

**Table 7-2**  
**Available Tensile**  
**Strength of Bolts, kips**

Nominal Bolt Diameter, <i>d</i> , in.			5/8		3/4		7/8		1	
Nominal Bolt Area, in. <sup>2</sup>			0.307		0.442		0.601		0.785	
Designation	<i>F<sub>nt</sub></i> /Ω (ksi)	Φ <i>F<sub>nt</sub></i> (ksi)	<i>r<sub>n</sub></i> /Ω	Φ <i>r<sub>n</sub></i>	<i>r<sub>n</sub></i> /Ω	Φ <i>r<sub>n</sub></i>	<i>r<sub>n</sub></i> /Ω	Φ <i>r<sub>n</sub></i>	<i>r<sub>n</sub></i> /Ω	Φ <i>r<sub>n</sub></i>
	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Group 120	45.0	67.5	13.8	20.7	19.9	29.8	27.1	40.6	35.3	53.0
Group 144	54.0	81.0	16.6	24.9	23.9	35.8	32.5	48.7	42.4	63.6
Group 150	56.5	84.8	17.3	26.0	25.0	37.4	34.0	51.0	44.4	66.6
Group 200	75.0	113	—	—	—	—	—	—	58.9	88.4
A307	22.5	33.8	6.90	10.4	9.94	14.9	13.5	20.3	17.7	26.5
Nominal Bolt Diameter, <i>d</i> , in.			1 1/8		1 1/4		1 3/8		1 1/2	
Nominal Bolt Area, in. <sup>2</sup>			0.994		1.23		1.48		1.77	
Designation	<i>F<sub>nt</sub></i> /Ω (ksi)	Φ <i>F<sub>nt</sub></i> (ksi)	<i>r<sub>n</sub></i> /Ω	Φ <i>r<sub>n</sub></i>	<i>r<sub>n</sub></i> /Ω	Φ <i>r<sub>n</sub></i>	<i>r<sub>n</sub></i> /Ω	Φ <i>r<sub>n</sub></i>	<i>r<sub>n</sub></i> /Ω	Φ <i>r<sub>n</sub></i>
	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Group 120	45.0	67.5	44.7	67.1	55.2	82.8	66.8	100	79.5	119
Group 144	54.0	81.0	53.7	80.5	66.3	99.4	80.2	120	95.4	143
Group 150	56.5	84.8	56.2	84.2	69.3	104	83.9	126	99.8	150
Group 200	75.0	113	74.6	112	92.0	138	—	—	—	—
A307	22.5	33.8	22.4	33.5	27.6	41.4	33.4	50.1	39.8	59.6
ASD	LRFD	— Indicates that this grade is unavailable in the given diameter.								
Ω = 2.00	Φ = 0.75	Group 120 includes ASTM F3125/F3125M Grades A325 and F1852 bolts.								
		Group 144 includes ASTM F3148 bolts.								
		Group 150 includes ASTM F3125/F3125M Grades A490 and F2280 bolts.								
		Group 200 includes ASTM F3043 and ASTM F3111.								