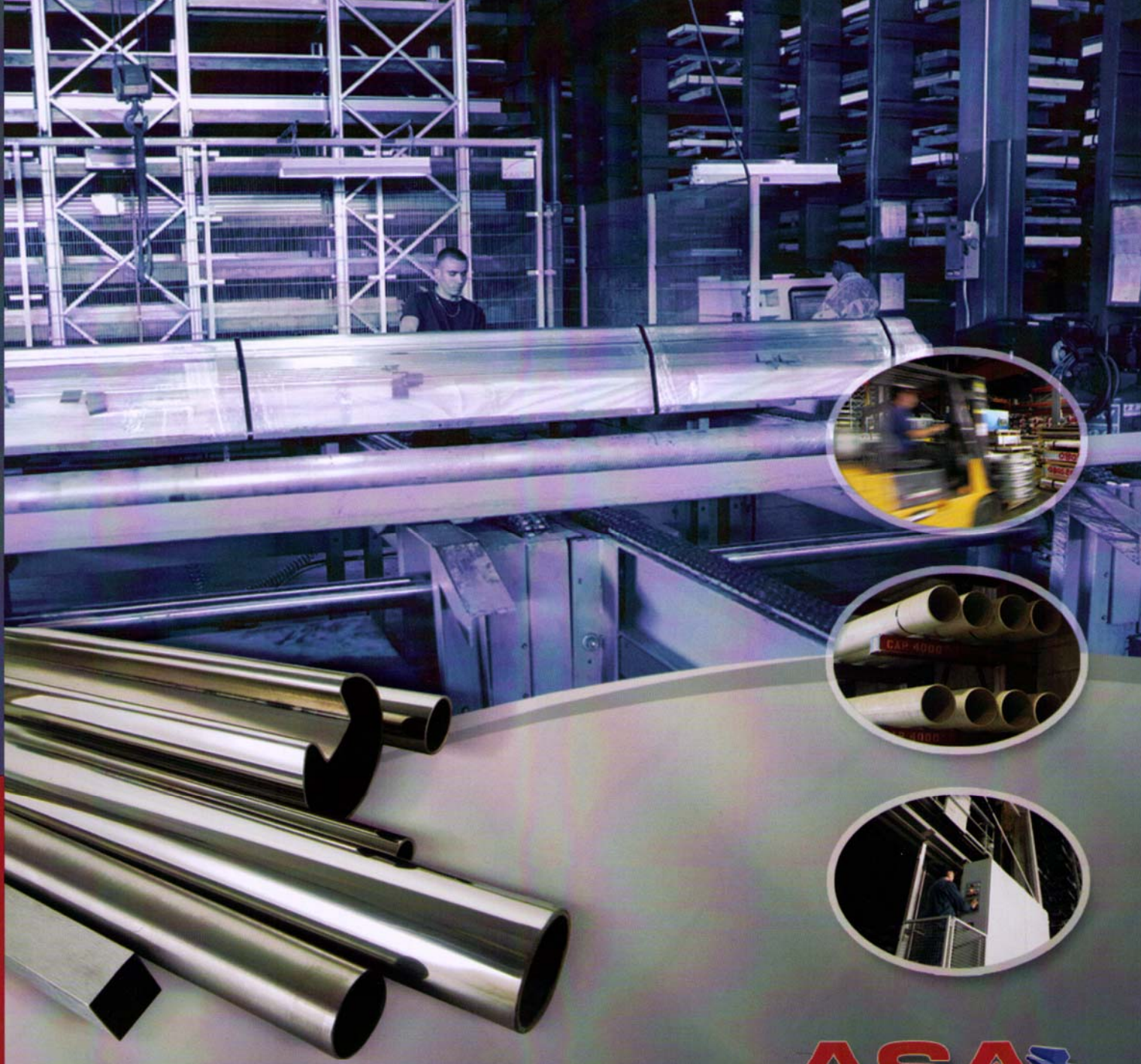


E S T A B L I S H E D 1 9 8 3

C E R T I F I E D I S O 9 0 0 2



Canada's
distributor of
specialty metal
products

Sheet/Plate Thickness & Billing Weights

Nominal	Thickness	Gauge Range	Per Sq. Ft.
3/16	.1875	.173-209	8.579
7/32	.21875	210-234	9.870
1/4	.2500	235-274	11.162
9/32	.28125	275-299	12.460
5/16	.31250	300-359	13.746
3/8	.37500	360-419	16.498
7/16	.43750	420-479	19.080
1/2	.50000	480-549	21.663
9/16	.56250	550-604	24.246
5/8	.62500	605-660	26.831
11/16	.68750	661-729	29.480
3/4	.75000	730-790	32.123
3/16	.81250	791-859	8.579
7/8	.87500	860-915	37.291
15/16	.93750	916-980	39.875
1"	1.0000	980-1.090	42.665
1-1/8	1.125	1.105-1.215	47.830
1-1/4	1.2500	1.230-1.350	53.226
1-1/2	1.5000	1.480-1.610	63.870
1-3/4	1.750	1.730-1.860	73.670
2"	2.0000	1.980-2.120	85.160
2-1/4	2.250	2.230-2.380	94.780

Gauge	Nominal Thickness	Nominal Mill Tolerances	Typicals	Thickness Range/A484
8	0.17187	+ .002-.006	0.168	.161 TO .176
9	0.15625	+ .002-.005	0.153	.146 TO .160
10	0.13400	+ .002-.005	0.132	.129 TO .1450
11	0.12000	+ .002-.005	0.117	.1141 TO .1300
12	0.10540	+ .002-.004	0.103	.0981 TO .1140
13	0.09000	+ .005-.0045	0.089	.0831 TO .0980
14	0.07510	+ .0015-.0035	0.074	.0721 TO .0831
16	0.05950	+ .0015-.0025	0.058	.0565 TO .061
18	0.04800	+ .0015-.0025	0.047	.0455 TO .052
20	0.03550	+ .0015-.0015	0.034	.033 TO .038
22	0.02940	+ .001-.001	0.029	.027 TO .016
24	0.02350	+ .001-.001	0.023	.022 TO .025
26	0.01780	+ .001-.001	0.0174	.0165 TO .019
28	0.01510	+ .001-.001	0.0148	.014 TO .016

Aluminum Specifications & Tolerances

