



Zapp Precision Strip Inc., 266 Samuel Barnet Blvd., New Bedford, MA 02745

Delta Alloys
11823 E Slauson Ave Ste.28
Santa Fe Springs, CA 90670

Zapp Precision Strip Inc.

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Member of the Zapp Group

April 14, 2023

Inspection certificate Type 3.1 per EN 10204

Certificate No. 2210092735000010 01

Your purchase Order 25789 dated 10/05/2022
Sales Order 2202009500 Delivery Note 2210092735
Production Lot 6206498 Inspection Lot 020000452295
Item 10 STAINLESS STEEL
Grade SS321
Size (in) 0.0020 " x 36.5000 "
Thickn.tolerance(in) -0.00010 " / 0.00010 "
Width tolerance (in) -0.50000 " / 0.50000 "
InnerDia.Core (in) 16 "
Edge slit edges
Surface Bright Annealed Finish
Condition Annealed
Cust. Specification BMC-TR REV. 4/2/2014
Techn. Specification AMS 5510 REV. T
Techn. Specification ASTM A240/A240M-22
Specifications AMS 5510 ASTM A 240 BMC Test report Req.
Material 8702886
Customer part no 321ANN002
Quantity / Weight 10,510.000 LB

Chemical composition		Heat 863556				
	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Cr (%)
	0.0200	1.78	0.55	0.0320	0.0002	17.14
	Ni (%)	Mo (%)	N (%)	Cu (%)	Ti (%)	Co (%)
	9.14	0.32	0.008	0.390	0.170	0.120
Melt Source	ATI - US					

Quality inspection results

Tensile Strength trans. 88.60 - 93.20 KSI
.2% Yield Strength trans. 38.30 - 45.10 KSI
Elongation 2" trans. 47.80 - 57.60 %
Thickness 0.00192 - 0.00197 inch
Grain Size 11.0
Hardness 75.9 - 82.6 HRB



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Hardness Vickers 138.8 - 157.9 HV
Roughness Ra 6.970 - 11.190 µinch

Batch D043335003 D043335004 D043335005 D043335006

Bending test 180° HW bend diameter: 1x thickness PASS

Corrosion testing acc. to ASTM A 262 Practice E: PASS

This material meets the requirements of ASTM A240, Revision 22B.
This material meets the requirements of ASTM A666, Revision 23.
Recertification. 03MAY2023 GEK

Sizes and Quality identification test examined and in order.

Surface visual inspection at finish: without objection.

In compliance with the conditions mentioned in the acknowledgement of order.

This certificate signifies that the material meets the appropriate requirements defined in the current revision of the following specifications:

Strip-Products: ISO 9445-1; ISO 9445-2; ASTM A480/480M and DIN EN 10140.

Wire/Bar-Products: ASTM A370; ASTM A555/A555M; ASTM A580/A580M.

This certificate has been issued by computer and is valid without signature.

ZPS / GRACE KISH, QUALITY MANAGER +1 508-998-6300

Abnahme / Abn.Beauftragter
Acceptance / Inspection representative
Contrôle / Contrôleur

Telefon
Phone
Téléphone

ZAPP Precision Strip Inc. does not use mercury in the testing or production of material.
ZAPP Precision Strip Inc. is certified to ISO 9001, AS 9100 and is approved as a manufacturer according to AD2000-MERKBLATT W0 and the Pressure Equipment Directive PED 2014/68/EU. To view certificates go to customer information www.zapp.com

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6/13/22
INVOICE
63116

JD.
MA 02745

MELT METHOD: FF + AOD

* Y.S. BY 0.2% OFFSET METHOD

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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 A1 Specialty Rolled Products' Order Acknowledgement.

W. D. DeFranco

Norbert DeFranco, President, A1 Specialty Rolled Products

Norleen DeBarraan •

NOTICE OF SHIPMENT/
PACKING LIST

Specialty Rolled Products

CERTIFICATE OF TEST

CUST. ORD. NO. & DATE	CUST. CODE	FINISHING LOCATION	SHIPPER NO.	PRODUCT CODE	MILL ORDER NUMBER	DATE SHIPPED
2021003569	01/25/22A994331	VANDERGRIFF, PA	489357	13020103060000	30-012-154	06/13/22
FORMS DISTRIBUTION	MG BILL	DD PRI.	GOVT CONTRACT	MTL	SHIPPING LOCATION	INVOICE
SOLD TO	L540711	ORDER RATE ORTY		1141	VANDERGRIFF	PA
SHIP TO	PRIME SEC.			SHIP TO		663116
ZAPP PRECISION STRIP INC	DSO DSO		ZAPP USA			
CR206686	10		266 SAMUEL BARNET BLVD.			
266 SAMUEL BARNET BOULEVARD			NEW BEDFORD	MA	02745	
NEW BEDFORD						

GRADE

"ATI 321" STAINLESS STEEL SHEET C R COILS ANNEALED 2D FIN 3 EDGE

CARRIER - CUSTOMER PICKUP

MATERIAL IS OF USA MELT AND MANUFACTURE.

