

STOCK LIST

At Bergsen, Service is Our Primary Product



Bergsen
COLD FINISHED STEEL

www.bergsen.com

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12241 Florence Avenue, Santa Fe Springs, California 90670

AIRCRAFT ALLOY TOLERANCES

CARBON STEEL STOCK

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The following table lists the recommended minimum stock removal to assure freedom from non-metallic inclusions, according to AMS 2301 standards.

Hot Rolled Size (inches)	Minimum removal from the surface, inches (per each side)	Cold Drawn Size (inches)
-	0.030	1/4" to 1/2" incl
over 1/2" to 3/4" incl	0.045	over 1/2" to 11/16" incl.
over 3/4" to 1" incl	0.060	over 11/16" to 15/16" incl
over 1" to 1-1/2"	0.075	over 15/16" to 1-7/16" incl.
over 1-1/2" to 2" incl	0.090	over 1-7/16" to 1-15/16" inc
over 2" to 2-1/2" incl	0.125	over 1-15/16" to 2-7/16" inc
over 2-1/2" to 3-1/2" incl	0.156	over 2-7/16" to 3-3/8" incl.
over 3-1/2" to 4-1/2" incl	0.187	over 3-3/8" to 4-3/8" incl.
over 4-1/2" to 6" incl	0.250	
over 6" to 7-1/2" incl	0.312	
over 7-1/2" to 9" incl	0.375	

Pressed (Forged) Round Bars

The amount of metal to be removed from the surface of Carbon and Alloy Pressed Round Bars over 8" in diameter in order to obtain a finished size varies because consideration must be given to several factors, such as manufacturing practice, size of bar, length and straightness. As a guide, the usual allowances for bars 8' to 10' long are:

Diameters through 13".....1/2" on diameter, 1/4" on surface
 Diameters over 13" to 19".....5/8" on diameter, 5/16" on surface

Centerless Ground:

All ground bar should be "defect free" within the standard size tolerances of any manufacturing defects. (i.e. laps, seams and cracks).

Stock removal is recommended to below the standard size tolerances to remove any handling marks that may exist

EXAMPLE:

1-1/2" Rd. Tolerance is + or - .003"
 Material should not have any defect under -.003"

Rough Turned:

All "R/T" sizes larger than 2" are produced on the plus side and should be defect free on size.

Example: 5" Round HR-RT should be defect free at 5"

Note: Inspection prior to altering material is recommended

C1018*	1045 TG&P	
C-12L14*		
Stressproof (C-1144)	Stressrelieved (C-1144)	4140 C.F Annealed
C1215	1045 Cold Finished	Fatigue Proof

*Chemicals meet ASTM-A-108---(1010 Through 1215)
 StressRelieved/StressProof, Chemicals Meet ASTM-A-311 Class B
 Fatigue Proof, ASTM-A-108

Size Ranges
1018 Round = 1/8" - 24" (12' & 20' R/L)
1018 Square = 3/16" square - 6" square (12' R/L)
1018 Flats (thickness range = 1/8" - 5") (width range = 1/4" - 12") in 12' R/L
1018 Hex = 1/4" - 4" (12' R/L)
1144SR/1144SP = 1/4" Round - 6" Round (12' R/L)
12L14 = 1/8" Round - 9" Round (12' R/L)
1215 = 1/4" Round - 7-1/2" Round (12' R/L)
4140 Cold Finished Annealed = 1/4" Round - 24" Round (12' & 20' R/L)
1045TG&P = 1/2" - 8" Round (20/24' R/L)
1045 Cold Finished = 1/2" Round - 22" Round (20/24' R/L)

C1010 Strip (#2 Bright Finish, #2 Temper, #4 Round Edge)		
1/16" x 1/2"	3/32" x 1/2"	1/8" x 1/2"
1/16" x 3/4"	3/32" x 5/8"	1/8" x 5/8"
1/16" x 1"	3/32" x 3/4"	1/8" x 3/4"
1/16" x 1-1/2"	3/32" x 1"	1/8" x 1"
1/16" x 2"	3/32" x 1-1/2"	1/8" x 1-1/2"
	3/32" x 2"	1/8" x 2"

NOTE: INSPECTION PRIOR TO ALTERING MATERIAL IS ADVISABLE.

NOTE: IT IS NOT ADVISABLE TO TRY TO "FINISH" ON SIZE FROM THE SIZE PURCHASED

Straightness: Cold finished carbon steel bars are machine straightened within reasonable limits and are suitable for the majority of industrial uses. The degree of straightness is satisfactory for operation in an automatic screw machine.

CARBON STEEL TOLERANCES *

FOR COLD FINISHED CARBONS BARS AND SHAFTING

Size, Inches	Maximum of Carbon Range 0.28% or less	Maximum of Carbon Range over .028% to 0.55% Incl.	Fatigue-Proof Stressproof (C-1144)	Maximum of Carbon Range Over 0.55% or Heat Treated (all Carbons)
Minus	Minus	Minus	Minus	Minus
Squares -- Cold Drawn				
To 3/4" incl.....	0.002	0.004	0.005	0.007
Over 3/4" to 1-1/2" incl..	0.003	0.005	0.006	0.008
Over 1-1/2" to 2-1/2" incl..	0.004	0.006	0.007	0.009
Over 2-1/2" to 4" incl....	0.006	0.008	0.009	0.011
Over 4" to 6" incl.....	0.008	-	-	-
Flats -- Cold Finished				
Width, in inches	*The tolerance for flats apply to thickness as well as width			
To 3/4" Incl.....	0.003	-	-	-
Over 3/4" to 1-1/2" incl..	0.004	-	-	-
Over 1-1/2" to 3" incl....	0.005	-	-	-
Over 3" to 4" incl.....	0.006	-	-	-
Over 4" to 6" incl.....	0.008	-	-	-
Over 6".....	0.013	-	-	-
Rounds - Turned and Polished or Cold Drawn				
To 1-1/2" incl.....	0.002	0.003	0.004	0.005
Over 1-1/2" to 2-1/2" incl..	0.003	0.004	0.005	0.006
Over 2-1/2" to 4" incl....	0.004	0.005	0.006	0.007
Over 4" to 6" incl.....	0.005	0.006	0.007	0.008
Over 6" to 8" incl.....	0.006	0.007	0.008	0.009
Over 8" to 9" incl.....	0.007	-	-	-
Over 9" to 10" incl.....	0.008	-	-	-
Hexagons -- Cold Drawn				
To 3/4" incl.....	0.002	0.003	0.004	0.006
Over 3/4" to 1-1/2" incl...	0.003	0.004	0.005	0.007
Over 1-1/2" to 2-1/2" incl	0.004	0.005	0.006	0.008
Over 2-1/2" to 3-1/8" incl	0.005	0.006	0.007	0.009

Note: The tolerances for flats apply to thickness as well as width for cold finished flats.

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* ALL TOLERANCES ON THIS PAGE ARE A CLOSE APPROXIMATION BASD ON VARIOUS MILL MFG. PRACTICES

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Aircraft Alloys

4130	4130 Heat Treated	4140 Annealed
4330	H-11	4140 Normalized
8740	4340 Vac Melt Norm. Tempered	HY-TUF
Nitriding	4340 Norm./Temp.	52100
9310		

Super Alloys

A286	Nickel 200/400/405	K500
718	Nickel 600/625/800	X750
L605	Maraging 800	WASPALLOY
MP35N	MP159	

Electrical Steel

Invar	Kovar	4750
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Aluminum, Brass and Bronze also available - please inquire