SHEET/PLATE THICKNESS TOLERANCES (OTHER THAN AEROSPACE)

SPECIFIED THICKNESS, in.	SPECIFIED WIDTH-in.									
	Up thru 39.37	Over 39.37 Thru 59.06	Over 59.06 Thru 78.74	Over 78.74 Thru 98.43	Over 98.43 Thru 118.11	Over 118.11 Thru 137.80	Over 137.80 Thru 157.48	Over 157.48 Thru 177.17		
OVER	THRU	TOLERANCES-in. plus and minus								
0.0059	0.010	0.0010	0.0015	..	..	..	..	..	..
0.010	0.016	0.0010	0.0015	..	..	..	..	..	..
0.016	0.025	0.0015	0.0020	0.0030	0.0035	..	..	..	..
0.025	0.032	0.0020	0.0025	0.0035	0.0040	..	..	..	..
0.032	0.039	0.0020	0.0030	0.0035	0.0045	0.006	..	..	..
0.039	0.047	0.0025	0.0035	0.0045	0.0055	0.007	0.008	..	..
0.047	0.063	0.0030	0.0035	0.0050	0.006	0.007	0.009	..	..
0.063	0.079	0.0035	0.0040	0.0055	0.007	0.008	0.010	..	..
0.079	0.098	0.0035	0.0045	0.006	0.007	0.009	0.011	..	..
0.098	0.126	0.0045	0.0055	0.007	0.009	0.011	0.013	..	..
0.126	0.158	0.0055	0.007	0.009	0.011	0.013	0.015	..	..
0.158	0.197	0.007	0.009	0.011	0.013	0.015	0.018	..	..
0.197	0.248	0.009	0.011	0.013	0.015	0.018	0.022	0.027	..	
0.248	0.315	0.012	0.014	0.015	0.018	0.022	0.027	0.035	0.043	
0.315	0.394	0.015	0.017	0.020	0.023	0.027	0.033	0.041	0.051	
0.394	0.630	0.023	0.023	0.027	0.032	0.035	0.043	0.053	0.065	
0.630	0.984	0.031	0.031	0.037	0.043	0.047	0.058	0.070	0.085	
0.984	1.575	0.039	0.039	0.047	0.055	0.065	0.075	0.090	0.105	
1.575	2.362	0.055	0.055	0.060	0.070	0.085	0.100	0.115	..	
2.362	3.150	0.075	0.075	0.085	0.100	0.105	0.125	..	..
3.150	3.937	0.100	0.100	0.115	0.125	0.130	0.160	..	..
3.937	6.299	0.130	0.130	0.145	0.165	..	..	..	..

