

BRASS/BRONZE

GRADES STOCKED

SPECIFICATIONS		SPECIFICATIONS	
BRASS ALLOY 360, FREE CUTTING, 1/2 HARD	CHEMISTRY ONLY TO: ASTM-B-16 AND SAE CA - 360	NI-AL-BRZ (ALLOY C-630)	AMS-4640, ASTM-B-150, ASME-B-150, QQC-465 AMD. 1, COND. HR-50 APPLYS TO SIZES UNDER 3"

AUTOMATIC EXCEPTIONS TO THE SPECS LISTED ARE: LINE MARKING AND INSPECTION (I.E. MAG., SONIC, ETC.)

MACHINABILITY RATINGS

BRASS / BRONZE

GRADE	APPROXIMATE SURF. FT.	% RELATIVE SPEED BASED ON FM BRASS as 100%
C-360 1/2 HARD	100	-
Ni-Al-Brz	-	40

These machinability ratios must be recognized as approximate values.

BRASS

CHEMICAL ANALYSES — Maximum Unless Indicated

AISI	COPPER	LEAD	IRON	ZINC
C-360	60./63.	2.5/3.7	.35	Bal.

BRONZE

CHEMICAL ANALYSES — Maximum Unless Indicated

TYPE	Mn	Si	Ni + Co	Al	Fe	Cu + Ag	Zn	Sn	Pb
Ni-Al-Brz	1.5	.25	4./5.5	9./11.	2./4.	Bal.	.30	.20	.02

The above chart is a compilation of Aerospace, ASTM, Federal and Military specifications. It is for reference only and should not be used for design or specifications.



ROUNDS

STOCKED IN 12' R/L

Estimated Weight, Lbs.					Estimated Weight, Lbs.				
Size	Grade	Finish	Per Foot	12 Ft Bar	Size	Grade	Finish	Per Foot	12 Ft Bar
3/8"	NI-AL-BRZ (C-630)	C.F.	.360	4.320	1-5/8"	NI-AL-BRZ (C-630)	C.F.	6.740	80.880
7/16"	NI-AL-BRZ (C-630)	C.F.	.490	5.880	1-11/16"	NI-AL-BRZ (C-630)	C.F.	7.280	87.360
1/2"	NI-AL-BRZ (C-630)	C.F.	.640	7.680	1-3/4"	NI-AL-BRZ (C-630)	C.F.	7.830	93.960
17/32"	NI-AL-BRZ (C-630)	C.F.	.728	8.736	1-13/16"	NI-AL-BRZ (C-630)	C.F.	8.390	100.680
9/16"	NI-AL-BRZ (C-630)	C.F.	.810	9.720	1-7/8"	NI-AL-BRZ (C-630)	C.F.	8.980	107.760
19/32"	NI-AL-BRZ (C-630)	C.F.	.910	10.920	2"	NI-AL-BRZ (C-630)	C.F.	10.220	122.640
5/8"	NI-AL-BRZ (C-630)	C.F.	1.000	12.000	2-1/16"	NI-AL-BRZ (C-630)	C.F.	10.985	131.820
21/32"	NI-AL-BRZ (C-630)	C.F.	1.112	13.344	2-1/8"	NI-AL-BRZ (C-630)	C.F.	11.540	138.480
11/16"	NI-AL-BRZ (C-630)	C.F.	1.210	14.520	2-3/16"	NI-AL-BRZ (C-630)	C.F.	12.357	148.284
23/32"	NI-AL-BRZ (C-630)	C.F.	1.334	16.008	2-1/4"	NI-AL-BRZ (C-630)	C.F.	12.940	155.280
3/4"	NI-AL-BRZ (C-630)	C.F.	1.440	17.280	2-5/16"	NI-AL-BRZ (C-630)	C.F.	13.810	165.720
25/32"	NI-AL-BRZ (C-630)	C.F.	1.576	18.912	2-3/8"	NI-AL-BRZ (C-630)	C.F.	14.410	172.920
13/16"	NI-AL-BRZ (C-630)	C.F.	1.690	20.280	2-7/16"	NI-AL-BRZ (C-630)	C.F.	15.343	184.116
7/8"	NI-AL-BRZ (C-630)	C.F.	1.950	23.400	2-1/2"	NI-AL-BRZ (C-630)	C.F.	15.970	191.640
15/16"	NI-AL-BRZ (C-630)	C.F.	2.250	27.000	2-9/16"	NI-AL-BRZ (C-630)	C.F.	16.957	203.484
1"	NI-AL-BRZ (C-630)	C.F.	2.550	30.600	2-5/8"	NI-AL-BRZ (C-630)	C.F.	17.600	211.200
1-1/16"	NI-AL-BRZ (C-630)	C.F.	2.880	34.560	2-3/4"	NI-AL-BRZ (C-630)	C.F.	19.320	231.840
1-1/8"	NI-AL-BRZ (C-630)	C.F.	3.230	38.760	2-7/8"	NI-AL-BRZ (C-630)	C.F.	21.110	253.320
1-3/16"	NI-AL-BRZ (C-630)	C.F.	3.610	43.320	3"	NI-AL-BRZ (C-630) NI-AL-BRZ (C-630)	C.F. R.T.	22.990 22.990	275.880 275.880
1-1/4"	NI-AL-BRZ (C-630)	C.F.	4.000	48.000	3-1/8"	NI-AL-BRZ (C-630)	R.T.	25.220	302.640
1-5/16"	NI-AL-BRZ (C-630)	C.F.	4.400	52.800	3-1/4"	NI-AL-BRZ (C-630)	R.T.	27.080	324.960
1-3/8"	NI-AL-BRZ (C-630)	C.F.	4.830	57.960	3-3/8"	NI-AL-BRZ (C-630)	R.T.	29.410	352.920
1-7/16"	NI-AL-BRZ (C-630)	C.F.	5.280	63.360	3-1/2"	NI-AL-BRZ (C-630)	R.T.	31.400	376.800
1-1/2"	NI-AL-BRZ (C-630)	C.F.	5.750	69.000	3-5/8"	NI-AL-BRZ (C-630)	R.T.	33.930	407.160
1-9/16"	NI-AL-BRZ (C-630)	C.F.	6.260	75.120					

