

FastBridge[™] Clip Design Tables

Technical Services: 888-437-3244 Engineering Services: 877-832-3206 Sales: 800-543-7140 clarkdietrich.com

INSTALLAT		QUIREM	ENTS FOR LA	TERAL PRES				ng Distance	from 4-ft to	8-ft
Stud Section	Stud Thickness	FastBridge	5psf	10psf	La 20psf	teral Pressure (psf) a 25psf	nd Bracing Distance 30psf	(ft) 35psf	40psf	50psf
	mil (ga.)	Type	4' 5' 6' 7' 8'	4' 5' 6' 7' 8'	4' 5' 6' 7' 8'	4' 5' 6' 7' 8'	4' 5' 6' 7' 8'		4' 5' 6' 7' 8'	
362S162	20 (33) 18 (43) 16 (54)	FB43	1*	1*	1*2*	1* 2*	2*	2*	2* -	2*
	16 (54) 14 (68)	FB68	1*	1*	1*	1*	1*	1*	1* 2*	1* 2*
	12 (97) 20 (33)			2*		-	-			
362S200	18 (43) 16 (54)	FB43	1*	1*	1* 2*	2*	2*	2*	2* -	2*
	16 (54) 14 (68) 12 (97)	FB68	1*	1*	1*	1*	1* 2*	1* 2*	1* 2*	1* 2*
362\$250	20 (33) 18 (43) 16 (54)	FB43	1*	1* 2*	2*	2*	2* -	2*	2*	2*
	16 (54) 14 (68) 12 (97)	FB68	1*	1*	1*	1* 2*	1* 2*	2*	1* 2*	2*
400\$162	20 (33) 18 (43) 16 (54)	FB43	1*	1*	1* 2*	2*	2*	2*	2*	2*
	16 (54) 14 (68) 12 (97)	FB68	1*	1*	1*	1*	1*	1*	1* 2*	1* 2*
400\$200	20 (33) 18 (43) 16 (54)	FB43	1*	1*	2* 1*	2*	2*	2*	2*	2*
4003200	16 (54) 14 (68) 12 (97)	FB68	1*	1*	1*	1*	1* 2*	1*2*	1* 2*	2*
400S250	20 (33) 18 (43) 16 (54)	FB43	1*	1*	2*	2*	2*	2*	2*	2*
4003230	16 (54) 14 (68) 12 (97)	FB68	1*	1*	1*	1* 2*	1* 2*	1* 2*	2*	2* -
600S162	20 (33) 18 (43) 16 (54)	FB43	1*	1*	1* 2*	1* 2*	1* 2*	2*	2*	2*
0003102	16 (54) 14 (68) 12 (97)	FB68	1*	1*	1*	1*	1*	1*	1*	1* 2*
600\$200	20 (33) 18 (43) 16 (54)	FB43	1*	1*	1* 2*	2*	2*	2*	2* -	2*
6005200	16 (54) 14 (68) 12 (97)	FB68	1*	1*	1*	1* 2*	1*	1* 2*	1*	2*
600\$250	20 (33) 18 (43) 16 (54)	FB43	1*	1* 2*	2*	2*	2*	2*	2*	2*
6005250	16 (54) 14 (68) 12 (97)	FB68	1*	1*	1*	1* 2*	1* 2*	2*	2* 1*	2* - 1* 2*
800S162	18 (43) 16 (54)	FB43	1*	1*	1* 2*	1*	1*	2* 1*	2* 1*	1* 2*
	16 (54) 14 (68) 12 (97)	FB68	1*	1*	1*	1*	1*	1*	1*	1*
800\$200	18 (43) 16 (54)	FB43	1*	1*	2* 1*	2* 1*	2* 1*	2*	1* 2*	2* -
	16 (54) 14 (68) 12 (97)	FB68	1*	1*	1*	1*	1*	1*	2* 1*	2*
800S250	18 (43) 16 (54)	FB43	1*	1*	2* 1*	1* 2*	1* 2*	2* -	2* -	2*
	16 (54) 14 (68) 12 (97)	FB68	1*	1*	1*	1*	2* 1*	1*	1*	2*

Installation Requirement Notes:

- "1*" indicates that one #10 screw used with FB43 or FB68 FastBridge Clip provides adequate torsional restraint to the stud for the designated lateral design pressure and brace spacing.
- "2*" indicates that two #10 screw used with FB43 or FB68 FastBridge Clip provides adequate torsional restraint to the stud for the designated lateral design pressure and brace spacing.
- Blank portions of the table indicates that FB43 or FB68 FastBridge Clip do not provide adequate torsional restraint to the stud for the designated lateral design pressure and brace spacing.
- The table is for ASD lateral pressure.
- Lateral pressure to be derived using load combinations of the applicable building code
 - For IBC 2012 wind pressures are at design level and must be multiplied by 0.6 for ASD load combinations.
 - o For IBC 2009 and earlier building codes, wind pressures are at working stress levels and may be used directly for design.