THE FOLLOWING TEST METHODS ARE USED BY THE LISTED LAB: ASTM E8 FOR ALL SPECIMENS FOR YIELD, TENSILE, AND ELONGATION EXCEPT ISO 6892-1 FOR 80MM SPECIMENS; ASTM E290 FOR BEND (FOR NEW BEDFORD LABORATORY - TYPE 2 BEND IS USED), ASTM E112 FOR GRAIN SIZE; ASTM E10, E18, E92, & E384 FOR HARDNESS; ASME B46.1 SECTION3 FOR SURFACE ROUGHNESS; AMS 2750 FOR LABORATORY HEAT TREATMENT; ASTM E139 FOR STRESS RUPTURE; ASTM E29 FOR ROUNDING; ASTM E3 AND E407 FOR METALLOGRAPHIC PREPARATION AND ETCHING.

ATI FLAT ROLLED PRODUCTS PERFORMS CHEMICAL ANALYSIS BY THE FOLLOWING TECHNIQUES FOR TESTING LOCATIONS TC, BN, & LO: C & S BY COMBUSTION/INFRARED ABSORPTION PER ASTM E1019; N & O BY INERT FUSION/THERMAL CONDUCTIVITY PER ASTM E1019; MN, P, SI, CR, NI, MO, CU, CB(NB), CO, V, W BY WDXRF PER ASTM E572; PB, BI, AG, SE, SB BY GFAA PER ASTM E1184; AL AND TI (>=0.10%) BY WDXRF PER ASTM E572 OTHERWISE BY OES PER ASTM E1086; TA, ZN, MG, CD, CE, CA, ZR, LA BY ICP PER ASTM E1479.

EN 10204:2005 - 3.1 CERTIFICATE DOES NOT IMPLY THAT MATERIAL IS AN APPROVED PED GRADE. FOR A COMPLETE LISTING OF APPROVED PED GRADES, VISIT OUR WEBSITE AT WWW.ATIMETALS.COM.

THESE COMMODITIES OR TECHNOLOGY, WHEN EXPORTED FROM THE UNITED STATES, ARE IN ACCORDANCE WITH THE USA EXPORT ADMINISTRATION REGULATIONS. DIVERSION CONTRARY TO U.S. LAW IS PROHIBITED. U.S. LAW ALSO PROHIBITS DISPOSITION OF THESE COMMODITIES/TECHNICAL DATA TO ANY END-USER OR FOR ANY END-USE RELATED TO THE DESIGN, DEVELOPMENT, PRODUCTION, STOCKPILING, OR USE OF CHEMICAL, BIOLOGICAL, OR NUCLEAR WEAPONS, OR MISSILES, WITHOUT THE PROPER APPROVAL OF THE UNITED STATES GOVERNMENT.

ATI-ERP DEFINES THE GRAIN ORIENTATION NOMENCLATURE AS LONGITUDINAL (L) IS THE LENGTH, LONG TRANSVERSE (LT) IS THE WIDTH, AND SHORT TRANSVERSE (ST) IS THE THICKNESS OR GAUGE.

ATI FLAT ROLLED PRODUCTS HAS COMPLIED WITH ALL PRODUCER REQUIREMENTS OF AS6279.
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CONSIGNEE: Please Note-This consignment was turned over to the consignee for their use. The consignee is responsible for the proper use of the material. If any shortage or damage is discovered, have a full description made by transportation agent on waybill before signing.

WARNING

Safety Data Sheets for this product are available on our website, www.atimetals.com. A thorough review of the Safety Data Sheet for the grade of material purchased shall be performed prior to working with this product and all safety & health considerations outlined must be implemented.

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 ATI Specialty Rolled Products Order Acknowledgement.

Noreen Deloren
St. Manager Quality, Composite Quality Assurance

