

Engineering Information

Safe Loads on Atuds and Bolts

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SAFE LOADS ON STUDS AND BOLTS			
G. General Engineering :			
Dia of safe Load that one stud or bolt stud or will carry (mild steel)			
Bolt Inch :	G	H	Lb
1/2	250	450	
5/8	500	900	
3/4	900	1790	
7/8	1500	2880	
1	2150	4240	
1.1/8	3000	5740	
1.1/4	4250	7650	
1.3/8	5500	9370	
1.1/2	7000	11600	
Safe Load on Foundations		Per Sq. Foot :	
Made Ground			1/2 ton
Soft Clay			1 ton
Hard Clay or Loam			2 to 4 ton
Dry Compact Sand			2 to 4 ton
Dry Coaree Gravel			3 to 7 ton
Ordinary Rock			3 ton
Continuation			
Hard Rock			9 ton
Loose beds with piling			1.82 ton
Loose beds with Concrete			2.75 ton
H. Hydrolic Engineering			
Dia of safe Load that one Stud or bolt Stud or will carry (mild steel)			
Bolt Inch :	G	H	Lb.
1.3/4	11,000	15,600	
2	16,000	20,800	
2.1/2	26,100	—	
3	38,100	—	
3.1/2	53,000	—	
4	70,100	—	
4.1/2	90,000	—	
5	113,000	—	
5.1/2	138,000	—	
Safe Load on Masonry :		Per Sq. Foot :	
Granite			30 ton
Limestone			15 ton
Sandstone			20 ton
Cement Concrete 5-1			15 ton
Cement Concrete 10-1			7.5 ton
Lime Concrete			2 to 4 ton
Brick in Motor			3.5 ton
Brick in Cement			8 to 12 ton
Rubble			3.5 ton

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PHYSICAL PROPERTIES OF METALS				
Element	Melting Point, °C	Specific Gravity	Specific Heat (Water —1)	Linear Coefficient of Expansion at 40°C x 10 ⁴ per °C
Aluminium	658.7	2.56	0.2089	0.2313
Antimony	630.0	6.70	0.0495	0.1152
Bismuth	271	9.76	0.0301	0.1346
Cadmium	320.9	8.7	0.0548	0.3069
Calcium	810	1.82	0.1453	—
Chromium	1553	7.0	0.10394	—
Cobalt	1480	8.74	0.1030	0.1236
Copper	1083	8.65	0.939	0.1678
Gold	1063	19.3	0.316	0.1443
Iron	1530	7.86	0.1338	0.1182
Lead	327.4	11.4	0.3150	0.2924
Megnesium	651	1.75	0.2456	0.2694
Manganese	1230	8.0	0.1072	0.228
Mercury	-38.9	13.6	0.0334	1.8200
Molybednum	2500	8.62	0.0659	0.0501
Nickel	1452	8.5	0.1034	0.1279
Palladium	1550	11.4	0.0592	0.1176
Phosphorous	44	1.83	0.189	—
Platinum	1755	22.15	0.0323	0.0899
Potassium	62.3	0.88	0.1876	0.8300
Rhodium	1950	12.1	0.05803	0.0850
Silicon	1420	2.3	0.2140	0.0763
Silver	960.5	10.55	0.0556	0.1921
Sodium	97.5	0.97	0.29305	0.7200
Sulphur	114	2.04	0.1844	—
Tantalum	2900	10.8	0.0301	0.0800
Tellerium	452	6.25	0.0525	1.680
Tin	231.9	7.3	0.0559	0.2234
Tungsten	2400	18.8	0.0336	0.0444
Vanadium	1720	5.5	0.1153	—
Zinc	419.4	7.0	0.0935	0.2918
Zirconium	1530	6.4	0.0660	—