

NOTICE OF SHIPMENT/
PACKING LIST



CERTIFICATE OF TEST

AL 6168-4 1211

CUST. ORD. NO. & DATE 2DE-494-KD	CUST. CODE 09/04/12 873376	ACCEPTING MILL LOUISVILLE OH	SHIPPER NO. 562506	PRODUCT CODE 13020116060000	MILL ORDER NUMBER 32-092-007	DATE SHIPPED 12/14/12
FORMS DISTRIBUTION SOLD TO → 1 SHIP TO → SPEC →	REPEAT ORDER 96344-3	DO RATE 21	GOVT CONTRACT	MATL 6140	SHIPPING LOCATION LOUISVILLE OH	INVOICE 243912
	PRIME DSO 402	SEC. DSO				

TAG
2156

GRADE AND SPECIFICATIONS
ATI GRADE 4 TITANIUM SHEET C R COILS ANNEALED 1BA FIN 3 EDGE (MIL-T-9046J & AM 2-CANC 09/17/99) (AMS-T-9046A CP-1) (AMS 490LS) (11/17/00 EXCEPT TO MIL-T-9046J) (S-1000 DATED 8/1/2011) (S-400 DTD 10/10/2011) (ASTM-F-67-06) (ISO 5832-2:1999E) (DMS 2442 REV E) (RR9000:SABRE) (DMS 1536 REV L) (07/13/11 CLARIFICATIONS DMS 1536) (ES0438-HAS REV B) (09/29/10 EXCEPTIONS TO ES0438) (ASTM-B-265-11)

CARRIER - CUSTOMER TRUCK

ITEM	PCS	DIMENSIONS W/G/L	HEAT #	COIL #	TEST #	GROSS	TARE	NET	THEO	TAG #/	CD	SKID #
001B	1	36./1.063/460.	N08YEM	09432T628A	L257264	2170	60	2110	2070	204304		
C CUST IDENTITY SYNTHESGRADE4SHEET												
	1	SKID				2170	60	2110	2070			

TYPE HEAT/TEST	--C--	--TI--	--N--	--FE--	--O--	R-EACH	R-TOTL
HEAT N08YEM	.005	BAL	.002	.19	.31	<.01	<.10
TEST LOCATION	RW	RW	RW	RW	XX	XX	

ITEM TEST NO	YIELD PSI *	TENSILE PSI	% ELONG IN 2"	% R/A	HARDNESS	BRND	ALPHA CASE	GRAIN SIZE	H2 CHECK
001B L257264	L 75000.	96000.	29.			L PASS	PASS		.0009
TEST LOCATION	TC	TC	TC			L PASS	PASS		.0007
						TC	TC		TC

MELT METHOD - ELECTRON BEAM TEST NO L257264
* Y.S. BY 0.2% OFFSET METHOD

ITEM TEST NO	YIELD PSI *	TENSILE PSI	TRAN IN 2	ELONG INCH	BEND BOTTOM	BEND L PASS	BEND T PASS	BEND T PASS
001B L257264	T 84000.	98000.	27.		L PASS	L PASS	T PASS	T PASS
TEST LOCATION	TC	TC	TC		L PASS	L PASS	T PASS	T PASS

ALL BENDS TESTED AT 105 DEGREES, 5 X T DIAMETER

PAGE 01 - CONTINUED ON PAGE 02

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Materials Safety Data Sheets for this product have been supplied to your Purchasing Department. For an additional copy phone 724-226-5388. CAUTION: Processing that makes fumes, dust, or solutions may cause lung disease. See Materials Safety Data Sheets for further information.

WARNING
Les fiches d'information-sécurité de ce produit ont été fournies à votre département chargé des achats. Pour obtenir des exemplaires supplémentaires veuillez téléphoner au numéro suivant 724-226-5388. Attention: les traitements entraînent la production de vapeurs, poussières, ou solutions peuvent être cause de maladies pulmonaires. Pour plus de renseignements se référer aux fiches d'information-sécurité.