WIDTH TOLERANCES | SHEARED FLAT SHEET AND PLATE

SPECIFIED THICKNESS, in.	SPECIFIED WIDTH-in.					
	Up thru 6	Over 6 Thru 24	Over 24 Thru 60	Over 60 Thru 96	Over 96 Thru 132	Over 132 Thru 168
	TOLERANCES-in.					
0.006-0.124	± 1/16	± 3/32	± 1/8	± 1/8	± 5/32	..
0.125-0.249	± 3/32	± 3/32	± 1/8	± 5/32	± 3/16	..
0.250-0.499	+ 1/4	+ 5/16	+ 3/8	+ 3/8	+ 7/16	+ 1/2

LENGTH TOLERANCES | SHEARED FLAT SHEET AND PLATE

SPECIFIED THICKNESS, in.	SPECIFIED WIDTH-in.							
	Up thru 30	Over 30 Thru 60	Over 60 Thru 120	Over 120 Thru 240	Over 240 Thru 360	Over 360 Thru 480	Over 480 Thru 600	Over 600 Thru 720
	TOLERANCES-in.							
0.006-0.124	± 1/16	± 3/32	± 1/8	± 5/32	± 3/16	± 7/32	± 9/32	..
0.125-0.249	± 3/32	± 3/32	± 1/8	± 5/32	± 7/32	± 1/4	± 5/16	..
0.250-0.499	+ 1/4	+ 3/8	+ 7/16	+ 1/2	+ 9/16	+ 5/8	11/16	+ 3/4

WIDTH AND LENGTH TOLERANCES | SAWED FLAT SHEET AND PLATE

SPECIFIED THICKNESS, in.	SPECIFIED WIDTH-in.							
	Up thru 30	Over 30 Thru 60	Over 60 Thru 120	Over 120 Thru 240	Over 240 Thru 360	Over 360 Thru 480	Over 480 Thru 600	Over 600 Thru 720
	TOLERANCES-in.							
0.080-0.249	± 1/8	± 1/8	± 3/16	± 1/4	± 1/4	± 5/16	± 3/8	± 7/16
0.250-6.000	+ 1/4	+ 5/16	+ 3/8	+ 1/2	+ 9/16	+ 5/8	+ 3/4	+ 7/8

DIAMETER OR DISTANCE ACROSS FLATS

Round, Hexagonal or Square Rod and Bar Extruded to Size	
Size Range Inches	Plus or Minus
0.625-0.749	0.009
0.750-0.999	0.010
1.000-1.499	0.012
1.500-1.999	0.014
2.000-3.999	0.024
4.000-5.999	0.034
6.000-7.999	0.044
8.000	0.054

DIAMETER | ROUND WIRE AND ROD, COLD FINISHED

SPECIFIED THICKNESS, in.	Tolerance-Inches Plus and Minus (Allowable Deviation from Specified Diameter)			
	Drawn Wire	Cold Finished Rod	Rolled Rod	
			Plus	Minus
Up thru 0.035	0.0005	..	..	..
0.036-0.064	0.001	..	..	..
0.065-0.374	0.0015	..	..	..
0.375-0.500	..	0.0015	..	..
0.501-1.000	..	0.002	..	..
1.001-1.500	..	0.0025	..	..
1.501-2.000	..	0.004	0.006	0.006
2.001-3.000	..	0.006	0.008	0.008
3.001-3.499	..	0.008	0.012	0.012
3.500-5.000	..	0.012	0.031	0.016
5.001-8.000	..	..	0.062	0.031