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INICTALLAT	ION DE	OLUBEM	ENTS FOR LA	TEDAL DDEC	CLIDE OF STI	IDS at 24" a	a with Brasi	na Diatanaa	from 1 ft to	o f4
INSTALLAT	Stud	QUIKEIVI	ENTS FOR LA	TEKAL PRES			c. with Braci		rom 4-rt to	8-π
Stud Section	Thickness	FastBridge	5psf	10psf	20psf	25psf	30psf	35psf	40psf	50psf
	mil (ga.)	Type	4' 5' 6' 7' 8'	4' 5' 6' 7' 8'	4' 5' 6' 7' 8'		4' 5' 6' 7' 8'	4' 5' 6' 7' 8'	4' 5' 6' 7' 8'	4' 5' 6' 7' 8'
362S162	20 (33) 18 (43)	FB43	1*	1*	2*	2* -	2* -	2* -	2*	2*
	16 (54)	10.0		1	1*	<u>'</u>				2*
	16 (54)	FD.C0	4.*	4.*	2*	2*	1* 2*	L. L		- L
	14 (68) 12 (97)	FB68	1*	1*	1*	1*	1*	1* 2*	2*	2*
362S200	20 (33)					-		2*		
	18 (43)	FB43	1*	1* 2*	2* -	2*	- 2*	2*	2*	-
	16 (54) 16 (54)				2*			-	-	
	14 (68)	FB68	1*	1*	1*	1* 2*	1* 2*	1* 2*	2*	2* -
<u> </u>	12 (97) 20 (33)		2*							
	18 (43)	FB43	1*	2*	2* -	-	-	-	-	-
362S250	16 (54)			1*		2*	2*	2*		
	16 (54) 14 (68)	FB68	1*	1*	1* 2*	2*	2*	2*	2* -	
	12 (97)	1 500	1	1		1* 2			2	2*
	20 (33)			2*	-	-		-		
	18 (43) 16 (54)	FB43	1*	1*	2*	2*	2*	2*	-	2*
400S162	16 (54)				1	2*	2*	2*	-	
	14 (68)	FB68	1*	1*	1*	1*	1*		1* 2*	2*
	12 (97) 20 (33)			2*				2*	2*	1*
	18 (43)	FB43	1*		2* -	2* -	2*		-	-
400S200	16 (54)			1*				2*	2*	
	16 (54) 14 (68)	FB68	1*	1*	1* 2*	1* 2*	1* 2*	2*	2* -	2* -
	12 (97)			_				1*	1*	
	20 (33)	FB43	1*	2*	2* -	2*	2*			
	18 (43) 16 (54)	FB43	1*	1*	2*	2*	2*	-	-	-
400S250	16 (54)					-	-			
	14 (68) 12 (97)	FB68	1*	1*	1*2*	1* 2*	2*	2* -	2*	2*
	20 (33)				-	-		-	-	2
	18 (43)	FB43	1*	1*	1* 2*					-
600S162	16 (54) 16 (54)				2*	2*	2*	2*	2*	2*
	14 (68)	FB68	1*	1*	1*	1*	1*			2*
	12 (97)							1*	1*	1* 2*
	20 (33) 18 (43)	FB43	1*	1* 2*	2*	2*	_	_	_	_
600S200	16 (54)	1010	4	_			2*	2*	2*	2*
0003200	16 (54)	FDCO	1*	4*	1* 2*	1* 2*	2*	- 2*		2* -
	14 (68) 12 (97)	FB68	1*	1*	1*	1"	1*	1*	1*	1* 2*
	20 (33)				_			•		
	18 (43) 16 (54)	FB43	1*	1* 2*	2*	2*	2*	2*	2*	-
600S250	16 (54)			1	2*	2*	-	-	2*	2*
	14 (68)	FB68	1*	1*	1*		2*	2*	-	-
	12 (97) 18 (43)				2* -	2* -	2* -	1*	1* 2*	1* 2*
800S162	16 (54)	FB43	1*	1*	1*	1* 2*	1* 2*	1* 2*	1* 2*	2*
	16 (54)	FDCO	1*	4*	1*	2*	2*	2*	2*	
	14 (68) 12 (97)	FB68	1*	1*	1*	1*	1*	1*	1*	1*
	18 (43)	FB43	1*	2*	2*	2*	2*	2*		2*
8006200	16 (54)	1 543	±	1*	1* 2*	1* 2*	1* 2 -		2* 2* -	-
800S200	16 (54) 14 (68)	FB68	1*	1*	1*	1*	1*	2*	2*	2*
	12 (97)							1*	1*	1*
	18 (43)	FB43	1*	2* 1*	2* 1*	2*	2*	2*	2* -	- 7
800S250	16 (54) 16 (54)			1	2*	2*	2* -	-	-	-
	14 (68)	FB68	1*	1*	•			2*	2*	2*
Installation Requi	12 (97)				1*	1*	1*	1*	1*	1*

