sapa:

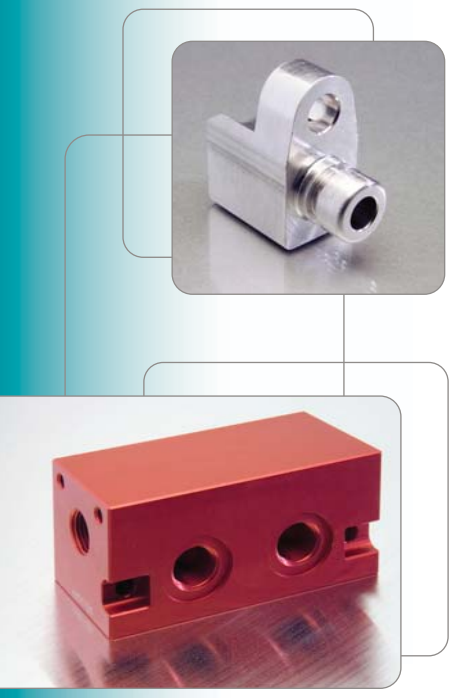
ACC-U-BAR®

Consistent Quality
for High Speed Machining

ACC-U-LINE™...
Raising the standard
in Rod, Hex and Bar products

ACC-U-BAR®

Core of Consistency in Precision Extruded Aluminum Bar



As part of Sapa's industry-leading ACC-U-LINE™ products, ACC-U-BAR® is a precision extruded aluminum product for high-speed machining. ACC-U-BAR® features ultra tight tolerances with **improved straightness, reduced twist over total length and transverse flatness,** all to 1/2 Aluminum Association Standard Tolerances, and elevated minimum mechanical properties. The result is **proven machining superiority and lowest total processing costs** for the most demanding jobs:

- Up to 30% improved finish on machined surfaces*
- Up to 35% reduction in machining torque (ft./lbs.) and thrust (lbs.)*
- Minimum setup time due to dimensional stability and tolerance control
- Reduced cutting times and tool wear
- Improved part cleanup due to all plus-side tolerances
- Improved chip control with reduced bird nesting and an improved deburring process

It's What's Inside That Counts

ACC-U-BAR with a cross sectional area up to 7.06 sq. in. features a fine recrystallized, uniform grain structure. Larger cross sectional areas feature an unrecrystallized uniform grain structure. ACC-U-LINE products deliver consistent uniformity that is unsurpassed by a competing extruded product, featuring:

- Sapa's unique capabilities for in-house casting of special alloy chemistries to improve mechanical properties and machinability
- Indirect extrusion technology for optimum consistency in grain structure and tolerances

A wide selection of standard sizes of square and rectangular ACC-U-BAR is available from Sapa Extrusions and its selected Premier® Distribution Partners.

Typical Applications:

- Fluid power
- Hydraulic manifold
- Pneumatic manifold
- Telecommunication electronics
- Machinery and equipment
- Fixturing devices

*Based on independent laboratory tests of lot-to-lot comparisons of ACC-U-BAR to leading competitive bar products and standard 6061-T6511 bar samples in select machining processes at a 95% confidence level.

ACC-U-BAR® Mechanical Properties

Property	6061-T6H, -T6511H*	6082-T6, -T6511	
Thickness	.875" - 8.000"	.875" - 6.000"	6.001" - 8.000"
Min. Ultimate Tensile (ksi)	42.0	45.0	41.0
Min. Yield Strength (ksi)	38.0	38.0	35.0
Minimum Elongation (%)	10	8	6

Comparative Tolerances** (inches)

Dimension	ACC-U-BAR®			Aluminum Association Standard Extruded Bar		
Straightness	.00625 in./ft. (0.075" in 12')			.0125 in./ft.		
Angularity	½°/ft.			1°/ft.		
Flatness Maximum Allowable Deviation Per Inch Of Width Or Thickness	0.002 inch per inch			0.004 inch per inch		
Twist Allowable Deviation From Straight	**Width (in.)**	**Tolerance**	**12' Length**	**Width (in.)**	**Tolerance**	**12' Length**
	.750-1.499	1°/ft.	3.5°	.750-1.499	1°/ft.	7°
	1.500-2.999	½°/ft.	2.5°	1.500-2.999	½°/ft.	5°
	3.000-8.000	¼°/ft.	1.5°	3.000 and over	¼°/ft.	3°

*Sapa Special Temper Designations are unregistered tempers for reference only, not recognized by the Aluminum Association, and are provided for customer use to identify unique processing, material or end use application characteristics.
**For lengths over 12', inquire about tolerances.