WIDTH TOLERANCES | SLIT COILED SHEET

SPECIFIED THICKNESS, in.	SPECIFIED WIDTH-in.					
	Up thru 6	Over 6 Thru 12	Over 12 Thru 24	Over 24 Thru 48	Over 48 Thru 60	Over 60 Thru 96
	TOLERANCES-in. plus and minus					
0.006-0.125	0.010	1/64	1/32	3/64	1/16	1/8
0.126-0.186	0.012	1/32	1/32	1/16	3/32	..
0.187-0.249	0.016	1/32	3/64	3/32	1/8	..

LATERAL BOW TOLERANCES | COILED SHEET

SPECIFIED THICKNESS, in.	SPECIFIED WIDTH-in.				
	1/2 thru 1	Over 1 Thru 2	Over 2 Thru 4	Over 4 Thru 10	Over 10
	TOLERANCE-in. in 6 ft. Allowable Deviation of a Side Edge from a Straight Line				
0.006-0.064	3/4	9/16	3/8	1/4	3/16
0.065-0.125	..	..	3/8	1/4	3/16

Stainless Steel and Aluminum

Stainless Rounds (to 20")

- 203 - 303 - 304/304L - 309 - 310 - 316/316L - 317/317L
- 321 - 330 - 347 - 410 - 416 - 420 - 430 - 431 - 440C
- 15-5 - 13-8 - 17-4PH - 17-7 - Nitronics - 2205

Aluminum Rounds (to 20")

- 6061 - 6063 - 6101 - 6262 - 2024 - 7075

Stainless Tubing

- Rounds, Square, Rectangular
(Available finishes: Mill Finish, 180, 220, 240, 320, 600 grit,
600 grit P & B, Mirror and Linear P & B)
-304 - 316 - 409

Aluminum Tube

- 6061 - 6063 - 5086

Stainless Angles / Unequal Leg Angles

-304/304L - 316/316L

Aluminum Angles

- 6061 - 6063

Stainless Flatbar (Slit, Sheared & Hot Rolled)

- 303 - 304/304L - 309 - 310 - 316/316L - 410 - 420
- 17-4PH - 15-5 - 13-8
Polishing Available Upon Request

Aluminum Flatbar

- 6061 - 6063 - 6101

Stainless Sheet

- 301 - 304/304L - 309 - 310 - 316/316L - 317/317L - 321
- 347 - 410 - 15-7 - 17-4PH - 2205
Available Finishes: 2B, #4, BA, XL Blend-S, Mirror Finish, Appliance Finish

Aluminum Sheet

- 3003 - 5052 - 5083 - 5086 - 6061

Stainless Plate

- 304/304L - 309 - 310 - 316/316L - 317/317L - 321 - 347
- 410 - 420 - 17-4PH - 15-5 - 904L - 254 SMO - 2205
Stocking #4 Wet Finish off the floor

Aluminum Plate

- 2024 - 3003 - 5052 - 5083 - 5086 - 6061 - 7075

Aluminum Tread Plate

- 3003 - 5052 - 5086 - 6061

Stainless Pipe

- 304/304L - 309 - 310 - 316/316L - 321 - 330 - 347 - 409
Stocking #4 finish off the floor

Aluminum Pipe

- 6061 - 6063 - 5086

Stainless Cold Drawn Shapes/ Extrusions/Forgings

- To your grade and specification

Stainless Squares (to 6")

- 303 - 304/304L - 316/316L - 410 - 17-4

Aluminum Squares (to 6")

- 6061 - 6262

Stainless Hexagons (to 3")

- 203 - 303 - 304/304L - 316/316L - 416

Aluminum Hexagons/Channels/Beams/Legs

- 6061



Stainless Tubing Specifications & Tolerance

Manufacturing tolerances to ASTM – A 500 specification.