Finish: C.F. – Cold Finish
 R.T. – Rough Turned

ROUNDS

STOCKED IN 12' R/L

Estimated Weight, Lbs.					Estimated Weight, Lbs.				
Size	Grade	Finish	Per Foot	12 Ft Bar	Size	Grade	Finish	Per Foot	12 Ft Bar
3-3/4"	NI-AL-BRZ (C-630)	R.T.	36.050	432.600	5-1/4"	NI-AL-BRZ (C-630)	R.T.	71.180	854.160
3-7/8"	NI-AL-BRZ (C-630)	R.T.	38.780	465.360	5-1/2"	NI-AL-BRZ (C-630)	R.T.	80.840	970.080
4"	NI-AL-BRZ (C-630)	R.T.	41.020	492.240	6"	NI-AL-BRZ (C-630)	R.T.	92.290	1107.480
4-1/4"	NI-AL-BRZ (C-630)	R.T.	46.200	554.400	6-1/2"	NI-AL-BRZ (C-630)	R.T.	108.300	1299.600
4-3/8"	NI-AL-BRZ (C-630)	R.T.	49.430	593.160	7"	NI-AL-BRZ (C-630)	R.T.	125.600	1507.200
4-1/2"	NI-AL-BRZ (C-630)	R.T.	51.900	622.800	8"	NI-AL-BRZ (C-630)	R.T.	164.000	1968.000
4-5/8"	NI-AL-BRZ (C-630)	R.T.	55.240	662.880					
4-3/4"	NI-AL-BRZ (C-630)	R.T.	58.270	699.240					
5"	NI-AL-BRZ (C-630)	R.T.	64.100	769.200					



NOTE: IT IS NOT ADVISABLE TO TRY TO FINISH ON SIZE FROM THE SIZE PURCHASED.
 NOTE: BARS ARE NOT PERFECTLY ROUND, SQUARE, OR STRAIGHT.
 PLEASE REFER TO THE VARIOUS CHARTS IN THIS BOOK.