12/14/12 14:14:26
The above is a true copy of data on file. The material and test results conform to the sales contract and specification(s) as set forth in Allegheny Ludlum's Order Acknowledgement.
Stephen Wolf - Director, Corporate Quality Assurance

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CERTIFICATE OF TEST

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CUST. ORD. NO. & DATE 2DE-494-KD FORMS DISTRIBUTION	09/04/12	CUST. CODE 873376	ACCEPTING MILL LOUISVILLE, OH	SHIPPER NO. 562506	PRODUCT CODE 13020116060000	MILL ORDER NUMBER 32-092-007	DATE SHIPPED 12/14/12
SOLD TO → 1 SHIP TO → 1 SPEC → 1		REPEAT ORDER 96344-3	DO PRI. RATE ORTY 21	GOVT CONTRACT	MATL 6140	SHIPPING LOCATION LOUISVILLE	INVOICE 243912
		PRIME DSO 402	SEC. DSO				

GRADE AND SPECIFICATIONS

ATI GRADE 4 TITANIUM SHEET C R COILS ANNEALED 1BA FIN 3 EDGE (MIL-T-9046J & AM 2-CANC 09/17/99) (AMS-T-9046A CP-1) (AMS 4901S) (11/17/00 EXCEPT TO MIL-T-9046J) (S-1000 DATED 8/1/2011) (S-400 DTD 10/10/2011) (ASTM-F-67-06) (ISO 5832-2:1999E) (DMS 2442 REV E) (RR9000:SABRE) (DMS 1536 REV L) (07/13/11 CLARIFICATIONS DMS 1536) (ES0438-HAS REV B) (09/29/10 EXCEPTIONS TO ES0438) (ASTM-B-265-11)

CARRIER - CUSTOMER TRUCK

ITEM TEST NO	TRAN. ELEV	LONG. ELEV	MELT	MICRO -	PREDOMINANT AVERAGE		
001B L257264	TEMP Y.S.	TEMP Y.S.	SOURCE	STRUCTURE	GRAIN SIZE	GRAIN SIZE	BEND
	*44300.	*38500.	1.	T PASS	10.	10.	T PASS
	*46000.	*39500.		T PASS	10.	10.	T PASS
TEST LOCATION	WM	WM		TC	TC	TC	TC

ITEM TEST NO	T MICRO-IN
001B L257264	19/11.
	18/13.
TEST LOCATION	TC

METALLOGRAPHIC MAGNIFICATION: 100X ETCHANT USED: KROLLS ETCH

GRADE VERIFICATION WAS CARRIED OUT SPECTROSCOPICALLY

DIN EN 10204-2005 - 3.1 CERTIFICATE DOES NOT INDICATE PED APPROVAL FOR THIS MATERIAL.

Heat numbers beginning or ending in EM were melted in Richland, WA.
Heat numbers beginning or ending in WC were melted in Albany, OR.

ATI ALLEGHENY LUDLUM DOES NOT USE MERCURY IN THE TESTING OR PRODUCTION OF ITS PRODUCTS.

MATERIAL MELTED AND ROLLED IN THE UNITED STATES AND COMPLIES WITH DEARS JANUARY 2010 EDITION, SECTION 252.225-7008.

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WARNING

Les fiches d'information sécuritaires de ce produit ont été fournies à votre département chargé des achats. Pour obtenir des exemplaires supplémentaires veuillez téléphoner au numéro suivant 724-226-5980. Attention: les traitements entraînant la production de vapeurs, poussières, ou solutions peuvent être cause de maladies pulmonaires. Pour plus de renseignements se référer aux fiches d'information sécuritaires.

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Stephen Wolff
Director, Corporate Quality Assurance

NOTICE OF SHIPMENT/
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CERTIFICATE OF TEST

AL 6163-4 1211

CUST. ORD. NO. & DATE			CUST. CODE	ACCEPTING MILL	SHIPPER NO.	PRODUCT CODE	MILL ORDER NUMBER	DATE SHIPPED
2DE-494-KD FORMS DISTRIBUTION			09/04/12 873376	LOUISVILLE, OH	562506	13020116060000	32-092-007	12/14/12
SOLD TO	SHIP TO	SPEC	REPEAT ORDER	DO RATE	PRE-ORIT	MATL	SHIPPING LOCATION	INVOICE
1			96344-3	21		6140	LOUISVILLE OH	243912
			PRIME SEC.					
			DSO DSO					
			402					

