g) CMU Anchor: 1/4" x 2" Tapcon Screw Anchor (ESR-1671)
- h) Vertical and horizontal rail deflection limited to L/360
- i) The table above is intended to provide estimated design wind loads and is for advice and guidance based on NBCC 2015 and must be verified by a licensed engineer of record in the state or province where the product is to be installed.
- j) Analysis of the bracket, rail and mechanical attachments was conducted by MORRISON HERSHFELD. Results have not been verified by testing.

GOVERNING DESIGN COMPONENT TABLE LEGEND

ACRONYM	DESCRIPTION
AB	Adaptor fastener connection to bracket (horizontal orientation only)
ATR	Rail fastener connection to adaptor (horizontal orientation only)
Bracket	Aluminum bracket
BTS	Fastener connection of bracket-to-substrate
BTS-D	Fastener connection of bracket-to-substrate at double bracket (vertical only)
BTS-S	Fastener connection of bracket-to-substrate at single bracket (vertical only)
D-Bracket	Aluminum dead load bracket (double) (vertical only)
Rail	Rail governs (either deflection or stress)
RTB-D	Rail to bracket fastener connection at double (dead load) bracket (vertical only)
RTB-S	Rail to bracket fastener connection at single (wind load) bracket (vertical only)
S-Bracket	Aluminum wind load bracket (single)