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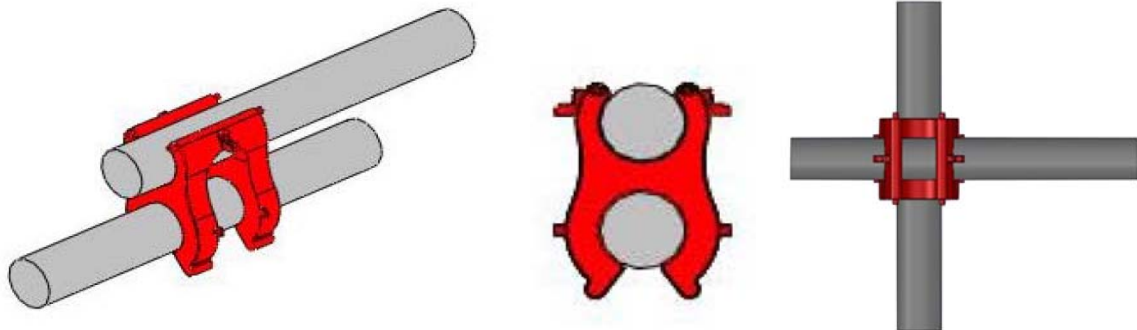


KODI KLIPTM
Rebar Connection Systems

PUBLIC TEST DATA

All testing was done at WORLD TESTING INC, an outside, independent Testing Lab. WTI uses test equipment that is calibrated with instruments and standards that are traceable to National Institute of Standards and Technology.

KLIP testing was performed in September through November of 2008 at WTI.



WORLD TESTING INC

72 E Hill Drive Mount Juliet, TN 37122 | Ph: 877.754.4147 | Web: www.worldtesting.com



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Rebar/ KLIP Size	Disengage		Slide Out		Racking*	
	Average	Minimum	Average	Minimum	Average	Minimum
#4	127	101	114	17	28	19
#5	209	99	154	63	N/A	N/A
#6	190	127	159	86	N/A	N/A

*Racking means force required to change from connection that is a 90 degree angle to a 70 degree angle

Various rebar materials were averaged.

KLIP Testing completed 9/19/08 at WORLD TESTING in Mt Juliet, TN.

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SLIDE OUT TESTING

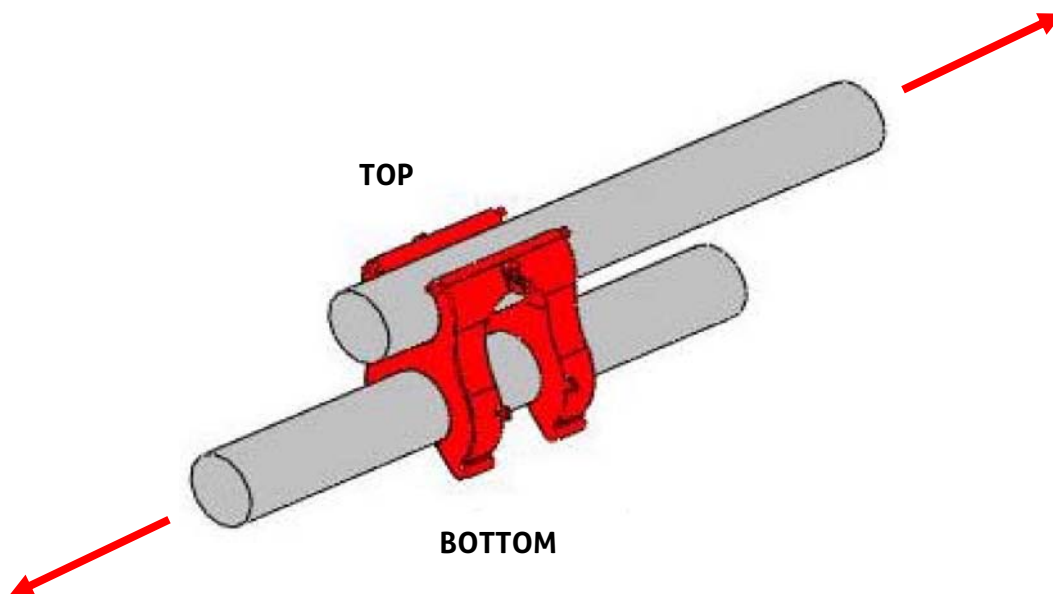


All Measurements in LBF

Force necessary to move the bar 3". This 3" specification comes from the American Concrete Institute standard # 117-06, 2.2.5 which states that the maximum variation in spacing for reinforcement bars is $\pm 3"$.