GRADE AND SPECIFICATIONS

CARRIER - CUSTOMER TRUCK

ATI GRADE 4 TITANIUM SHEET C R COILS ANNEALED 1BA FIN 3 EDGE (MIL-T-9046J & AM 2-CANC 09/17/99) (AMS-T-9046A CP-1) (AMS 4901S) (11/17/00 EXCEPT TO MIL-T-9046J) (S-1000 DATED 8/1/2011) (S-400 DTD 10/10/2011) (ASTM-F-67-06) (ISO 5832-2:1999E) (DMS 2442 REV E) (RR9000:SABRE) (DMS 1536 REV L) (07/13/11 CLARIFICATIONS DMS 1536) (RS0438-HAS REV B) (09/29/10 EXCEPTIONS TO RS0438) (ASTM-B-265-11)

THIS CERTIFICATE OF TEST SHALL NOT BE REPRODUCED EXCEPT IN FULL. MATERIAL MELT AND CHEMICAL TESTING WERE PERFORMED BY AN OUTSIDE ATI AL APPROVED SUPPLIER.

ATI ALLEGHENY LUDLUM WORKS TO THE ROLLS ROYCE SABRE QUALITY MANAGEMENT SYSTEM.

ATI ALLEGHENY LUDLUM PERFORMS CHEMICAL ANALYSIS BY THE FOLLOWING TECHNIQUES:

- C, S BY COMBUSTION/INFRARED
- N, O, H BY INERT FUSION/THERMAL CONDUCTIVITY
- MN, P, SI, CR, NI, MO, CU, CB, CO, V BY WDXRF
- B BY OES
- AL AND TI (>=0.10%) BY WDXRF, OTHERWISE BY OES
- PB, BI, AG BY GFAA

MILITARY STANDARD MIL-T-9046 WAS CANCELLED 09/17/99 AND AMS-T-9046 WAS CANCELLED IN MAY 2006. THE SPECS HAVE BEEN REPLACED BY SEVERAL AMS STANDARDS.

MATERIAL TESTED AT ATI ALLEGHENY LUDLUM GEAR S400 APPROVED FACILITIES (T1225 & T9317): NATRONA HEIGHTS, PA TECHNICAL CENTER; BRACKENRIDGE, PA AND NEW BEDFORD, MA.

ATI ALLEGHENY LUDLUM HOLDS SEVERAL QUALITY AND LABORATORY CERTIFICATIONS THAT INCLUDE ISO-9001, AS9100, AD 2000-MERKBLATT WO, EU PRESSURE EQUIPMENT DIRECTIVE 97/23/EC, NADCAP, ISO/EIC 17025, GEAR S400, GEAR S-1000. REFER TO WWW.ALLEGHENYLUDLUM.COM TO ACCESS THE CURRENT ATI AL QUALITY CERTIFICATIONS.

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12/14/12 14:14:26

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FORMS DISTRIBUTION			REPEAT ORDER 96344-3	DO RATE 21	GOVT CONTRACT	MATL 6140	SHIPPING LOCATION LOUISVILLE	INVOICE OH 243912
SOLD TO	SHIP TO	SPEC	PRIME SEC.	DSO	DSO			
1				402				

GRADE AND SPECIFICATIONS

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PRODUCT WAS ANNEALED BY HEATING TO A TEMPERATURE WITHIN THE RANGE 1200 TO 1500 F (649 TO 816C), HOLDING AT THE SELECTED TEMPERATURE (+/- 25F OR 14C) FOR A TIME COMMENSURATE WITH THE THICKNESS AND THE HEATING PROCEDURE USED, AND COOLING AS REQUIRED.

THE NUMERIC CODES SHOWN UNDER MELT SOURCE CAN BE INTERPRETED AS FOLLOWS:

1. - MATERIAL MELTED, ROLLED AND TESTED IN THE UNITED STATES.
2. - FOREIGN MELT; ROLLED AND TESTED IN THE UNITED STATES.

TESTING WAS PERFORMED AT THE FOLLOWING LOCATIONS:

RW = ATI-RICHLAND; 3101 KINGSGATE WAY; RICHLAND, WA. 99354
 TC = ATI-ALLEGHENY LUDLUM; 1300 PACIFIC AVENUE; NATRONA HEIGHTS, PA 15065
 WM = WESTMORELAND MECHANICAL TESTING; 221 WESTMORELAND DRIVE; YOUNGSTOWN, PA 15696
 XX = CALCULATED

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ISSUED BY ATI ALLEGHENY LUDLUM - 12/18/2012 08:30 /clm

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