Outside Dimension (OD₁, OD₂)

The specified dimensions, measured across the flats on rectangles and squares, at positions at least 2" from either end and including an allowance for convexity or concavity, shall not exceed the plus and minus tolerances shown below.

Outside Dimensional Tolerances for Rectangular and Square Tubing

Largest outside Dimension Across Flats in Inches	Tolerance Plus or Minus
Over 4 to 5-1/2"	0.040
Over 5-1/2"	1%

Corner Radius (R)

The outside corner radius of a rectangular or square section is generally 2 x the material thickness (T). Maximum tolerances 3t.

Wall Thickness (t)

The wall thickness at an point shall not exceed ± 12-1/2% of the nominal wall.

Squareness of Sides (x°)

Adjacent sides may deviate from 90° by a tolerance of ± 2° maximum.

Lengths

Cutting Tolerances

Exact Cut	Cut to size + 1/4 - 0"
20' R/L	+2" -0

Twist (T)

Maximum Twist

Specified Dimensions of Longest side, inches.

over 2-1/2' to 4' incl.	over 4' to 6' incl.	over 6' to 8' incl.	over 8'
0.075	0.087	0.100	0.112

Straightness (C)

The commercial tolerance for straightness is 1/8" times the total number of feet of total length divided by 5.

$$.125' \times \frac{\text{total length}}{5}$$

A554 WELDED MECHANICAL TUBING | ORNAMENTAL TUBING

SIZE (INCHES) ROUNDS	TOLERANCES		SIZE SQUARE & RECTANGLE	TOLERANCES	
	O.D. +/-	Wall		Cross Flat Levelness	Twist Max in 3'
<1/2 to 1"	.005 .010	.025-.065 .065-.120	<1/2" Inclusive	+/--.015	.050
1 to 1-1/2"	.008 .010 .010	.025-.065 .065-.120 .025-.049	1/2 to 1-1/2 Inclusive		.075
1-1/2 to 2"	.011 .012	.083-.148 .035-.065	1-1/2 to 2-1/2" Inclusive	+/--.020	.095
2 to 2-1/2"	.012 .013 .014	.035-.065 .065-.109 .109-.165	2-1/2">	+/--.030	.125
2-1/2 to 3-1/2"	.020 .025	.065-.165 .165-.220			
3-1/2 to 4-1/2"	.020 .025	.083-.165 .165-.220			

Wall thickness tolerance +/-10%. Straightness tolerance 0.75" in 3'
20' R/L +/-3/16". Tests per ASTM A370 Annex 2.

Stainless Bar Specifications

STAINLESS TOLERANCES | HOT ROLLED FLATS

THICKNESS VARIATIONS	SPECIFIED WIDTH-in.				
	To 1 Incl	Over 1 to 2	Over 2 to 4	Over 4 to 6	Over 6 to 8
1/8 to 1/2 Incl. Over 1/2 to 1 Incl. Over 1 to 2 Incl.	±.008 ±.010 ..	±.012 ±.015 ±.031	±.015 ±.020 ±.031	±.015 ±.020 ±.031	±.016 ±.025 ±.031
WIDTH VARIATIONS					
Over Under	0.015 0.015	0.031 0.031	0.062 0.031	0.093 0.062	0.125 0.156

STAINLESS GAUGE

Hexagons & Squares		
Size, inches	Over, inches	Under, inches
.125 to .3125 excl.	0.000	-0.002
.3125 to .500 excl.	0.000	-0.003
.500 to 1.000 excl.	0.000	-0.004
Over 1 to 2 Incl.	0.000	-0.006
Over 2 to 3 Incl.	0.000	-0.008
Over 3	0.000	-0.010

STRAIGHTNESS TOLERANCES | MACHINE STRAIGHTENED BARS

HOT FINISH	COLD FINISH
1/8" in any 5 ft., but may not exceed 1/8" no. of feet in length	1/16" in any 5 ft., but may not exceed 1/16" no. of feet in length
5	5
PUMP SHAFTING* .005 in 3 ft. plus .0015 for each additional ft. over 3 ft. *Straightness is a Perishable Tolerance and will be maintained only on product of a full stock box.	