Rebar / KLIP Size	REBAR TYPE					
	Top	FRP	Steel	Coated	Average	Minimum
#4	68	39	35	47	31	
#5	79	68	37	61	31	
#6	N/A	97	35	66	34	

Rebar / KLIP Size	REBAR TYPE					
	Bottom	FRP	Steel	Coated	Average	Minimum
#4	81	100	33	71	17	
#5	95	121	77	98	64	
#6	N/A	188	96	142	86	



REMOVAL FORCE TEST

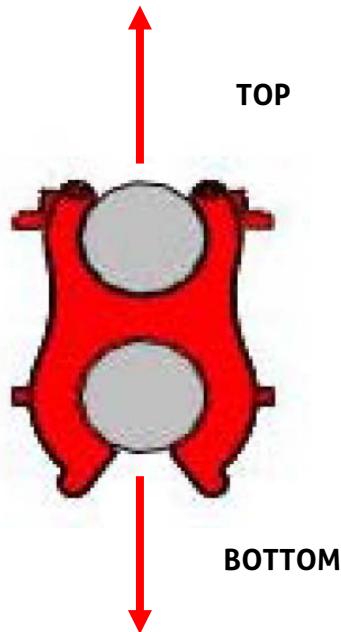


All Measurements in LBF

Rebar / KLIP Size	REBAR TYPE					
	Top	FRP	Steel	Coated	Average	Minimum
	#4	104	125	83	104	80
#5	237	222	141	200	103	
#6	N/A	207	151	179	138	

Rebar / KLIP Size	REBAR TYPE					
	Bottom	FRP	Steel	Coated	Average	Minimum
	#4	121	159	102	127	101
#5	253	222	152	209	99	
#6	N/A	226	154	190	127	

NB: Top and Bottom testing were not done at the same time, nor on the same KLIP.



ENGAGEMENT FORCE TEST



All Measurements in LBF

Rebar / KLIP Size	REBAR TYPE						
	Top	FRP	Steel	Coated	Average	Minimum	Maximum
#4	86	74	54	71	48	N/A	
#5	118	109	93	107	55	N/A	
#6	N/A	125	73	99	70	N/A	

Rebar / KLIP Size	REBAR TYPE						
	Bottom	FRP	Steel	Coated	Average	Minimum	Maximum
#4	241	262	144	216	131	N/A	
#5	408	447	230	362	158	N/A	
#6	N/A	547	344	459	327	N/A	

NB: Top and Bottom testing were not done at the same time, nor on the same KLIP.



TENSION FAILURE TEST

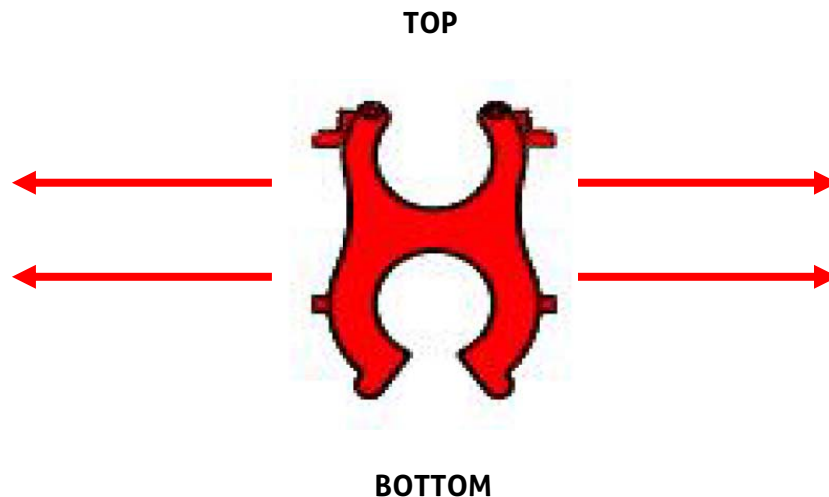


All Measurements in LBF

Rebar / KLIP Size	Top	Force
	#4	486
	#5	662
	#6	916

Rebar / KLIP Size	Bottom	Force
	#4	623
	#5	782
	#6	1148

NB: Top and Bottom testing were not done at the same time, nor on the same KLIP.



