



**MADE IN THE USA**  
**MILL TEST REPORT**

**PRESCOR, LLC**

P.O. BOX 9856 TULSA, OK 74157-0856  
800-333-4433 LOCAL: 918-224-6626  
888-PRESCOR FAX: 918-224-1780

www.prescor.com

FLANGED & DISHED \_\_\_\_\_ VARIOUS  
FLANGED ONLY \_\_\_\_\_ See each item  
DISHED ONLY \_\_\_\_\_  
HEMISPHERICAL \_\_\_\_\_ CIRCLE  
WELD CAPS \_\_\_\_\_ TEST PIECE  
**XX** 2:1 ASME ELLIPTICAL HEADS - TOLERANCE PER UG-81

CUSTOMER					CUSTOMER ORDER NO.					OUR JOB NO.			DATE		
TESCORP					F-0820-0351					200609			10/6/2020		
CODE	QTY.	SIZE O.D. & THK.	PLATE MFG'R.	HEAT NO.	SLAB NO.	ASTM NO.	YIELD PSI	TENSILE PSI	% ELONG.	BEND TEST	C	MN	P	S	SI
	2	(3/8")NOM 8-5/8"OD X 0.328"MIN	ATI	859398		SA240TP316/ 316L	SEE ATTACHED								
	2	(3/8")NOM 12-3/4"OD X 0.328"MIN	ATI	859398		SA240TP316/ 316L	SEE ATTACHED								

	THESE HEADS ARE HOT FORMED ABOVE 1650 DEGREES FAHRENHEIT, AIR COOLED AND NORMALIZED, AND ARE EXEMPT FROM THE HEAT TREATMENT REQUIREMENTS OF PARA UCS-79(d) OF THE ASME UNFIRED PRESSURE VESSEL CODE, SECTION 8.
	COLD FORMED. THESE HEADS NORMALIZED AFTER FORMING, PER UCS-79(d).
<b>XX</b>	SPECIAL MATERIAL FORMED PER REQUIREMENTS AND TEMPERATURE RANGE OF THAT MATERIAL'S SPECIFICATIONS, AND PER UG-79(a).
	TEST PIECES PER UCS 85-C.

We certify that this is a true copy of the original Mill Test Report now in our files.

By Sherry Tockey

**PRESCOR, LLC**

"This Certified Test Report has been delivered to a consignee of material purchased from PRESCOR, LLC to avoid the possibility of its misuse, on the redelivery of this report to a third party it must be recertified by and under the name of such Consignee."

**ALL PRESCOR HEADS ARE SEAMLESS AND FORMED PER UG-79.**



# Certificate of Test

*N. DeFerrari*  
 Norman DeFerrari - Sr. Manager, Quality

500 Green Street  
 Washington, PA 15301

Mill Information		Customer Information	
Cert Number	0203531-00	Name	ROLLED ALLOYS INC
Sales Order	50-119-508	PO	0181675-TUL
Cert Date	Jan-17-2020	PO Date	Nov-26-2019

<b>Sold to:</b> ROLLED ALLOYS INC PO BOX 310 TEMPERANCE, MI 48182	<b>Ship to:</b> ROLLED ALLOYS LP 6555 SOUTH 57TH W AVE TULSA, OK 74131
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### Material Information

"ATI 316/316L" STAINLESS STEEL PMP HOT ROLLED PLATE ANNEALED PICKLED COMMERCIAL CUT EDGE	
ASTM-A-240-18 ASTM-A-262-15 PRACTICE E AMS 5507H UNS S31600	ASME-SA-240 ED 2019 AMS 5524L R2014 UNS S31603

### Piece Information

Pcs	Gauge (in)	Width (in)	Length (in)	Heat #	Piece ID	Section Id	Lot #	Total Wt (lbs)
Item: 001	Cust-Id: 0006712		Govt-Contract-#:		Govt-DO-Rating:			
	Cust-Job:		ScheduleB:					
1	.3750	96.0000	240.0000	859398	CF59555	---	493942	2639
1	.3750	96.0000	240.0000	859398	CF59556	---	493942	2639
1	.3750	96.0000	240.0000	859398	CF59557	---	493942	2639

### Chemistry Testing

Element (wt %)	Requirements		Final Heat Analysis	
	Min	Max	859398	Loc
C	---	.030	.021	BN
MN	---	2.00	1.46	BN
P	---	.040	.033	BN
S	---	.030	< .001	BN
SI	---	.75	.31	BN
CR	16.00	18.00	16.25	BN
NI	10.00	14.00	10.10	BN
MO	2.00	3.00	2.05	BN
CU	---	.75	.45	BN
N	---	.10	.07	BN

RECEIVED  
 ROLLED ALLOYS  
 Receiving Inspection  
 By: *[Signature]*  
 Date: 1-28-20  
 HEAT # 859398  
 TRACER # 0591157US



**ATI**  
Flat Rolled Products

500 Green Street  
Washington, PA 15301

# Certificate of Test

*N. DeFerrari*

Noreen DeFerrari - Sr. Manager, Quality

### Mill Information

Cert Number 0203531-00  
Sales Order 50-119-508  
Cert Date Jan-17-2020

### Customer Information

Name ROLLED ALLOYS INC  
PO 0181675-TUL  
PO Date Nov-26-2019

## Chemistry Testing

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 by GFAA per ASTM E1184; Al and Ti (>=0.10%) by WDXRF per ASTM E572 otherwise by OES per ASTM E1086; Ta by ICP per ASTM E1479.

