



575 STATE FAIR BLVD.
SOLVAY, NY 13209

A12313 (16") Certificate of Test

Cert Date: 06/21/13

REVISED COPY ORIGINAL SENT 01/10/13

C+B PO 77942 WO 5930 CPA 12 FOE 120

4 pcs

COPPER & BRASS SALES INC
22355 WEST ELEVEN MILE ROAD
SOUTHFIELD, MI 48034

COPPER & BRASS SALES
4143 101ST STREET
EDMONTON AB T6E 0A4, CANADA

CIL ORDER NO.
P5-29854-2-01

HEAT NO.
A12313

CIL INSIDE SALES REP.
L HINMAN

SHIPPED FROM
SOLVAY, NY USA

CUSTOMER P.O.
5400160415-R05

CUSTOMER PART NO.
SSRD01610

QUANTITY SHIPPED 5880 LBS.

DESCRIPTION OF MATERIAL

SIZE

CRU 316/316L RTA 16.000 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 153 HRC SURFACE 9.9

LONGITUDINAL

TENSILE PSI 84,660 GRAIN SIZE #4.0

YLD. 2% PSI 39,410

% ELONG4D 58.7 INTERGRANULAR CORROSION TEST OK PER ASTM A262, PRACTICE A FOR E

RED/AREA% 77.7

AS SHIPPED MATERIAL CONDITION

MATERIAL ANNEALED AT 1950 DEG. F. - HELD AT TEMP 30 MINUTES - WATER QUENCHED.
REDUCTION RATIO:4.0:1

ADDITIONAL MATERIAL STATEMENTS

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

*OK
6/19/13*

SV

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, CHAPTER47.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 - MANAGER OF QUALITY AND PROCESS ENGINEERING