NUCOR
FASTENER DIVISION

Post Office Box 6100
Saint Joe, Indiana 46785
Telephone 260/337-1600

LOT NO.
420575A

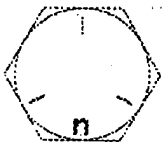
CUSTOMER NO/NAME
322 ZIEGLER BOLT & NUT

NUCOR ORDER # 158421
TEST REPORT SERIAL# FB594174
CUST PART #
TEST REPORT ISSUE DATE 3/05/19
DATE SHIPPED 8/26/19
CUSTOMER P.O. # 16184197
NAME OF LAB SAMPLER: DEANN WATSON, LAB TECHNICIAN

**********CERTIFIED MATERIAL TEST REPORT**********

NUCOR PART NO	QUANTITY	LOT NO.	DESCRIPTION
4110280	28200	420575A	1/2-13 X 1 1/2 GR 5 HX CAP

MANUFACTURE DATE 2/28/19 SCREW PLAIN



--CHEMISTRY MATERIAL GRADE -1035MR

MATERIAL NUMBER	HEAT NUMBER	**CHEMISTRY COMPOSITION (WT% HEAT ANALYSIS) BY MATERIAL SUPPLIER C	MN	P	S	SI	NUCOR STEEL - NEBRASKA
RM032994	100894946	.34	.80	.013	.018	.25	

--MECHANICAL PROPERTIES IN ACCORDANCE WITH SAE J429-14 AND ASTM A449-14

SURFACE HARDNESS (R30N)	CORE HARDNESS (RC)	PROOF LOAD 12100 LBS	TENSILE STRENGTH 6 DEG-WEDGE (LBS)	STRESS (PSI)
48.4	29.3	PASS	19620	138169
48.7	29.5	PASS	19690	138662
48.5	29.1	PASS	19760	139155
48.4	30.7			
50.0	29.7			
AVERAGE VALUES FROM TESTS				
48.8	29.7		19690	138662

PRODUCTION LOT SIZE 82600 PCS

--SURFACE QUALITY WITHIN LIMITS PRESCRIBED IN ASTM F788/F788M-13

--HEAT TREATMENT - AUSTENITIZED, OIL QUENCHED & TEMPERED (MIN 800 DEG F)

--DIMENSIONS PER ASME B18.2.1-2012

CHARACTERISTIC	#SAMPLES TESTED	MINIMUM	MAXIMUM
Width Across Corners	8	0.844	0.850
Screw Length	8	1.463	1.479
Threads	8	PASS	PASS

ALL TESTS ARE IN ACCORDANCE WITH THE LATEST REVISIONS OF THE METHODS PRESCRIBED IN THE APPLICABLE SAE AND ASTM SPECIFICATIONS. THE SAMPLES TESTED CONFORM TO THE SPECIFICATIONS AS DESCRIBED/LISTED ABOVE AND WERE MANUFACTURED FREE OF MERCURY CONTAMINATION.
THE STEEL WAS MELTED AND MANUFACTURED IN THE U.S.A. AND THE PRODUCT WAS MANUFACTURED AND TESTED IN THE U.S.A. PRODUCT COMPLIES WITH DFARS 252.225-7014. WE CERTIFY THAT THIS DATA IS A TRUE REPRESENTATION OF INFORMATION PROVIDED BY THE MATERIAL SUPPLIER AND OUR TESTING LABORATORY. THIS CERTIFIED MATERIAL TEST REPORT RELATES ONLY TO THE ITEMS LISTED ON THIS DOCUMENT AND MAY NOT BE REPRODUCED EXCEPT IN FULL. CERTIFICATION FORMAT MEETS EN10204 3.1