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Square

Thickness X Width (")	Wt./Ft.	Section #
.875 (+.010) X .875 (+.010)	0.910	567751
1.125 (+.014) X 1.125 (+.014)	1.507	567750
1.375 (+.014) X 1.375 (+.014)	2.246	567752
1.500 (+.014) X 1.500 (+.014)	2.671	550600
1.625 (+.014) X 1.625 (+.014)	3.132	567753
1.750 (+.014) X 1.750 (+.014)	3.630	555232
2.000 (+.024) X 2.000 (+.024)	4.761	550601
2.250 (+.024) X 2.250 (+.024)	6.017	566774
2.500 (+.024) X 2.500 (+.024)	7.421	550602

Thickness X Width (")	Wt./Ft.	Section #
2.750 (+.024) X 2.750 (+.024)	8.970	567109
3.000 (+.024) X 3.000 (+.024)	10.669	550603
3.250 (+.024) X 3.250 (+.024)	12.513	567754
3.500 (+.024) X 3.500 (+.024)	14.504	550604
4.000 (+.034) X 4.000 (+.034)	18.976	550605
4.500 (+.034) X 4.500 (+.034)	23.994	550606
5.000 (+.034) X 5.000 (+.034)	29.600	550607
5.500 (+.034) X 5.500 (+.034)	35.794	550608
6.000 (+.044) X 6.000 (+.044)	42.647	550609
8.000 (+.064) X 8.000 (+.064)	75.866	568747*

Rectangular

Thickness X Width (")	Wt./Ft.	Section #
1.000 (+.012) X 1.500 (+.014)	1.783	555224
1.000 (+.012) X 1.750 (+.014)	2.080	567747
1.000 (+.012) X 2.000 (+.024)	2.380	552853
1.000 (+.012) X 2.500 (+.024)	2.972	552848
1.000 (+.012) X 3.000 (+.024)	3.563	552712
1.000 (+.012) X 3.500 (+.024)	4.155	555225
1.000 (+.012) X 4.000 (+.034)	4.752	567865
1.000 (+.012) X 4.500 (+.034)	5.350	567748
1.000 (+.012) X 5.000 (+.034)	5.935	555226
1.250 (+.012) X 1.750 (+.014)	2.597	567749
1.250 (+.012) X 2.500 (+.024)	3.710	555227
1.250 (+.012) X 3.000 (+.024)	4.449	555228
1.250 (+.012) X 3.750 (+.024)	5.557	552856
1.250 (+.012) X 4.500 (+.034)	6.677	552850
1.250 (+.014) X 5.000 (+.034)	7.416	567239
1.250 (+.014) X 5.500 (+.034)	8.155	552852
1.500 (+.014) X 2.000 (+.024)	3.566	550610
1.500 (+.014) X 2.500 (+.024)	4.460	550611
1.500 (+.014) X 3.000 (+.024)	5.338	550613

Thickness X Width (")	Wt./Ft.	Section #
1.500 (+.014) X 3.500 (+024)	6.233	550616
1.500 (+.014) X 4.000 (+.034)	7.119	550620
1.500 (+.014) X 4.500 (+.034)	8.005	550625
1.500 (+.014) X 5.000 (+.034)	8.891	550631
1.500 (+.014) X 5.500 (+.034)	9.777	550638
1.500 (+.014) X 6.000 (+.044)	10.672	550646
1.500 (+.014) X 6.500 (+.044)	11.558	552711
1.500 (+.014) X 7.000 (+.044)	12.445	555229
1.500 (+.014) X 8.500 (+.054)	15.112	552847
1.750 (+.014) X 2.000 (+.024)	4.157	567227
1.750 (+.014) X 2.750 (+.024)	5.707	555230
1.750 (+.014) X 3.750 (+.024)	7.783	552851
1.750 (+.014) X 4.500 (+.034)	9.333	552849
1.750 (+.014) X 5.500 (+.034)	11.399	552854
1.750 (+.014) X 6.500 (+.044)	13.476	555231
2.000 (+.024) X 2.500 (+.024)	5.944	550612
2.000 (+.024) X 3.000 (+.024)	7.127	550614
2.000 (+.024) X 3.500 (+.024)	8.309	550617
2.000 (+.024) X 4.000 (+.034)	9.505	550621