ROUNDS

STOCKED IN 12' R/L

Estimated Weight, Lbs.				Estimated Weight, Lbs.			
Size	Finish	Per Foot	12 Ft Bar	Size	Finish	Per Foot	12 Ft Bar
1/16"	C.F.	0.01	0.16	23/64"	C.F.	0.37	4.49
5/64"	C.F.	0.02	0.21	3/8"	C.F.	0.41	4.88
	C.T.	0.02	0.21		C.T.	0.41	4.88
3/32"	C.F.	0.03	0.30	.380"	C.F.	0.42	5.01
.100"	C.F.	0.03	0.35	25/64"	C.F.	0.44	5.29
7/64"	C.F.	0.03	0.42	13/32"	C.F.	0.48	5.74
1/8"	C.F.	0.05	0.54	27/64"	C.F.	0.51	6.18
	C.T.	0.05	0.54		C.T.	0.51	6.18
.130"	C.F.	0.05	0.59	7/16"	C.F.	0.55	6.65
9/64"	C.F.	0.06	0.69	C.T.	0.55	6.65	
	C.T.			0.55	6.65		
.144"	C.F.	0.06	0.72	.4425"	C.F.	0.57	6.80
5/32"	C.F.	0.07	0.85	29/64"	C.F.	0.59	7.13
11/64"	C.F.	0.09	1.03	15/32"	C.F.	0.64	7.63
3/16"	C.F.	0.10	1.22	31/64"	C.F.	0.68	8.15
	C.T.				0.10		
.1925"	C.F.	0.11	1.29	1/2"	C.F.	0.72	8.68
13/64"	C.F.	0.12	1.43	C.T.	0.72	8.68	
	C.T.			0.12	1.43		
7/32"	C.F.	0.14	1.66	.505"	C.F.	0.74	8.85
15/64"	C.F.	0.16	1.91	33/64"	C.F.	0.77	9.23
1/4"	C.F.	0.18	2.17	17/32"	C.F.	0.82	9.80
	C.T.			0.18	2.17		
.255"	C.F.	0.19	2.26	35/64"	C.F.	0.87	10.38
17/64"	C.F.	0.20	2.45	9/16"	C.F.	0.92	10.98
9/32"	C.F.	0.23	2.75	.5675"	C.F.	0.93	11.19
19/64"	C.F.	0.26	3.06	37/64"	C.F.	0.97	11.60
5/16"	C.F.	0.28	3.40	19/32"	C.F.	1.02	12.24
	C.T.			0.28	3.40		
.3175"	C.F.	0.29	3.50	39/64"	C.F.	1.07	12.89
21/64"	C.F.	0.31	3.74	5/8"	C.F.	1.13	13.56
11/32"	C.F.	0.34	4.10	.630"	C.F.	1.15	13.78
	C.T.			0.34	4.10		
				41/64"	C.F.	1.19	14.24
				21/32"	C.F.	1.25	15.00
				11/16"	C.F.	1.37	16.44

Finish: C.F. – Cold Finish
 C.T. – Close Tolerance (± .0005)

ROUNDS

STOCKED IN 12' R/L

Estimated Weight, Lbs.				Estimated Weight, Lbs.			
Size	Finish	Per Foot	12 Ft Bar	Size	Finish	Per Foot	12 Ft Bar
23/32"	C.F.	1.49	17.88	2-1/4"	C.F.	14.60	175.20
3/4"	C.F.	1.63	19.56	2-3/8"	C.F.	16.30	195.60
.755"	C.F.	1.65	19.79	2-1/2"	C.F.	18.10	217.20
25/32"	C.F.	1.77	21.24	2-5/8"	C.F.	19.90	238.80
13/16"	C.F.	1.91	22.92	2-3/4"	C.F.	21.90	262.80
27/32"	C.F.	2.06	24.68	3"	C.F.	26.00	312.00
7/8"	C.F.	2.22	26.64	3-1/8"	C.F.	28.30	339.60
.880"	C.F.	2.24	26.89	3-1/4"	C.F.	30.60	367.20
15/16"	C.F.	2.54	30.48	3-1/2"	C.F.	35.40	424.80
1"	C.F.	2.89	34.68	3-3/4"	C.F.	40.70	488.40
1.005"	C.F.	2.92	35.06	4"	C.F.	46.30	555.60
1-1/16"	C.F.	3.27	39.24	4-1/4"	C.F.	51.77	621.24
1-1/8"	C.F.	3.66	43.92	4-1/2"	C.F.	58.60	703.20
1-3/16"	C.F.	4.08	48.96	4-3/4"	C.F.	64.60	775.20
1-1/4"	C.F.	4.52	54.24	5"	C.F.	71.60	859.20
1-5/16"	C.F.	4.98	59.76	5-1/4"	C.F.	79.00	948.00
1-3/8"	C.F.	5.47	65.64	5-1/2"	C.F.	86.70	1040.40
1-7/16"	C.F.	5.98	71.76	6"	C.F.	103.00	1236.00
1-1/2"	C.F.	6.51	78.12	6-1/2"	C.F.	122.00	1464.00
1-9/16"	C.F.	7.06	84.72	7"	C.F.	142.00	1704.00
1-5/8"	C.F.	7.64	91.68	8"	C.F.	185.20	2222.40
1-11/16"	C.F.	8.24	98.88				
1-3/4"	C.F.	8.86	106.32				
1-13/16"	C.F.	9.51	114.12				
1-7/8"	C.F.	10.20	122.40				
1-15/16"	C.F.	10.90	130.80				
2"	C.F.	11.60	139.20				
2-1/8"	C.F.	13.06	156.72				