STAINLESS TOLERANCES | SLIT EDGE CONDITIONED FLATS

THICKNESS SPECIFIED	SPECIFIED WIDTH-in.			
	1" to 3" Incl.		Over 3" to 8" Incl.	
	VARIATION			
	Thickness	Width	Thickness	Width
*1/8	±.005	±.010	±.005	+0.025 -0.000
*3/16	+0.020 -0.010	±.015	+0.020 -0.010	+0.025 -0.000
*1/4	+0.020 -0.010	±.015	+0.020 -0.010	+0.025 -0.000
3/8	+0.060 -0.010	+0.025 -0.000	+0.060 -0.010	+0.025 -0.000
1/2"	+0.060 -0.010	+1.250 -0.000	+0.040 -0.010	+1.250 -0.000

*If Sheared & Edged, Width Tolerance +.0625 -0.000
†Minimum width 1-1/2"

STAINLESS TOLERANCES | PUMP SHAFTING (316, 410, 416)

	Diameter Over	Tolerance Under
1 to Under 1-1/2	+0.000	-0.025
1-1/2 to 4 Incl.	+0.000	-0.033
Over 4 to 4-1/2	+0.000	-0.055
Over 4-1/2 to 5 Incl.	+0.000	-0.08

STAINLESS TOLERANCES

-ROUNDS - Cold Finished	ROUNDS - Hot Rolled & Tough Turned			SQUARE & HEXAGON - Cold Finished	
Under 5/16	±.001	+1/32 -0	Out of Rd. 0.023	Under 5/16	+0.000 - .002
5/16 to Under 1/2	±.0015					5/16 to Under 1/2	+0.000 - .003
1/2 Under 1	±.002	+3/64 -0	0.035	1/2 to 1 Incl.	+0.000 - .004
1 to Under 1-1/2	±.0025	+1/16 -0	0.046	Over 1 to 2 Incl.	+0.000 - .006
1-1/2 to 4 Incl.	±.003	+5/64 -0	0.058	Over 2 to 3 Incl.	+0.000 - .008
Over 4 to 4-1/2 Incl.	±.005	+1/8 -0	0.070	Over 3	+0.000 - .011
Over 4-1/2 to 6 Incl.	±.008	+5/32 -0	0.085		