Installation Requirement Notes:

- "1*" indicates that one #10 screw used with FB43 or FB68 FastBridge Clip provides adequate torsional restraint to the stud for the designated lateral design pressure and brace spacing.
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- Blank portions of the table indicates that FB43 or FB68 FastBridge Clip do not provide adequate torsional restraint to the stud for the designated lateral design pressure and brace spacing.
- The table is for ASD lateral pressure
- Lateral pressure to be derived using load combinations of the applicable building code
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 - o For IBC 2009 and earlier building codes, wind pressures are at working stress levels and may be used directly for design.



Clark Dietrich (FB43) FastBridge™ Clip Load Tables

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FB43: FastBridge Connectors Stud Thickness, mils (ga) **FastBridge Stud Depth Allowable Connector** No. of Model (in) Capacity **Screws** 33 (20) 43 (18) 54 (16) 1140 2270 **Axial Brace Stiffness** 1 1330 (lbs/in) 2 1220 1480 2270 **Axial Brace Strength** 1 178 210 273 **FB43** 3.625 2 275 424 (lbs) 318 1 148 208 **Torsional Moment** 182 2 (in-lbs) 331 430 556 **Axial Brace Stiffness** 1 1030 1460 2170 2 3030 (lbs/in) 1190 1520 **Axial Brace Strength** 1 191 213 263 **FB43** 4.00 2 426 (lbs) 283 321 1 137 182 234 **Torsional Moment** 2 (in-lbs) 403 403 498 **Axial Brace Stiffness** 1 790 990 1730 2 (lbs/in) 990 1160 1930 1 214 290 107 **Axial Brace Strength FB43** 6.00 2 450 (lbs) 263 324 **Torsional Moment** 1 166 170 172 2 (in-lbs) 296 406 567 **Axial Brace Stiffness** 1 750 1910 2 (lbs/in) 750 1960 **Axial Brace Strength** 1 212 272 **FB43** 8.00 2 302 438 (lbs) **Torsional Moment** 1 152 343 (in-lbs) 2 461 526

FB Connector Allowable Table Notes:

- Allowable loads are based on the use of cold-formed steel studs with a minimum yield strength, Fy=33 ksi and tensile strength, Fu=45 ksi for 43-mil (18-ga) or thinner and a minimum yield strength, Fy=50 ksi and tensile strength, Fu=65 ksi for 54 mil (16-ga) or thicker.
- Allowable loads are based on 54-mil (16-ga) u-channel bridging with a minimum yield strength, Fy=33 ksi and tensile strength, Fu=45 ksi.
- Allowable loads are for the bridging connection only. The strength and serviceability of the framing members is the responsibility of the designer.
- Allowable loads are based on #10 self-drilling screws with a nominal diameter of 0.190-in and a washer diameter of 0.375-in. Fasteners must have a minimum nominal shear strength of, Pss=1718-lbs and a nominal tensile strength of, Pts = 2654 lbs.
- Allowable loads may not be increased for wind or seismic load.
- Allowable loads are for use when using ASD design methodology. For LRFD loads, multiply ASD allowable loads by 1.6.
- Allowable brace loads are based on ultimate test loads divided by a safety factor. Serviceability limits are not considered. Brace stiffness requirements are detailed in AISI S100 Section D3.3.
- Axial brace stiffness values apply to both ASD and LRFD designs.



(FB68) FastBridge[™] Clip Load Tables

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FB68: FastBridge Connectors									
FastBridge	Ctud Donth	Allowable Connector	No. of Screws	Stud Thickness, mils (ga)					
Model	Stud Depth (in)	Capacity		54 (16)	68 (14)	97 (12)			
		Axial Brace Stiffness	1	3410	4410	6270			
		(lbs/in)	2	4010	6880	7585			
FB68	3.625	Axial Brace Strength	1	465	520	573			
FD00		(lbs)	2	665	732	823			
		Torsional Moment	1	332	440	435			
		(in-lbs)	2	735	894	1150			
		Axial Brace Stiffness	1	3060	3440	6740			
	4.00	(lbs/in)	2	3710	4670	8960			
FB68		Axial Brace Strength	1	475	505	505			
FBUO		(lbs)	2	676	752	878			
		Torsional Moment	1	382	462	564			
		(in-lbs)	2	724	802	938			
	6.00	Axial Brace Stiffness	1	2270	3240	3200			
		(lbs/in)	2	2710	3870	3530			
FB68		Axial Brace Strength	1	468	506	515			
1 008		(lbs)	2	682	788	885			
		Torsional Moment	1	294	412	670			
		(in-lbs)	2	686	758	1004			
	8.00	Axial Brace Stiffness	1	1940	2500	2530			
		(lbs/in)	2	1960	2810	3015			
FB68		Axial Brace Strength	1	463	510	517			
ГДОО		(lbs)	2	637	747	898			
		Torsional Moment	1	310	512	674			
		(in-lbs)	2	682	788	963			

