

CMS COLORADO METALLURGICAL SERVICES

625 EAST 70TH AVE. UNIT 5, DENVER CO 80229 / 303-780-9800

TO: Spidertrax

DATE: July 19, 2010

ATTN: Thomas J Kingston,

PO#: 10561

Condition/Material: Aluminum 6061 T6

Specification: AMS-QQ-A-250/11 / ASTM-E-384 / ASTM-E-1251 / ASTM-E-415 /
AISI 1345 / Customer Requirements

Amended 07-22-2010

LAB#: C-70-055A

TENSILE TEST

Identity	Diameter in	Area in ²	Yield Strength		Tensile Strength		Elongation		Fracture
			Load (lb)	lb / in ²	Load (lb)	lb / in ²	in / in	%	Location
1	0.1600	0.0201	880	43,800	960	47,800	0.70	9	g

Requirements: 2"-4" thick

35,000min

42,000min

6%min

Requirements: 1"-2" thick

35,000min

42,000min

8%min

Yield Strength Determined By: 0.2% Offset

[g] Fractured through gage marks or within specimen width of gage marks.

[X] Meets Specification Requirements

CHEMICAL ANALYSIS

		Requirements AMS-QQ-A250/11
Silicon	.66	.40-.80
Iron	.20	.70X
Copper	.28	.15-.40
Manganese	.05	.15X
Magnesium	1.02	.80-1.20
Chromium	.09	.04-.35
Nickel	.02	
Zinc	.09	.25X
Titanium	.03	.15X
Lead	.04	
Tin	<.01	
Beryllium	.02	
Aluminum	Base	
Other Elements	.04	.05X
Other Totals	<.09	.15X

[X] Meets Specification Requirements

* Chemistry taken on flange

CHEMICAL ANALYSIS

		Requirements
		<u>AISI 1345</u>
Carbon	.43	.43-.48
Sulfur	.012	.040X
Phosphorus	.012	.035X
Silicon	.24	.15-.35
Chromium	.09	
Nickel	.04	
Manganese	1.66	1.60-1.90
Copper	.06	
Molybdenum	.02	
Columbium	<.01	
Titanium	<.01	
Aluminum	.01	
Vanadium	.02	
Cobalt	<.01	
Tungsten	.01	
Iron	Base	

[X] Meets Specification Requirements

*Chemistry taken on bolt

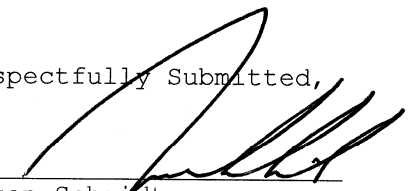
HARDNESS TEST

	<u>HK500</u>	<u>HRC</u>
.002	390.4	39.0
.004	390.4	39.0
.006	402.4	40.0
.008	402.4	40.0
.010	408.4	40.5
Core	379.0	38.0

[X] Information Only

Chemistry Run By: OES
Weight By Percent

Respectfully Submitted,



Jason Schmidt
QA Manager

Acceptance of this certification indicates customer acknowledgment of invoice terms. All reports are submitted as the confidential property of clients. Authorization for publication of our reports, conclusions or extracts from or regarding them, is reserved pending our written approval as a mutual protection to clients, the public and ourselves.