COMPRESSION FAILURE TEST

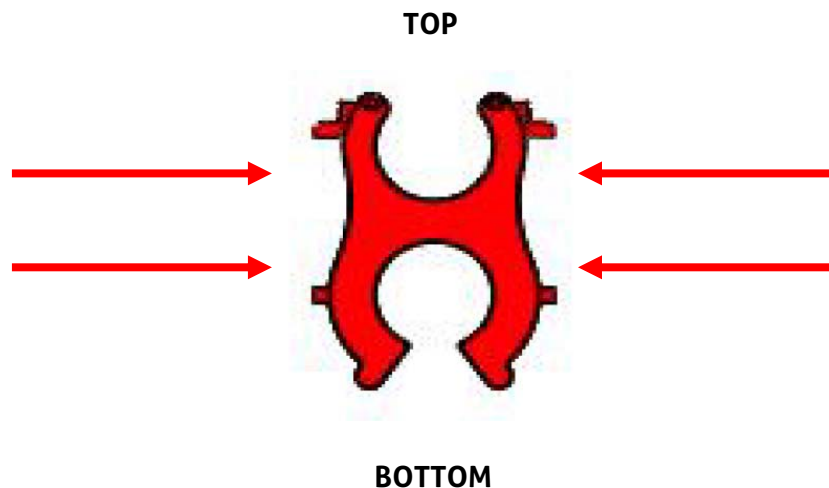


All Measurements in LBF

Rebar / KLIP Size	Top	Force
	#4	89
	#5	199
	#6	249

Rebar / KLIP Size	Bottom	Force
	#4	77
	#5	176
	#6	22


NB: Top and Bottom testing were not done at the same time, nor on the same KLIP.



KORNER KLIP TESTING



All Measurements in LBF

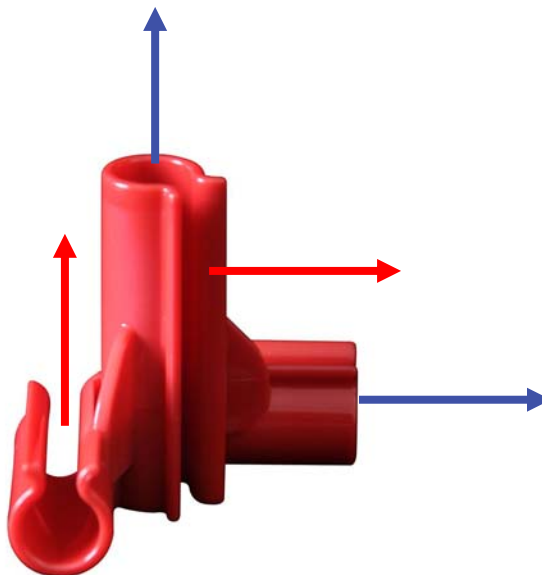
PULLOUT (Disengage) 

Rebar / KLIP Size		Average	Bare Steel	Coated Steel	All	Minimum	
		Vertical	#4	112	102	107	85
	Vertical	#5	129	97	113	84	
	Horizontal	#4	66	76	71	64	66%
		#5	89	78	84	75	74%

SLIDE OUT 

Rebar / KLIP Size		Average	Bare Steel	Coated Steel	All	Minimum	
		Vertical	#4	113	55	84	36
	Vertical	#5	116	177	147	110	
	Horizontal	#4	42	26	34	20	40%
		#5	39	146	93	38	63%

NB: Top and Bottom testing were not done at the same time, nor on the same KLIP.



RACKING TESTING



All Measurements in LBF

Rebar/ KLIP Size	Average	Minimum
#4	28	19
#5	N/A	N/A
#6	N/A	N/A

NB: Various rebar materials averaged.