859398 - Material was produced by EF melting with AOD refining.  
USA melt and manufacture  
Material melted at ATI FRP Brackenridge (FRPB)

FRPB - ATI FRP BRACKENRIDGE 100 River Road Brackenridge, PA 15014

## Mechanical Testing

		LOT 493942	
Condition:		ANNEALED	
Direction:		TRANSVERSE	
Temperature:		ROOM TEMP	
Spec:			
Test Limit	Units	Result	Loc
YS 0.2% OFFSET	psi	40600.	TC
TENSILE	psi	82400.	TC
ELONG. IN 2"	%	64.	TC
RED OF AREA	%	65.	TC
HARDNESS	---	138. HBW	TC

When hardness is measured using the Brinell scale, the indentation measuring device is Type A.

Bend test passed per periodic test requirement.

## Mechanical Property Requirements

Condition:		ANNEALED	
Direction:		TRANSVERSE	
Temperature:		ROOM TEMP	
Spec:			
Test Limit	Units	Min	Max
YS 0.2% OFFSET	psi	30000.	---
TENSILE	psi	75000.	100000.

HEAT # 859398



TRACER # 0591157US



# Certificate of Test

*N. DeFerrari*  
 Niccolò DeFerrari - Sr. Manager, Quality

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 Washington, PA 15301

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## Mechanical Property Requirements

Condition:	ANNEALED		
Direction:	TRANSVERSE		
Temperature:	ROOM TEMP		
Spec:			
Test Limit	Units	Min	Max
ELONG. IN 2"	%	45.	---
RED OF AREA	%	---	---
HARDNESS	---	---	217. HBW

## Corrosion Testing

Test ID	Result Name	Test Result	Wt Loss	Units	Visual Exam	Pit Depth	Units	Bend	Loc	Requirements
LOT 493942	A-262 E/SCR A	STEP	---	---	---	---	---	---	TC	---

## Metallography - General

Test ID	Result Name	Condition	Test Result	Loc	Requirements
493942	GRAIN SIZE	ANNEALED	4.	TC	---

Grain size per ASTM E112; Magnification at 100X; Etchant used OXALIC ACID

## Certification Statements

Grade verification was performed spectroscopically.

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](http://www.atimetals.com).

Material does not have a continuous carbide network.

ATI Flat Rolled Products has complied with all producer requirements of A56279.

Material was solution annealed at 1900F (1038C) minimum for a time commensurate with thickness and rapidly cooled with air or water.

ATI Flat Rolled Products does not use mercury in the testing or production of its products.

No welds/weld repairs performed.

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; ASTM E112 for grain size; ASTM E10, E18, E92, & E384 for hardness; ASME B46.1 section 3 for surface roughness; AMS 2750 for laboratory heat treatment; ASTM E139 for stress rupture; ASTM E29 for rounding

ATI FRP products have not come in contact with radioactive materials during manufacturing or processing.

EN 10204:2005 3.1 certificate.

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TRANSFER # 0591157US



# Certificate of Test

*M. DeFerrari*  
 Morean DeFerrari - Sr. Manager, Quality

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 Washington, PA 15301

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## Certification Statements

### General Statements

The Finishing Location for ALL PIECES is ATI-FRP  
 The Shipping Location is ATI-FRP WASHINGTON, PA

TESTING WAS PERFORMED AT THE FOLLOWING LOCATIONS  
 BN = ATI FRP Brackenridge; 100 River Road; Brackenridge, PA 15014  
 TC = ATI FRP Natrona Heights; 1300 Pacific Avenue; Natrona Heights, PA 15065

Knowingly and willfully recording any false, fictitious or fraudulent statement or entry on this document may be punished as a felony under Federal Statutes, including Federal Law, Title 18, Chapter 47.

WARNING: Processing that makes fumes, dust, or solutions may cause lung disease. Please see Safety Data Sheet for further information which has been supplied to your Purchasing Department. For an additional copy, please refer to our website at:  
[www.atimetals.com/Products/ati-sds](http://www.atimetals.com/Products/ati-sds)

For access to online Certifications of Test, please register at [MyATI.ATIMetals.com](http://MyATI.ATIMetals.com)

This Certified Material Test Report is a true representation of the data on file. The reported results conform to the sales contract and specification(s) as set forth in ATI Flat Rolled Products order acknowledgement. This Certificate of Test may not be reproduced except in full without the written authorization of the company.

ATI Flat rolled Products website contains listing of material produced, general technical and contact information, and current quality and company accreditations including but not limited to ISO-9001, AS-9100, Nadcap, and ISO/IEC 17025. Please visit us at [www.atimetals.com](http://www.atimetals.com)

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