

James A. McBrady, Inc.

PLANT: PLEASANT HILL ROAD, SCARBOROUGH, MAINE 04074

MAIL: P.O. BOX 8239, PORTLAND, MAINE 04104
(207-883-4176)

Nonconformance Procedure

1. Material that is found during the inspection processes to not be in conformance with contract documents is noted in fabrication log or on detail drawings and returned to the fab area.
2. Supervisory personnel are notified and take corrective action if necessary.
3. Material discrepancies will be reinspected, and if found acceptable, will be so noted in the fabrication log or on detail drawings and will be sent on for shipping.

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Final Inspection

1. All material furnished by James A. McBrady, Inc. is to be given a final visual inspection by quality control prior to shipment for completeness and conformance with approved shop drawings.
2. Shop supervision or quality control keeps a record of each piece fabricated.

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High Strength Bolted Connection

Structural joints using ASTM A325 and A490 bolts.

Ref: AISC Section 5, 9th edition

1. Bolted parts shall fit solidly together when assembled in properly aligned holes and shall not be separated by gaskets or any other interposed compressible material.

All joint surfaces, including those adjacent to the bolt heads, nuts, or washers, shall be free from scale, except tight mill scale, and shall be free from burrs, dirt and other foreign material that would prevent solid seating of the parts. Paint is permitted unconditionally in bearing-type connections. Contact surfaces with friction-type joints shall be free of all paint, lacquer or other coatings or as specified in contract documents.

2. Washers

A3. 5 fasteners may be installed without hardened washers when tightening is by the turn-of-nut method. A490 bolts installed by the turn-of-nut method and A325 or A490 bolts tightened by the calibrated wrench method (i.e., by torque control), shall have a hardened washer under the element (nut or bolt head), turned in tightening. Additionally, a hardened washer shall be used with all A490 bolts under the element not turned in tightening if the material against which it bears has a specified minimum yield point less than 40 KSI.

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Where an outer face of the bolted parts has a slope greater than 1:20 with respect to a plane normal to the bolt axis, a bevelled washer shall be used to compensate for the lack of parallelism.

3. Tightening: Turn-of-nut tightening

When the turn-of-nut method is used to provide the tension there shall first be enough bolts brought to a "snug tight" condition to ensure that the parts of the joint are brought into good contact with each other. Snug tight is defined as the tightness attained by a few impacts of an impact wrench or the full effort of a man using an ordinary spud wrench. Following this initial operation, bolts shall be placed in any remaining holes in the connection and brought to snug tightness. All bolts in the connection shall then be tightened additionally by the applicable amount of nut rotation specified in Table 5 with tightening progressing systematically from the most rigid part of the joint to its free edges. During this operation, there shall be no rotation of the part not turned by the wrench.

Reuse

A490 bolts and galvanized A325 bolts shall not be reused. Other A325 bolts may be reused if approved by the engineer responsible. Retightening previously tightened bolts which may have been loosened by tightening of adjacent bolts shall not be considered as a reuse.

Table 5. Nut Rotation from Snug Tight Condition^{a, b}

Bolt length (Under side of head to end of bolt)	Disposition of Outer Face of Bolted Parts		
	Both faces normal to bolt axis	One face normal to bolt axis and other sloped not more than 1:20 (beveled washer not used)	Both faces sloped not more than 1:20 from normal to the bolt axis (beveled washer not used)
Up to and including 4 diameters	$\frac{1}{3}$ turn	$\frac{1}{2}$ turn	$\frac{2}{3}$ turn
Over 4 dia- meters but not exceed- ing 8 dia.	$\frac{1}{2}$ turn	$\frac{2}{3}$ turn	$\frac{5}{8}$ turn
Over 8 dia- meters but not exceed- ing 12 dia. ^c	$\frac{2}{3}$ turn	$\frac{5}{8}$ turn	1 turn

^aNut rotation is relative to bolt regardless of the element (nut or bolt) being turned. For bolts installed by $\frac{1}{2}$ turn and less, the tolerance should be plus or minus 30 degrees; for bolts installed by $\frac{2}{3}$ turn and more, the tolerance should be plus or minus 45 degrees.

