

Cert Date: 03/14/13

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CLB PO 77770 WO 5881 C/A 10 F0E 80

8 pcs

O L D T O	COPPER & BRASS SALES INC 22355 WEST ELEVEN MILE ROAD SOUTHFIELD, MI 48034	S H I P T O	COPPER & BRASS SALES 4143 101ST STREET EDMONTON AB T6E 0A4, CANADA	CIL ORDER NO. P5-29859-2-01
				HEAT NO. A12313
	CIL INSIDE SALES REP. L HINMAN	SHIPPED FROM SOLVAY, NY USA	CUSTOMER P.O. 5400160038-R05	CUSTOMER PART NO. SSRD01751
QUANTITY SHIPPED 6426 LBS.				

DESCRIPTION OF MATERIAL

CRU 316/316L RTA SIZE 13.000 RD
AMS-5648-K AMS-5653-F ASME SA-479-10 ASTM-A276-10 ASTM-A479-11 CBS 316LNACE-0 (EX. 3.2,
3.4, 5.2.1) NACE-MR-01-75-03

CHEMICAL ANALYSIS

C	MN	P	S	SI	NI	CR	MO	CU	N
.030	1.72	.025	.022	.63	10.56	16.56	2.18	.30	.082

AS SHIPPED PROPERTIES

HARDNESS
BHN MID-RADIUS 140 HRC SURFACE 4.8
LONGITUDINAL
TENSILE PSI 82,870 GRAIN SIZE #
YLD. 2% PSI 39,560 4.5
% ELONG4D 58.4 INTERGRANULAR CORROSION TEST OK PER ASTM A262, PRACTICE A FOR E
RED/AREA% 75.7

*OK
with
3/25/13*

AS SHIPPED MATERIAL CONDITION

MATERIAL ANNEALED AT 1950 DEG. F. - WATER QUENCHED.
REDUCTION RATIO: 6.1:1

ADDITIONAL MATERIAL STATEMENTS

MATERIAL MELTED BY ELECTRIC FURNACE AND ARGON OXYGEN DECARBURIZATION REFINED.
ULTRASONIC PERFORMED TO ASTM-388/API6A - RESULTS ACCEPTABLE

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THANK YOU FOR SELECTING A QUALITY PRODUCT MELTED AND MANUFACTURED WITH PRIDE AT CRUCIBLE INDUSTRIES LLC LOCATED IN SOLVAY, NY 13209, USA. WE PROVIDE MATERIAL THAT IS FREE FROM MERCURY CONTAMINATION AND RADIATION AT THE TIME OF SHIPMENT. NO WELD REPAIR IS DONE. CRUCIBLE INDUSTRIES LLC HOLDS A CERTIFICATE OF REGISTRATION TO ISO 9001:2008, PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC 7/2 ANNEX 1, PARAGRAPH 4.3 AND WORKS UNDER THE GUIDELINES OF NCA 3800 USING QP MANUAL DATED 8/28/12. WE ARE COMPLIANT WITH EU DIRECTIVE 2002/95/EC (ROHS), REACH, EN 10204 * 2004 3.1, AND DFARS 252.225.7001,7002,7008,7009 MATERIAL IS OF NAFTA ORIGIN. MATERIAL TESTING IS PERFORMED ON A PROLONGATION OF THE BAR, IN COMPLIANCE WITH INDUSTRY STANDARDS ASTM A370, E8, E10, E18, E23, E45, E112, E381, E604, E572, E1019, ANDE1086. THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES, INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47. PRODUCTS, TECHNICAL DATA, TECHNOLOGY, AND SERVICES OF CRUCIBLE INDUSTRIES LLC ARE SUBJECT TO U.S. EXPORT CONTROLS UNDER THE APPLICABLE LAWS AND REGULATIONS OF THE UNITED STATES.

THE ABOVE MATERIAL WAS MANUFACTURED AND TESTED ACCORDANCE WITH ABOVE SPECIFICATIONS AND IS IN CONFORMANCE WITH THE SPECIFICATION REQUIREMENTS.
CRUCIBLE INDUSTRIES LLC

CERTIFIED BY

William Mastroe

WILLIAM MASTROE - MANAGER OF QUALITY AND PROCESS ENGINEERING