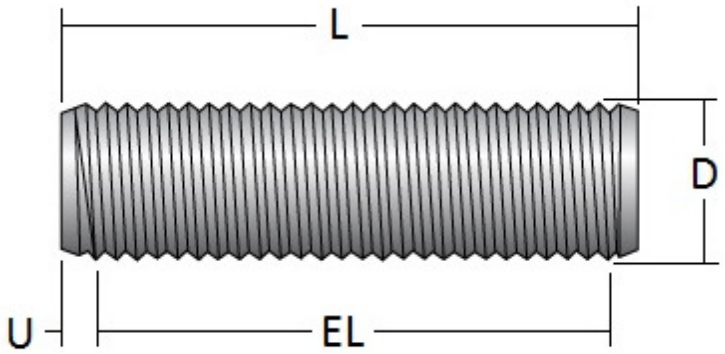
Stud Bolts, ASTM A320 / SA320 Grade L7, ASTM A194 Grade 7 Heavy Hex Nut



Nominal Size	D (inch)	
	Major Diameter	
	Min.	Max.
1/4"	.2408	.2489
5/16"	.3026	.3113
3/8"	.3643	.3737
7/16"	.4258	.4361
1/2"	.4876	.4985
9/16"	.5459	.5609
5/8"	.6112	.6233
3/4"	.7353	.7482
7/8"	.8592	.8731
1"	.9830	.9980
1-1/8"	1.1079	1.1229
1-1/4"	1.2329	1.2479
1-3/8"	1.3578	1.3728
1-1/2"	1.4828	1.4978

EL	
Effective Length	Tolerance
$\leq$ 12 inch	+/- 0.062"
12 $\leq$ 18 inch	+/- 0.125"
18 inch <	+/- 0.250"

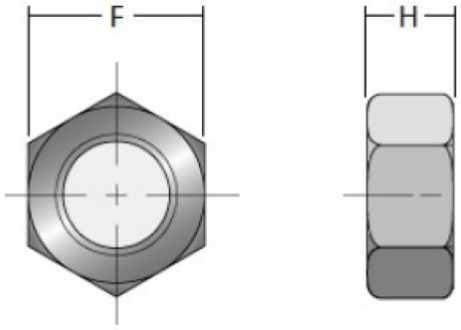
Stud Specification Requirements:

Mechanical & Chemical Properties:

Element	Min	Max
C (Carbon)	0.38%	0.48%
Cr (Chromium)	0.8%	1.1%
Mn (Manganese)	0.75%	1%
Mo (Molybdenum)	0.15%	0.25%
P (Phosphorus)		0.035%
S (Sulphur)		0.04%
Si(Silicon)	0.15%	0.35%

Mechanical Properties	Min	Max
Ultimate Tensile Strength (UTS)	860 MPa	
0.2% Proof Stress	725 MPa	
Elongation	16%	
Reduction of Area	50%	
Gauge Length	A50mm	
Hardness (Brinell)		321 HB
Hardness (Rockwell C)		35 HRC

- Thread Requirements: ASTM A320/A320M and ASME SA320/SA320M; L7
  ASME B1.1, 2A
  - UNC for all stud diameters 1” and smaller
  - UN8 for all stud diameters greater than 1”
- Finish: Xylan Coating
- Product Marking: In accordance with ASTM A320/A320M and ASME SA320/SA320M: Manufacturer ID and L7
  Grade and manufacturer’s ID marking applied to one end of studs larger than or equal to 3/8” nominal diameter;. Manufacturer ID may be placed on the other end if insufficient area



Nominal Size	F		H	
	Width Across Flats		Thickness	
	Max.	Min.	Max.	Min.
1/4	.500	.488	.250	.218
5/16	.562	.546	.314	.280
3/8	.688	.669	.377	.341
7/16	.750	.728	.441	.403
1/2	.875	.850	.504	.464
9/16	.938	.909	.568	.526
5/8	1.062	1.031	.631	.587
3/4	1.250	1.212	.758	.710
7/8	1.438	1.394	.885	.833
1	1.625	1.575	1.012	.956
1 1/8	1.812	1.756	1.139	1.079
1 1/4	2.000	1.938	1.251	1.187
1 3/8	2.188	2.119	1.378	1.310
1 1/2	2.375	2.300	1.505	1.433

Nut Specification Requirements:

- Dimensions: ASME B18.2.2 Heavy Hex
- Thread Requirements: ASME B1.1, 2B
  - UNC for all stud diameters 1” and smaller
  - UN8 for all stud diameters greater than 1”
- Nut Material & Mechanical Properties: Grade 7 of ASTM A194/A194M ;

Element	Min	Max
C (Carbon)	0.37%	0.49%
Mn (Manganese)	0.65%	1.1%
P (Phosphorus)	0.035%	
S (Sulphur)	0.04%	
Si (Silicon)	0.15%	0.35%
Cr (Chromium)	0.75%	1.2%
Mo (Molybdenum)	0.15%	0.25%

Mechanical Property	Min	Max
Proof Stress (120° Steel Cone)	1035 MPa	
Hardness (Brinell)	248	327
Hardness (Rockwell C)	24	35

- Nut Product Marking: Grade 7

- Finish: Xylan 1070 Coated ASTM A320 Grade L7 Stud bolt
  Xylan 1424 Coated ASTM A320 Grade L7 Stud bolt