^bApplicable only to connections in which all material within the grip of the bolt is steel.

^cNo research has been performed by the Council to establish the turn-of-nut procedure for bolt lengths exceeding 12 diameters. Therefore, the required rotation must be determined by actual test in a suitable tension measuring device which simulates conditions of solidly fitted steel.

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The following A.I.S.C. checklist is used by company personnel to ensure that policies are followed according to A.I.S.C. standards.

INSPECTION-EVALUATION CHECK LIST CONVENTIONAL STEEL BUILDING STRUCTURES

NO.	ITEM	COMMENTS	YES	NO
Application Screen				
App1 (E)	Is there a written quality policy statement describing company policy, goals and commitment to quality?	_____ _____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
App2 (E)	Is there a description of the organization with positions established to carry out quality functions?	_____ _____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
App3 (E)	Are biographical information and qualifications of key managers shown and matched to the positions filled as showing the organization description?	_____ _____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
App4 (E)	Is there a list of major equipment and a facility plan?	_____ _____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
App5 (E)	Is there a list of recent projects showing experience in the type of work for which certification is sought?	_____ _____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Procedures				
App7 (E)	Is there a bolt installation procedure?	_____ _____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
App8 (E)	Is there an acceptable inspection procedure?	_____ _____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
App9 (E)	Is there an acceptable non-conformance procedure?	_____ _____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Administration				
App11 (E)	Is the information required for program administration shown?	_____ _____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

INSPECTION-EVALUATION CHECK LIST Conventional Steel Building Structures

NO.	ITEM	COMMENTS	YES	NO
<u>GENERAL MANAGEMENT</u>				
Policy				
A.1.a (E)	Is there a written policy statement adequately describing company policy, goals and commitment to quality?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Organization				
A.2.a	Are functions effecting quality assigned to positions that are adequately defined by job descriptions and an organization chart?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
A.2.b (C)	Are personnel qualified for, and capable of, performance of their duties? (Qualifications include continuing education and/or society activities for professionals.)	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Procedures				
A.3.a (C)	Does management review project quality requirements prior to production, allocate adequate resources, assign or contract for project activities by suitably qualified personnel and select or create necessary quality procedures for the work?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
A.3.b (E)	Are quality requirements particular to projects (like coating requirements, weld restrictions, etc.) effectively communicated to plant departments?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

INSPECTION-EVALUATION CHECK LIST Conventional Steel Building Structures

NO.	ITEM	COMMENTS	YES	NO
A.3.c	Are fabrication and erection requirements (like adjustment needs, erection aids and sequencing of NDT) and priorities reviewed prior to production?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
A.3.d	Are drawing, material and production due dates scheduled (by suitable areas or sequences) and are schedules disseminated to appropriate personnel?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
A.3.e	Are drawing, material and production schedules maintained and current throughout the year?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
A.3.f	Are requests for information documented?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Experience				
A.4.a. (E)	Has the fabricator supplied simple buildings or provided training to his men?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Footnote 1

Qualifications:

Familiarity with quality and specification requirements and construction practices.

One position in any category may be short of the requirement to allow for personnel changes.

INSPECTION-EVALUATION CHECK LIST Conventional Steel Building Structures

NO.	ITEM	COMMENTS	YES	NO
ENGINEERING & DRAFTING				
Organization				
B.1.a	Is the Drafting Mgr. familiar with pertinent codes and specs.?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If there is an in-house drafting room Items B.1.b-B.1.d are to be evaluated.				
B.1.b	Do drafters have the ability to transfer the material requirements noted on the design drawings to advance bills of material for their use by the Purchasing Dept.?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.1.c	Do drafters have adequate knowledge of the applicable material specifications?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.1.d	Do drafters have adequate knowledge of mill rolling practices as they affect structural steel?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If detail drawings are sublet, items B.1.e-B.1.g are to be evaluated.				
B.1.e (C)	Are details sublet to a qualified structural drafting firm that has a drafting manager who is an engineering technician (some trade school or college training and/or experience) and is familiar with codes and specifications?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.1.f (C)	Does the in-house drafting manager assure that instructions are furnished to the sublet drafters?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