A Canadian Company that offers Service – Quality – Reliability



Aerospace & Nickel Products

AMS 2300	Magnetic Inspection Procedure Premium Aircraft Quality (Vac. Melt)	AMS 5726	A-286 (Cap210 KIS) Cold Reduced (Chems only)
AMS 2301	Aircraft Quality Magnetic Inspection Procedure	AMS 5731	A-286 Solution Treated (1800° 1 Hour)
AMS 2303	Aircraft Quality Magnetic Corrosion Resistance Steel Inspection Procedure	AMS 5732	A-286 Solution Treated (1800°) and Aged
AMS 4117	Type 6061-T651 (Aluminum)	AMS 5737	A-286 Solution Treated (1650°) and Aged
AMS 4120	Type 2024-T4 / -T351 (Aluminum)	AMS 5738	303 Selenium High Yield (Condition B)
AMS 4122	Type 7075-T6 (Aluminum)	AMS 5764	Nitronic 50 (XM-19) (22-13-5)
AMS 4123	Type 7075-T651 (Aluminum)	AMS 5842	MP-159
AMS 4124	Type 7075-T7351 (Aluminum)	AMS 5844	MP-35N
AMS 4165	Type 2024-T3511 (Aluminum)	AMS 5848	Nitronic 60
AMS 4169	Type 7075-T6511 (Aluminum)	AMS 6257	300M (Vacuum Melt) (Exc. Hardness)
AMS 4173	Type 6061-T6511 (Aluminum)	AMS 6265	E-9310 (Vacuum Melt)
AMS 4640	NI-AL-BRZ (C63000)	AMS 6267	E-9310 (Vacuum Melt)
AMS 5617	Custom 455 (12-9-2)	AMS 6346	E-4130 HT
AMS 5629	PH 13-8 MO Solution Treated	AMS 6348	E-4130
AMS 5641	303 Selenium Condition A	AMS 6349	E-4140 Norm
AMS 5643	17-4 PH Solution Treated	AMS 6370	E-4130
AMS 5644	17-7 PH Solution Treated	AMS 6411	E-4330 Modified (Vacuum Melt)
AMS 5659	15-5 PH Solution Treated - E.S.R./Vacuum Melt	AMS 6414	E-4340 (Vacuum Melt)
AMS 5662	718 Nickel Alloy	AMS 6415	E-4340
AMS 5663	718 Nickel Alloy	AMS 6419	300M (Vacuum Melt)
AMS 5665	"600" Nickel Alloy	AMS 6425	Hy-Tuf
AMS 5666	"625" Nickel Alloy	AMS 6427	E-4330 Modified (Vacuum Melt)
AMS 5667	X-750 Nickel Alloy	AMS 6444	E-52100 (Vacuum Melt)
AMS 5708	Waspaloy	AMS 6487	H-11 (Vacuum Melt)
		AMS 6488	H-11 (Vacuum Melt)
		AMS 6514	Maraging (Grade 300)
		AMS 6532	Aermet 100

4340 (V.M. & Air)

AMS 6414, AMS 6415, AMS-S-5000,
MIL-S-8844 Class 1, DMS 1555, BMS 7-28

4330V (4330MOD)

AMS 6411, AMS 6427, BMS 7-122, BMS 7-27
GM 1010, MIL-S-8699, CE-0906 EMS-96242

PH13-8MO

AMS 5629, AMS 2300, ASTM-A564

HYTUF

AMS 6425, AMS 6418, AMS-S-7108

Aluminum Nickel Bronze

AMS 4640, AMS 4590, ASTM-B150

300M (4340M)

BMS 7-26 AMS 6419 AMS 6417 AMS 6257
MIL-S-8844 Class 3 AMS 2300 DMS 1935
LGMS 1000

15-5PH (V.M. & E.S.R.)

AMS 5659, AMS 2300, ASTM-A564

4130 (NORM & H.T. Bar, Sheet, Plate, Tube)

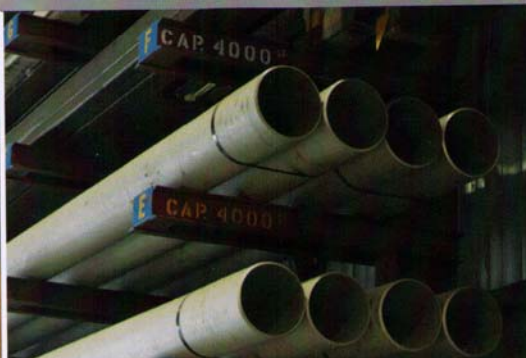
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AMS 6350, AMS 6360, MIL-T-6736

