

Latrobe Specialty Steel Company  
2626 S. Ligonier St.  
Latrobe, PA 15650

# CERTIFICATE OF TEST

Production Order Number		Wgt. Shipped	Sales Order No.	Heat No.
		13930		D4118
Customer Order No./Req'n. No.				Delivery Number

Bill To: [REDACTED]

Ship To: 407210



USA



USA

**Material Description:**

(TO SIZE) 6.000 RND BLT (A21 AIRMLT (TRADEMARK-LATROBE SPECIALTY STEEL COMPANY) CUT SFCS PP X 81IN - 83IN CUT (SHORTER LGTHS WITH CUSTOMER APPROVAL) UNS S41429, IUT PER AMS-STD-2154 + SHEAR WAVE, LORAIN SPEC TQR-02 DTD 3/28/08 EXCEPT PARA 7.1, RE PARA 8.1 ONLY ELEMENTS SPECIFIED WILL BE TESTED/CERTIFIED, PATENT NO. 5310431, 6899773, 6890393, 7470336

**Chemical Analysis Wt%:**

Locn	C	Si	Mn	S	P	W	Cr	V	Ni	Mo	Co	Cu
PRODUCT	.093	.11	.42	<.001	.015	.01	10.82	.07	2.93	.49	.04	.16

Locn	Al	N	Sn	As	Ti	Cb	B	O	Fe
PRODUCT	.029	.007	.003	<.001	.25	.06	.0044	.002	Bal.

Hardness per ASTM E10-08 & ASTM A370-10: 277-285 HBW

Macroetch per ASTM A-604-07: 1A, 2A, 3A, 4A

Grain Size per ASTM E-112-96: 6

Material has been contact sonic inspected per AMS-STD 2154 (MIL-STD 2154 Notice 1 of 15 November 2004) Class A and found satisfactory.

During the manufacturing process, this material has not come in direct contact with Mercury or any of its compounds or any Mercury or Cobalt 60 or other radioactive sources containing device employing a single boundary of containment. Material is also weld and radioactive contamination free.

Country of origin (Manufacturing & Melting): USA

Testing methods for chemical analysis tested at Latrobe Specialty Steel are as follows: C, S, N, O & H = Combustion Si, Mn, W, Cr, V, Ni, Mo, Co, Cu, Al > 1%, Ti > 1%, Cb, Ta, Fe & Sn = X-Ray. Balance of elements analyzed on OE. Other testing methods not listed above have been conducted per certified material specification(s).

Latrobe Specialty Steel Company is registered to Quality Management System Standards: ISO 9001 and AS9100.

Need certs? Our air melt certs are available online at <http://www.latrobebesteel.com>

We certify this material to have been manufactured, inspected, and tested; and found the results to conform to all drawing and/or specification requirements and order requirements as applicable. The recording of false, fictitious or fraudulent statements or entries on the documents may be punishable as a felony under Federal Statute. This certificate or report shall not be reproduced except in full, without the written approval of Latrobe Specialty Steel Company.



Inspection Department

11/10/10

Date

Supervisor-Metallurgical Certification