INSPECTION-EVALUATION CHECK LIST Conventional Steel Building Structures

NO.	ITEM	COMMENTS	YES	NO
B.1.g	Does the in-house drafting mgr. take action to assure quality compliance by outside detailers?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	If there is an in-house Engineering Department items B.1.h & B.1.i are to be evaluated.			
B.1.h	Is there a person capable of supervising in-house design or evaluating and coordinating outside design?	<u>NA</u>	<input type="checkbox"/>	<input type="checkbox"/>

B.1.i	Does the company have adequate in-house design engineers or does it consistently use consultants qualified by registration or experience?	<u>OUTSIDE SOURCES</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Procedure			
B.2.a	Does the drafting department maintain a current log of design drawings and specification receipts with the latest revisions and dispositions?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

B.2.b	Is there a procedure for the control, distribution and revision of job specifications and special provisions to appropriate plant and quality control personnel?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

B.2.c	Are there provisions to assure that obsolete drawings are destroyed or isolated from use throughout the plant? (May be assured by other departments.)	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

B.2.d (C)	Does the drafting department maintain a current log of shop detail drawings with latest approval, revisions and dispositions?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

INSPECTION-EVALUATION CHECK LIST Conventional Steel Building Structures

NO.	ITEM	COMMENTS	YES	NO
B.2.e	Are drafting practices coordinated with erection requirements?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.2.f	Are company drafting standards adequate?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.2.g (C)	Are detail drawings checked by qualified personnel?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.2.h (E)	Are all detail drawings reviewed or approved by the owner?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

INSPECTION-EVALUATION CHECK LIST Conventional Steel Building Structures

NO.	ITEM	COMMENTS	YES	NO
	Facilities and Resources			
B.3.a (C)	Is there an adequate and current library of specifications including:		<input checked="" type="checkbox"/>	<input type="checkbox"/>
	AISC:			
	Manual Steel Const ✓			
	Vol II Conns. ✓			
	Det'l'g Steel Const ✓			
	Quality Criteria & Insp. Stds. ✓			
	ANSI/AWS ✓			
	D1.1 ✓			
	ASTM as req'd ✓			
	SSPC for paint ✓			

INSPECTION-EVALUATION CHECK LIST Conventional Steel Building Structures

NO.	ITEM	COMMENTS	YES	NO
PROCUREMENT				
Organization				
C.1.a	Are buyers familiar with ordering information required to control variables effecting quality of purchased material?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Procedures				
C.2.a (E)	Is material ordered in accordance with the design drawings and specifications?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.2.b (C)	Are procedures in effect to assure subcontract fabrication is ordered to contract requirements?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.2.c (C)	Where a level of certification is required by contract documents, is appropriate fabrication sublet to fabricator holding the required certification?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.2.d	Are procurement sources adequately evaluated?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.2.e	Are all other purchased materials (bolts, paint, castings, etc) checked for conformance to purchasing documents upon receipt?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.2.f	Are controls set up to assure adequate identification of incoming purchased items?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.2.g (E)	Are records maintained and is a written procedure functioning to assure traceability of grade, and where required, heat numbers and material test reports for special requirements?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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NO.	ITEM	COMMENTS	YES	NO
C.2.h (E)	Are manufacturer's test reports or certificates of conformance of bolts, weld wire, paint, etc. kept on file?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.2.i (E)	Are mill test reports kept on file?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Facilities and Resources				
C.3.a	Are current copies of ASTM specifications available to purchasing personnel?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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NO.	ITEM	COMMENTS	YES	NO
OPERATIONS				
Organization				
D.1.a (E)	Is shop supervision conversant with current workmanship provisions of AWS & AISC specifications?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.1.b (C)	Does the fabricator have a competent welding technician, supervisor or outside expert available on call?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.1.c (C)	Are welders qualified per ANSI/AASHTO/ AWS?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Procedures & Practices				
Material Receipt & Storage				
D.2.a i (C)	Is the grade of material and marking verified prior to fabrication? (see note 1)	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.2.a ii (C)	Are welding electrodes, flux, bolts and paint stored properly and identified? (including RCT lot when applicable)	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.2.a. iii (C)	Are flux and rod ovens adequate and operating per AWS latest adoption?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fabrication				
D.2.b i (E)	Is fabrication in accordance with contract documents and specifications and are finished products shipped in accordance with approved detail drawings?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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NO.	ITEM	COMMENTS	YES	NO
D.2.b ii (E)	Is there a procedure for handling revisions and voided drawings?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.2.b iii	Is material inspected for conformance to ASTM A6?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.2.b iv (E)	Is material identity retained during fabrication and restocking?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.2.b v	Do welders identify welds they make?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.2.b vi	Do welders know, comply with and check their welds to the workmanship and technique requirements of AISC & AASHTO/AWS?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.2.b vii	Is workmanship checked throughout the fabrication process to conform to contract documents and specifications? Is checking in accordance with the company inspection procedure?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.2.b viii	Are approved written weld procedures in close proximity to and used by the welders?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.2.b ix (C)	Are written bolt tightening procedures used? (see note 2)	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.2.b x	Are provisions for agitation, temperature and humidity measurement and methods of paint application adequate and functional?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