A2LA ACCREDITED

MECHANICAL FASTENER
CERTIFICATE NO. A2LA 0139.01
EXPIRATION DATE 12/31/19

NUCOR FASTENER
A DIVISION OF NUCOR CORPORATION

BOB HAYWOOD
QUALITY ASSURANCE SUPERVISOR

32994

NUCOR

Mill Certification

12/12/2018

MTR#:115399-1
Lot #:10089494620
2911 E NUCOR ROAD
PO BOX 309
NORFOLK, NE 68701 US
402-644-0200
Fax: 402-644-0329

Sold To: FASTENER IN
PO BOX 6100
SAINT JOE, IN 46785 US

Ship To: FASTENER IN2
6730 CR 60
SAINT JOE, IN 46785 US

Customer PO	196819	Sales Order #	10014875 - 6.12
Product Group	Wire Rod - Cold Heading Quality	Product #	1034979
Grade	1035MR	Lot #	10089494620
Size	0.5156"	Heat #	100894946
BOL #	BOL-211035	Load #	115399
Description	Wire Rod - Cold Heading Quality Round 33/64" 1035MR COIL 5200 lbs	Customer Part #	005008
Production Date	11/29/2018	Qty Shipped LBS	46770
Product Country Of Origin	United States	Qty Shipped EA	9
Original Item Description		Original Item Number	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Melt Country of Origin : United States — Melting Date: 11/18/2018

C (%)	Mn (%)	P (%)	S (%)	Si (%)	Ni (%)	Cr (%)	Mo (%)	Cu (%)	Ti (%)	V (%)	B (%)
0.34	0.80	0.013	0.018	0.25	0.06	0.10	0.02	0.18	0.001	0.004	0.0000
Nb (%)	Sn (%)	Al (%)	Pb (%)	Ca (%)	Zn (%)						
0.003	0.008	0.00	0.000	0.001	0.006						

Reduction Ratio 210.20 : 1

Comments:

Coarse Grain Practice
Selenium,Tellurium,Lead,Bismuth or Boron were not intentionally added to this heat.
All manufacturing processes of the steel materials in this product, including melting, have been performed in the United States.
All products produced are weld free.
Mercury, in any form, has not been used in the production or testing of this material.
Test conform to ASTM A29-15, ASTM E415 and ASTM E1019-resulphurized grades or applicable customer requirements.
All material melted at Nucor Steel Nebraska is produced in an Electric Arc Furnace.
Strand Cast
Tests included in ISO 17025 scope: Chemistry, Tensile, Brinell Hardness, Rockwell Hardness, Inclusion, and Grain Size.
Exporting Country-USA
Sales@nucorne.com

Jim Hill

NBMG-10 January 1, 2012

Jim Hill, Division Metallurgist

INDIANA GALVANIZING, LLC

Hot-Dip Galvanizing
51702 Lovejoy Dr.
Middlebury IN, 46540
Phone: 574-822-9102 Fax: 574-822-9106

Ziegler's Bolt & Nut House
4848 Corporate Street S.W.
Canton, OH 44706-1974

PO: 16185954
Date: 11/18/2019

Hot-Dip Galvanizing Certification

Indiana Galvanizing certifies that samples representing listed lot(s) have been tested and inspected as required by applicable specifications. The results of this inspection and testing demonstrates that the requirements for ASTM F2329, including the requirements ASTM A153 that are referenced within the specification, have been met and have been galvanized in Middlebury, Indiana of the United States of America.

Kettle Temperature (Must be between 815 and 850 Degrees Fahrenheit) 840

Mil Readings

Description	Lot Number	High	Low	Average	Quantities
3/4-10X2 HEX CAP SCREW GR DOMESTIC HDG	426263A	4.30	2.30	3.45	300
5/8-11X1-3/4 HEX CAP SCREW GR 5 DOMESTIC HDG	408299A	4.20	2.25	3.35	175
3/4-10X1 3/4 HEX CAP SCREW GR 5 GALV.	418228A	4.15	2.15	3.40	120
1/2-13X1-1/2 HEX CAP SCREW GR 5 DOMESTIC HDG	420575A	4.20	2.10	3.30	1200
5/8-11X9-3/4 A325 STRUCTURAL BOLT HDG	48765	4.10	2.20	3.20	25
1-1/4-7X5-1/4 A325 STRUCTURAL BOLT HDG	49576	4.15	2.25	3.35	50
3/4-10X5-3/4 A325 STRUCTURAL BOLT HDG	806246	4.20	2.30	3.40	1000

Amy Jarzynski

INDIANA GALVANIZING, LLC

~~Hot-Dip Galvanizing~~

Quality Manager or Assignee
51702 Lovejoy Dr.
Middlebury IN, 46540
Phone: 574-822-9102 Fax: 574-822-9106