* Straightness tolerance: allowable deviation of .0125" x measured length (ft.) with the weight of the piece minimizing the bow
Twist tolerance: allowable deviation ¼°/ft., 2.5° max. total length

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Rectangular

Thickness X Width (")	Wt./Ft.	Section #
2.000 (+.024) X 4.500 (+.034)	10.688	550626
2.000 (+.024) X 5.000 (+.034)	11.871	550632
2.000 (+.024) X 5.500 (+.034)	13.054	550639
2.000 (+.024) X 6.000 (+.044)	14.249	550647
2.000 (+.024) X 6.500 (+.044)	15.432	552855
2.000 (+.024) X 8.000 (+.054)	18.820	567133
2.000 (+.024) X 8.500 (+.054)	19.992	552846
2.250 (+.024) X 8.000 (+.054)	21.353	555233
2.500 (+.024) X 3.000 (+.024)	8.898	550615
2.500 (+.024) X 3.250 (+.024)	9.636	555234
2.500 (+.024) X 3.500 (+.024)	10.374	550618
2.500 (+.024) X 4.000 (+.034)	11.867	550622
2.500 (+.024) X 4.500 (+.034)	13.344	550627
2.500 (+.024) X 5.000 (+.034)	14.821	550633
2.500 (+.024) X 5.500 (+.034)	16.298	550640
2.500 (+.024) X 6.000 (+.044)	17.790	550648
3.000 (+.024) X 3.500 (+.024)	12.439	550619
3.000 (+.024) X 4.000 (+.034)	14.229	550623
3.000 (+.024) X 4.500 (+.034)	16.000	550628
3.000 (+.024) X 5.000 (+.034)	17.771	550634
3.000 (+.024) X 5.500 (+.034)	19.542	550641
3.000 (+.024) X 6.000 (+.044)	21.331	550649
3.250 (+.024) X 4.250 (+.034)	16.369	555235
3.500 (+.024) X 4.000 (+.034)	16.614	550624
3.500 (+.024) X 4.500 (+.034)	18.655	550629
3.500 (+.024) X 5.000 (+.034)	20.750	550635
3.500 (+.024) X 5.500 (+.034)	22.785	550642
3.500 (+.024) X 6.000 (+.044)	24.877	550650
3.500 (+.024) X 6.750 (+.044)	27.969	555236
3.500 (+.024) X 7.000 (+.044)	29.002	567848
4.000 (+.034) X 4.500 (+.034)	21.338	550630
4.000 (+.034) X 5.000 (+.034)	23.700	550636
4.000 (+.034) X 5.500 (+.034)	26.062	550643
4.000 (+.034) X 6.000 (+.044)	28.448	550651
4.000 (+.034) X 7.000 (+.044)	33.171	554694
4.000 (+.034) X 8.000 (+.044)	37.919	553318
4.500 (+.034) X 5.000 (+.034)	26.650	550637
4.500 (+.034) X 5.500 (+.034)	29.306	550644
4.500 (+.034) X 6.000 (+.044)	31.989	550652
5.000 (+.034) X 5.500 (+.034)	32.550	550645
5.000 (+.034) X 6.000 (+.044)	35.530	550653
5.000 (+.034) X 6.500 (+.044)	38.480	550655
5.000 (+.034) X 7.000 (+.044)	41.430	550657
5.000 (+.034) X 7.500 (+.044)	44.380	550659
5.000 (+.034) X 8.000 (+.054)	47.359	550660
5.500 (+.034) X 6.000 (+.044)	39.071	550654
5.500 (+.034) X 8.000 (+.054)	52.079	550661
6.000 (+.044) X 6.500 (+.044)	46.188	550656
6.000 (+.044) X 7.000 (+.044)	49.729	550658
7.000 (+.044) X 8.000 (+.054)	66.286	554704

Available Alloys:

- 6061-T6H, -T6511H (meets standard 6061-T6, -T6511 specification requirements for extrusions)
- 6082-T6, -T6511

Other alloys may be available upon request.

Certified to ASTM B 221 and ASME SB 221 (alloy 6061) and to applicable Federal, Military and Aluminum Association specifications; producing plants are BS EN ISO 9001; 2000 certified.

- Standard 12' lengths, other lengths on request.

Sapa Extrusions North America

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Shaping the future