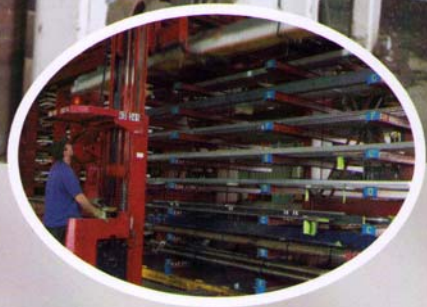
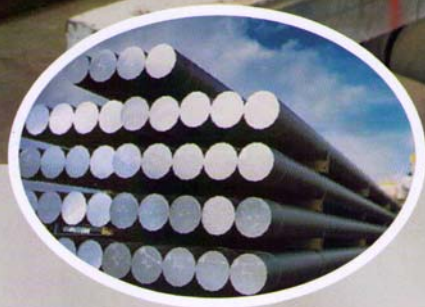
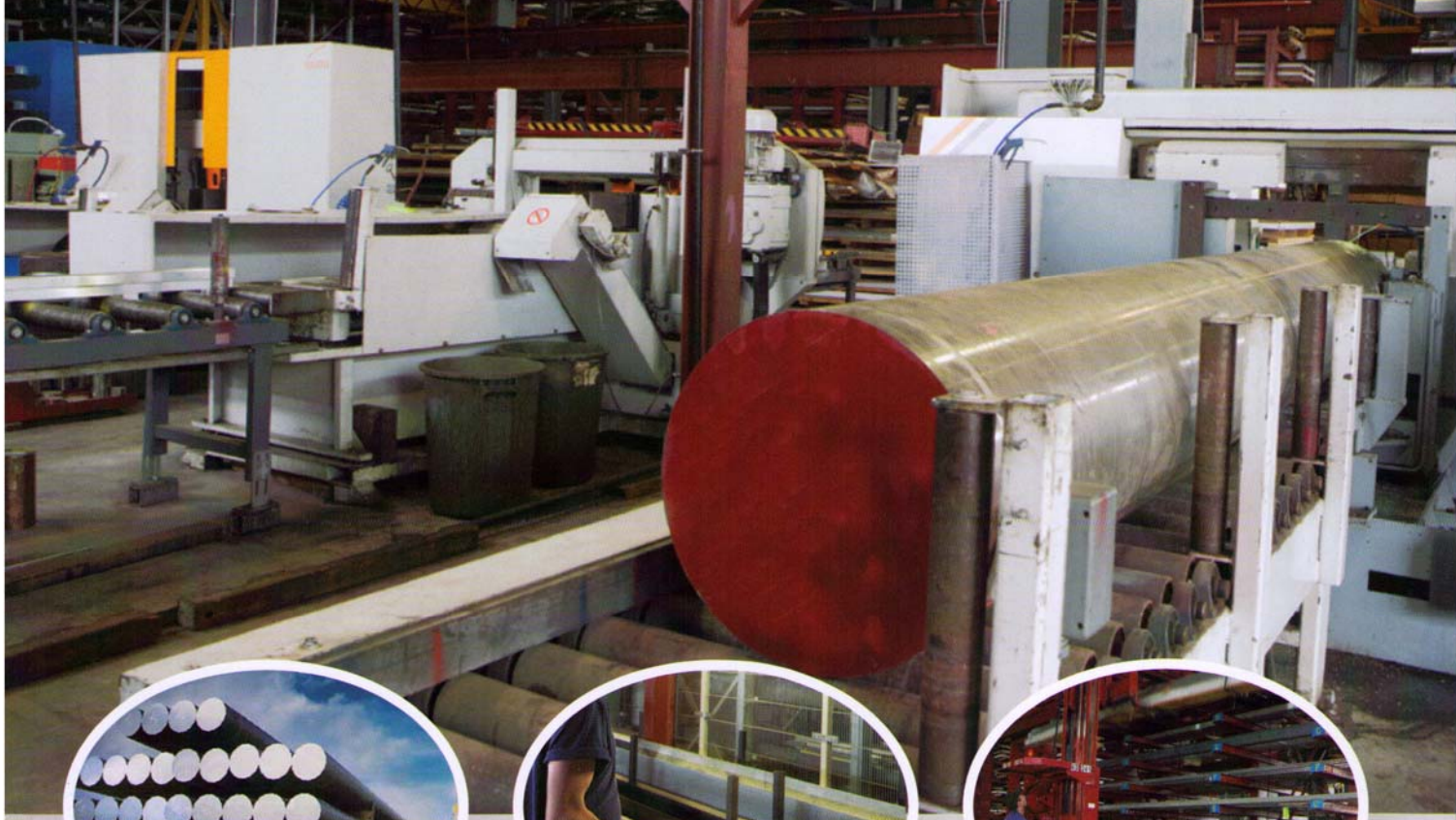
9310 N & T

AMS 6265, AMS 6260, AMS 6267

Beryllium Copper

AMS 4533, AMS 4534, ASTM-B196





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