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

STOCKED IN 12' R/L



Estimated Weight, Lbs.				Estimated Weight, Lbs.			
Size	Finish	Per Foot	12 Ft Bar	Size	Finish	Per Foot	12 Ft Bar
1/8"	C.F.	0.05	0.60	13/16"	C.F.	2.11	25.32
5/32"	C.F.	0.08	0.93	7/8"	C.F.	2.44	29.28
3/16"	C.F.	0.11	1.34	15/16"	C.F.	2.72	32.66
7/32"	C.F.	0.15	1.84	1"	C.F.	3.19	38.28
1/4"	C.F.	0.20	2.39	1-1/16"	C.F.	3.60	43.20
9/32"	C.F.	0.25	3.02	1-1/8"	C.F.	4.04	48.48
5/16"	C.F.	0.31	3.74	1-1/4"	C.F.	4.99	59.88
11/32"	C.F.	0.38	4.52	1-5/16"	C.F.	5.50	66.00
3/8"	C.F.	0.45	5.39	1-3/8"	C.F.	6.03	72.36
13/32"	C.F.	0.53	6.32	1-7/16"	C.F.	6.59	79.08
7/16"	C.F.	0.61	7.33	1-1/2"	C.F.	7.18	86.16
15/32"	C.F.	0.70	8.41	1-5/8"	C.F.	8.43	101.16
1/2"	C.F.	0.80	9.58	1-3/4"	C.F.	9.77	117.24
17/32"	C.F.	0.90	10.81	2"	C.F.	12.80	153.60
9/16"	C.F.	1.01	12.12	2-1/4"	C.F.	15.68	188.61
5/8"	C.F.	1.25	15.00	2-1/2"	C.F.	19.36	232.32
11/16"	C.F.	1.51	18.12	3"	C.F.	28.69	344.28
3/4"	C.F.	1.80	21.60				



SQUARES

STOCKED IN 12' R/L



Estimated Weight, Lbs.				Estimated Weight, Lbs.			
Size	Finish	Per Foot	12 Ft Bar	Size	Finish	Per Foot	12 Ft Bar
1/8"	C.F.	0.06	0.069	13/16"	C.F.	2.43	29.16
3/16"	C.F.	0.13	1.56	7/8"	C.F.	2.82	33.84
1/4"	C.F.	0.23	2.76	1"	C.F.	3.68	44.16
5/16"	C.F.	0.36	4.32	1-1/8"	C.F.	4.62	55.44
3/8"	C.F.	0.52	6.22	1-1/4"	C.F.	5.70	68.40
7/16"	C.F.	0.70	8.46	1-1/2"	C.F.	8.21	98.52
1/2"	C.F.	0.92	11.05	1-3/4"	C.F.	11.30	135.60
9/16"	C.F.	1.17	14.04	2"	C.F.	14.70	176.40
5/8"	C.F.	1.44	17.28	2-1/2"	C.F.	23.00	279.00
11/16"	C.F.	1.74	20.88	3"	C.F.	33.12	397.44
3/4"	C.F.	2.07	24.84				

