

## ASTM A307 & A325 BOLTS REQUIRED FOR DUCT RESTRAINT

Table A3.4-1; Horizontal Seismic Force Class System Designations

Horizontal Force Class	Horizontal Seismic Force Range per Force Class (lbs)
I	$0 \leq F_P \leq 250$
II	$250 < F_P \leq 500$
III	$500 < F_P \leq 1,000$
IV	$1,000 < F_P \leq 2,000$
V	$2,000 < F_P \leq 5,000$
VI	$5,000 < F_P \leq 10,000$

Table A3.6-2; ASTM A307 Bolts Required for Seismic Attachment for Steel Ducts

Bolt Size	1/4-20 UNC		3/8-16 UNC		1/2-13 UNC		5/8-11 UNC	
	Allow. Shear (LRFD) (lbs)	Min. Screws Req'd	Allow. Shear (LRFD) (lbs)	Min. Screws Req'd	Allow. Shear (LRFD) (lbs)	Min. Screws Req'd	Allow. Shear (LRFD) (lbs)	Min. Screws Req'd
I	426	2	1,063	2	1,966	2	3,152	2
II		2		2		2		
III		3		2		2		2
IV		5		2		2		2
V		12		5		3		2
VI		24		10		6		4

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# KINETICS™ Pipe & Duct Seismic Application Manual

Table A3.6-3; ASTM A325 Bolts Required for Seismic Attachment for Steel Ducts

Bolt Size	1/4-20 UNC		3/8-16 UNC		1/2-13 UNC		5/8-11 UNC	
Horizontal Force Class	Allow. Shear (LRFD) (lbs)	Min. Screws Req'd	Allow. Shear (LRFD) (lbs)	Min. Screws Req'd	Allow. Shear (LRFD) (lbs)	Min. Screws Req'd	Allow. Shear (LRFD) (lbs)	Min. Screws Req'd
I	1,089	2	2,717	2	5,025	2	8,055	2
II		2		2		2		
III		2		2		2		
IV		2		2		2		
V		5		2		2		
VI		10		4		2		

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