

# Porteous Fastener Company

## Product Information Sheet

### A325 Heavy Hex Structural Bolts



- PFC Product Categories: 00152, 00156 (U.S. made), & 00157
- Typical Material: Medium Carbon Steel
- Material and Mechanical Properties: Purchased to meet ASTM A325 Type 1
- Dimensions: ASME B18.2.6, Rolled Threads
- Hot-Dip Galvanized purchased to meet ASTM F2329
- Typical Hardness: HRC 25-34 on sizes 1/2 to 1 inch less than 2D in length and HRC 34 max 2D and greater in length; HRC 19-30 on sizes 1 1/8 to 1 1/2 inches less than 3D in length, HRC 30 max 3D and longer lengths.
- Tensile Strength: 120,000 PSI Minimum on sizes 1/2 to 1 inch; 105,000 PSI Minimum on sizes over 1 to 1 1/2 inches.
- For detailed information on structural bolting, please go to the Research Council on Structural Connections (RCSC) website at [www.boltcouncil.org](http://www.boltcouncil.org) where the RCSC Specification for Structural Joints Using High-Strength Bolts can be downloaded at no cost.

Minimum Tensile Strength - A325		
Size	PSI	Pounds
1/2-13	120,000	17,050
5/8-11	120,000	27,100
3/4-10	120,000	40,100
7/8-9	120,000	55,450
1-8	120,000	72,700
1 1/8-7	105,000	80,100
1 1/4-7	105,000	101,700
1 3/8-6	105,000	121,300
1 1/2-6	105,000	147,500

Bolt Size	Socket Size
1/2-13	7/8
5/8-11	1 1/16
3/4-10	1 1/4
7/8-9	1 7/16
1-8	1 5/8
1 1/8-7	1 13/16
1 1/4-7	2
1 3/8-6	2 3/16
1 1/2-6	2 3/8

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<b>Structural Bolt Max Grip / Min Body Length</b>									
Nominal Diameter	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8-6	1 1/2-6
Nominal length	Max/Min	Max/Min	Max/Min	Max/Min	Max/Min	Max/Min	Max/Min	Max/Min	Max/Min
Up to 1 1/4"	Full Thread	Full Thread	Full Thread	Full Thread	Full Thread	Full Thread	Full Thread	Full Thread	Full Thread
1 1/2	0.50/0.31	Full Thread	Full Thread	Full Thread	Full Thread	Full Thread	Full Thread	Full Thread	Full Thread
1 3/4	0.75/0.56	0.50/0.28	Full Thread	Full Thread	Full Thread	Full Thread	Full Thread	Full Thread	Full Thread
2	1.00/0.81	0.75/0.53	0.62/0.37	Full Thread	Full Thread	Full Thread	Full Thread	Full Thread	Full Thread
2 1/4	1.25/1.06	1.00/0.78	0.87/0.62	0.75/0.47	Full Thread	Full Thread	Full Thread	Full Thread	Full Thread
2 1/2	1.50/1.31	1.25/1.03	1.12/0.87	1.00/0.72	0.75/0.44	Full Thread	Full Thread	Full Thread	Full Thread
2 3/4	1.75/1.56	1.50/1.28	1.37/1.12	1.25/0.97	1.00/0.69	Full Thread	Full Thread	Full Thread	Full Thread
3	2.00/1.81	1.75/1.53	1.62/1.37	1.50/1.22	1.25/0.94	1.00/0.66	1.00/0.62	Full Thread	Full Thread
3 1/4	2.25/2.06	2.00/1.78	1.87/1.62	1.75/1.47	1.50/1.19	1.25/0.91	1.25/0.87	Full Thread	Full Thread
3 1/2	2.50/2.31	2.25/2.03	2.12/1.87	2.00/1.72	1.75/1.44	1.5/1.16	1.50/1.12	1.25/0.81	1.25/0.81
3 3/4	2.75/2.56	2.50/2.28	2.37/2.12	2.25/1.97	2.00/1.69	1.75/1.41	1.75/1.37	1.50/1.06	1.50/1.06
4	3.00/2.81	2.75/2.53	2.62/2.37	2.50/2.22	2.25/1.94	2.00/1.66	2.00/1.62	1.75/1.31	1.75/1.31
4 1/2	3.50/3.31	3.25/3.03	3.12/2.87	3.00/2.72	2.75/2.44	2.50/2.16	2.50/2.12	2.25/1.81	2.25/1.81
5	4.00/3.81	3.75/3.53	3.62/3.37	3.50/3.22	3.25/2.94	3.00/2.66	3.00/2.62	2.75/2.31	2.75/2.31
5 1/2	4.50/4.31	4.25/4.03	4.12/3.87	4.00/3.72	3.75/3.44	3.50/3.16	3.50/3.12	3.25/2.81	3.25/2.81
6	5.00/4.81	4.75/4.53	4.62/4.37	4.50/4.22	4.25/3.94	4.00/3.66	4.00/3.62	3.75/3.31	3.75/3.31
6 1/2	5.50/5.31	5.25/5.03	5.12/4.87	5.00/4.72	4.75/4.44	4.50/4.16	4.50/4.12	4.25/3.81	4.25/3.81
7	6.00/5.81	5.75/5.53	5.62/5.37	5.50/5.22	5.25/4.94	5.00/4.66	5.00/4.62	4.75/4.31	4.75/4.31
7 1/2	6.50/6.31	6.25/6.03	6.12/5.87	6.00/5.72	5.75/5.44	5.50/5.16	5.50/5.12	5.25/4.81	5.25/4.81
8	7.00/6.81	6.75/6.53	6.62/6.37	6.50/6.22	6.25/5.94	6.00/5.66	6.00/5.62	5.75/5.31	5.75/5.31
8 1/2	7.50/7.31	7.25/7.03	7.12/6.87	7.00/6.72	6.75/6.44	6.50/6.16	6.50/6.12	6.25/5.81	6.25/5.81
9	8.00/7.81	7.75/7.53	7.62/7.37	7.50/7.22	7.25/6.94	7.00/6.66	7.00/6.62	6.75/6.31	6.75/6.31
9 1/2	8.50/8.31	8.25/8.03	8.12/7.87	8.00/7.72	7.75/7.44	7.50/7.16	7.50/7.12	7.25/6.81	7.25/6.81
10	9.00/8.81	8.75/8.53	8.62/8.37	8.50/8.22	8.25/7.94	8.00/7.66	8.00/7.62	7.75/7.31	7.75/7.31

This table represents the grip / body lengths of standard Structural Bolts. To calculate thread length, subtract the Max/Min Grip Lengths from the nominal bolt length. This will give you the thread length. Please note the actual length of the cap screw will affect thread length calculations, but will not affect the grip / body length.

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<b>Length Tolerance for Structural Bolts</b>				
Nominal Bolt Size	1/2"	5/8"	3/4" through 1"	1 1/8" through 1 1/2"
Nominal Screw Length	Tolerance on Length			
Up to 6 inches	-0.12 (1/8")	-0.12 (1/8")	-0.19 (3/16")	-0.25 (1/4")
Over 6 inches	-0.19 (3/16")	-0.25 (1/4")	-0.25 (1/4")	-0.25 (1/4")

Note: Length tolerance on structural bolts is only a minus tolerance from nominal length.