Finish: C.F. - Cold Finish
 EXT. - Extruded

FLATS

STOCKED IN 12' R/L

Estimated Weight, Lbs.				Estimated Weight, Lbs.					
Size	Finish	Per Foot	12 Ft Bar	Size	Finish	Per Foot	12 Ft Bar		
1/8" x 2"	C.F.	0.92	11.05	3/4" x 1-1/2"	C.F.	4.14	49.68		
1/4" x 1"	C.F.	0.92	11.05		2"	C.F.	5.53	66.31	
	C.F.	1.15	13.78		2-1/2"	C.F.	6.91	82.92	
	C.F.	1.38	16.58		3"	C.F.	8.29	99.47	
	C.F.	1.61	19.28		3-1/2"	C.F.	9.67	116.04	
	C.F.	1.84	22.10		4"	C.F.	11.05	132.60	
	C.F.	2.76	33.16		7/8" x 1"	C.F.	3.22	38.69	
	C.F.	3.68	44.16			1-1/4"	C.F.	4.03	48.36
5/16" x 3/4"	C.F.	.863	10.36			1-1/2"	C.F.	4.84	58.08
	C.F.	1.15	13.80			2"	C.F.	6.45	77.40
	C.F.	1.72	20.66	2-1/2"	C.F.	8.06	96.72		
3/8" x 3/4"	C.F.	1.04	12.44	3"	C.F.	9.67	116.04		
	C.F.	1.38	16.58	4"	C.F.	12.89	154.68		
	C.F.	1.72	20.65	1" x 1-1/4"	C.F.	4.59	55.08		
	C.F.	2.07	24.79		1-1/2"	C.F.	5.53	66.31	
	C.F.	2.76	33.16		2"	C.F.	7.37	88.42	
	C.F.	4.15	49.74		2-1/4"	C.F.	8.29	99.47	
	C.F.	5.53	66.31		2-1/2"	C.F.	9.21	110.52	
1/2" x 3/4"	C.F.	1.38	16.52		3"	C.F.	11.05	132.60	
	C.F.	1.84	22.10	3-1/2"	C.F.	12.89	154.73		
	C.F.	2.30	27.54	4"	C.F.	14.74	176.88		
	C.F.	2.76	33.16	6"	EXT.	22.06	264.72		
	C.F.	3.21	38.56	1-1/4" x 1-3/4"	C.F.	8.06	96.71		
	C.F.	3.68	44.21		2"	C.F.	9.21	110.52	
	C.F.	4.59	55.08		3"	C.F.	13.82	165.78	
	C.F.	5.53	66.31		4"	C.F.	18.42	221.04	
	C.F.	6.45	77.36	1-1/2" x 2"	C.F.	11.02	132.24		
	C.F.	7.37	88.42		2-1/2"	C.F.	13.82	165.78	
	5/8" x 3/4"	C.F.	1.73		20.70	3"	C.F.	16.56	198.36
C.F.		2.30	27.60		4"	C.F.	22.03	264.36	
C.F.		2.88	34.56	6"	EXT.	33.09	397.08		
C.F.		3.45	41.45	2" x 3"	C.F.	22.10	265.20		
C.F.		4.59	55.08		4"	C.F.	29.47	353.64	
C.F.		5.74	68.86	2-1/2" x 3"	C.F.	27.63	331.56		
C.F.		6.89	82.62		3" x 5"	EXT.	55.15	661.80	
C.F.	9.18	110.16							
3/4" x 1"	C.F.	2.76	33.16						



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TOLERANCES

COLD FINISH, FREE CUTTING BRASS, ALLOY 360

ROUNDS - TOLERANCES PLUS OR MINUS * (IN.)

DIAMETER (IN.)	COLD DRAWN ROUNDS
Up to .150", incl.	.0013
Over .150" to .500", incl.	.0015
Over .500" to 1.00", incl.	.002
Over 1.00" to 2.00", incl.	.0025
Over 2.00" to 8.00", incl.	.15% (A)

HEXAGONS - TOLERANCES PLUS OR MINUS * (IN.)

DISTANCE BETWEEN PARALLEL SURFACES (IN.)	COLD DRAWN HEXAGONS
Up to .150", incl.	.0025
Over .150" to .500", incl.	.003
Over .500" to 1.00", incl.	.004
Over 1.00" to 2.00", incl.	.005
Over 2.00" to 3.00", incl.	.30% (A)

SQUARES - TOLERANCES PLUS OR MINUS * (IN.)

DISTANCE BETWEEN PARALLEL SURFACES (IN.)	COLD DRAWN SQUARES
1/8"	.002
3/16"	.003
Over 3/16" to 1/2", incl.	.0035
Over 1/2" to 1", incl.	.0045
Over 1" to 2", incl.	.005
Over 2" to 3", incl.	.30% (A)

FLATS CF - COLD DRAWN PLUS OR MINUS * (IN.)

SPECIFIED WIDTH (IN.)	THICKNESS TOLERANCE (IN.)				WIDTH TOLERANCE (IN.)
	Up to 1/2" incl.	Over 1/2" to 1" incl.	Over 1" to 2" incl.	Over 2" to 4" incl.	
Over 1/2" to 1-1/4" incl.	.004	.0045	.0045	—	.005
Over 1-1/4" to 2" incl.	.0045	.005	.005	.006	.008
Over 2" to 4" incl.	.0045	.005	.006	.30%	.012
Over 4"	—	.007	.008	.30%	.30%

*ALL TOLERANCES ON THIS PAGE ARE A CLOSE APPROXIMATION BASED ON VARIOUS MILL MFG. PRACTICES.
 (A) PERCENT OF SPECIFIED THICKNESS EXPRESSED TO THE NEAREST .001