FB Connector Allowable Table Notes:

- Allowable loads are based on the use of cold-formed steel studs with a minimum yield strength, Fy=33 ksi and tensile strength, Fu=45 ksi for 43-mil (18-ga) or thinner and a minimum yield strength, Fy=50 ksi and tensile strength, Fu=65 ksi for 54 mil (16-ga) or thicker.
- Allowable loads are based on 54-mil (16-ga) u-channel bridging with a minimum yield strength, Fy=33 ksi and tensile strength, Fu=45 ksi.
- Allowable loads are for the bridging connection only. The strength and serviceability of the framing members is the responsibility of the designer.
- Allowable loads are based on #10 self-drilling screws with a nominal diameter of 0.190-in and a washer diameter of 0.375-in. Fasteners must have a minimum nominal shear strength of, Pss=1718-lbs and a nominal tensile strength of, Pts = 2654 lbs.
- Allowable loads may not be increased for wind or seismic load.
- Allowable loads are for use when using ASD design methodology. For LRFD loads, multiply ASD allowable loads by 1.6.
- Allowable brace loads are based on ultimate test loads divided by a safety factor. Serviceability limits are not considered. Brace stiffness requirements are detailed in AISI S100 Section D3.3.
- Axial brace stiffness values apply to both ASD and LRFD designs.



FastBridge[™] Clip Design Examples

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Design Examples

Example-1: Exterior Bearing-Wall Stud

Input

- 2012 IBC (ASCE 7-10 & AISI S100-07 w/ S2-10 Supplement
- 800S200-68 (50-ksi) studs at 16" o.c., 10 ft. tall
- Bracing at 5-ft o.c. (Mid-point bracing)
- Nominal axial stud strength, Pn=6800 lbs (2008 AISI Manual, Table III-8)
- Distance from shear center to mid-plane of web, m=0.796-in (2008 AISI Manual, Table I-2)
- Wind Design Pressure = 25psf

Laterally-Loaded Stud Design

Design Load tributary to brace:

W=(0.6)(25)(16/12)(5) = 100 lbs

Note - IBC 2012 load combinations for ASD include a factor of 0.6 for wind loads.

Required flange force (AISI S100 Eq. D3.2.1-3)

P = 1.5(m/d)W = 1.5(0.796/8)100 = 14.93 lbs

Torsional Moment

M = P(d) = 14.93(8) = 119.4 in-lbs

From Allowable Loads Table for 8-in deep 68-mil stud,

Select FastBridge FB68 clip with One #10 fasteners

Allowable Torsional Moment = 512 in-lbs > 119.4 in-lbs OK

Axially-Loaded Stud Design

Required brace strength (AISI S100 Eq. D3.3-1)

P = 0.01(Pn) = 0.01(6800) = 68 lbs.

For ASD, divide by 1.5 (2008 AISI Cold-Formed Steel Design Manual, Pg. III-54)

(68)/(1.5) = 45.3 lbs.

Required brace stiffness (AISI S100 Eq. D3.3-2)

 $\beta = 2[4-(2/n)](Pn)/(L) = 2[4-(2/1)](6800)/(60) = 453 lbs/in$

From Allowable Loads Table for 8-in deep 68-mil stud,

Select FastBridge FB68 clip with One #10 fasteners

Allowable brace strength = 510 lbs > 68 lbs. OK

Brace stiffness = 2500 lbs/in > 453 lbs/in. OK

Example-2: Curtain-Wall Stud

Input

- 2012 IBC (ASCE 7-10 & AISI S100-07 w/ S2-10 Supplement
- 362S162-43 (33-ksi) studs at 16" o.c., 10 ft. tall
- Bracing at 5-ft o.c. (Mid-point bracing)
- Wind Design Pressure = 34psf

Select CDBS-FB clip using design table

ASD wind pressure:

P=(0.6)(34) = 20.4-psf

Note - IBC 2012 load combinations for ASD include a factor of 0.6 for wind loads.

For 362S162-43 stud with FastBridge FB43 connector, 20-psf wind pressure w/ 5-ft bracing distance, FastBridge FB43 with One-#10 fasteners OK

GENERAL NOTES:

- Bridging connectors may also be designed using Allowable Loads Tables
- Only lateral load has been included for clarity.
- Design of curtain wall studs should consider load combinations in accordance with the applicable building code.