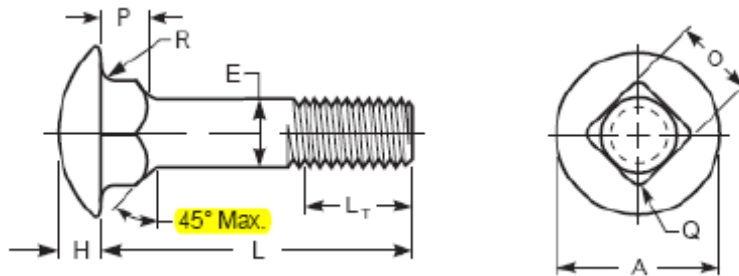




January 28, 2008

ASME B18.5 Round Head Square Neck Bolt Revision



On December 12, 2007 the American Society of Mechanical Engineers (ASME) subcommittee responsible for ASME B18.5 standard changed the angle on the bottom of the square neck to 45° Maximum for all bolt lengths. The revised standard will be published in the second half of 2008.

It came to the attention of the Industrial Fasteners Institute (IFI) in 2007 that errors were made in the ASME B18.5 illustrations for square necked fasteners where the 1990 illustration indicates “15° – 45°”.

The correct specification for this characteristic should be “45° Max.” as shown in the 1978 edition illustration. Current fastener manufacturing tool designs and heading techniques enable manufacturers to frequently make square neck bolts having corner-fill angles of less than 15°. See the new Table 2 on the next page.

The purpose of the square neck on the bolt is to prevent it from rotating while a nut is tightened on its threaded end. The smaller the corner-fill angle is, the more surface of the square is in contact with the mating material. The more the square is in contact with the mating material the greater is the bolt's resistance to turning. This change will not require any revision of the bolt manufacturing process or the applications in which these bolts are used.

Joe Greenslade
Director of Engineering Technology

INDUSTRIAL FASTENERS INSTITUTE

Website: www.indfast.org E-mail: techinfo@indfast.org



Technical Bulletin

ASME approved new Table 2 in B18.5 as of December 12, 2007.

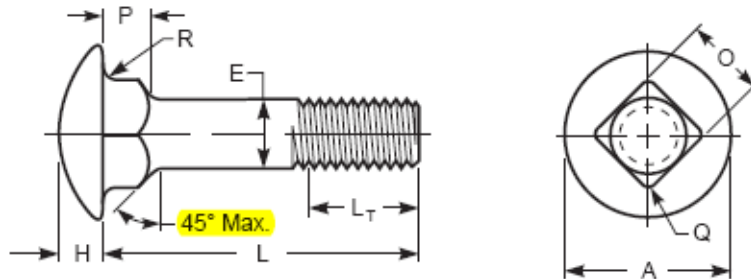


TABLE 2 DIMENSIONS OF ROUND HEAD SQUARE NECK BOLTS

Nominal Size ¹ or Basic Bolt Diameter	E		A		H		O		P		Q	R	
	Body Diameter		Head Diameter		Head Height		Square Width		Square Depth		Corner Radius on Square	Fillet Radius	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Max ²	
No. 10	0.1900	0.199	0.182	0.469	0.436	0.114	0.094	0.199	0.185	0.125	0.094	0.031	0.031
1/4	0.2500	0.260	0.237	0.594	0.563	0.145	0.125	0.260	0.245	0.156	0.125	0.031	0.031
5/16	0.3125	0.324	0.298	0.719	0.688	0.176	0.156	0.324	0.307	0.187	0.156	0.031	0.031
3/8	0.3750	0.388	0.360	0.844	0.782	0.208	0.188	0.388	0.368	0.219	0.188	0.047	0.031
7/16	0.4375	0.452	0.421	0.969	0.907	0.239	0.219	0.452	0.431	0.250	0.219	0.047	0.031
1/2	0.5000	0.515	0.483	1.094	1.032	0.270	0.250	0.515	0.492	0.281	0.250	0.047	0.031
5/8	0.6250	0.642	0.605	1.344	1.219	0.344	0.313	0.642	0.616	0.344	0.313	0.078	0.062
3/4	0.7500	0.768	0.729	1.594	1.469	0.408	0.375	0.768	0.741	0.408	0.375	0.078	0.062
7/8	0.8750	0.895	0.852	1.844	1.719	0.459	0.438	0.895	0.865	0.469	0.438	0.094	0.062
1	1.0000	1.022	0.976	2.094	1.969	0.531	0.500	1.022	0.990	0.531	0.500	0.094	0.062

GENERAL NOTE: For additional requirements refer to General Data.

NOTES:

- (1) Where specifying nominal size in decimals, zeros preceding decimal and in the fourth decimal place shall be omitted.
- (2) The minimum radius is one half of the value shown.

Disclaimer: All information provided in this document and/or presentation is based on data the Industrial Fasteners Institute believes to be reliable and accurate. Such information is intended for use by persons at their own discretion and risk. The information here in is based on industry standards and recognized practices. The Industrial Fasteners Institute and the representatives providing this material assume no responsibility for the content.

INDUSTRIAL FASTENERS INSTITUTE

Website: www.indfast.org E-mail: techinfo@indfast.org