INSPECTION-EVALUATION CHECK LIST Conventional Steel Building Structures

NO.	ITEM	COMMENTS	YES	NO
D.2.b xi	Are provisions for wet & dry film measurement and control adequate & functioning?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.2.b xii	Are there provisions for suitable loading blocking and bracing for shipment?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Non-conformances				
D.2.c i (E)	Is there a functioning, written procedure for disposition of non-conforming material or work in-process rejected by QC personnel?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.2.c ii	Is an effective system used to indicate conforming or non-conforming work in progress?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.2.c iii	Does the procedure include provision for action to avoid future non-conforming work?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Equipment Condition				
D.2.d i (C)	Are welding machines periodically checked to ensure correct amp and volt readings and is a record kept? (except SMAW)	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.2.d ii	Is manual welding equipment that is in use in acceptable operating condition?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Facilities and Resources				
D.3.a	Does the fabricator have automatic or semi-automatic equipment for making continuous welds?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

INSPECTION-EVALUATION CHECK LIST

Conventional Steel Building Structures

NO.	ITEM	COMMENTS	YES	NO
D.3.b	Does the fabricator have mechanically-guided burning equipment?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.3.c	Does the fabricator have mechanical paint agitators and other painting equipment? (May be NA if a qualified subcontractor is used for painting.)		<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.3.d	If the fabricator is involved in metalizing and stud welding, is his equipment adequate? (May be NA depending on the type of work)	NA	<input type="checkbox"/>	<input type="checkbox"/>
D.3.e	Does the fabricator have adequate and accurate hole-making equipment? (Punches and drills)		<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.3.f	Does the fabricator have adequate and accurate cutting and finishing equipment? (Shears, saw, milling machine, planer and/or grinder.)		<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.3.g	Does the fabricator have material handling equipment including cranes to move material without damage?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.3.h	Is housekeeping adequate?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.3.i	Is the air supply adequate?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.3.j	Is the electrical supply adequate?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
D.3.k	Does the operations manager have space and assistance to permit efficient performance?		<input checked="" type="checkbox"/>	<input type="checkbox"/>

INSPECTION-EVALUATION CHECK LIST Conventional Steel Building Structures

NO.	ITEM	COMMENTS	YES	NO
<u>QUALITY CONTROL</u>				
Organization				
E.1.a	Are there qualified shop inspectors?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.1.b	Is there a functioning program for training shop inspectors?	_____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.1.c	Does the QC organization include at least one certified level II magnetic particle inspection technician certified in accordance with ASNT-TC-1A on staff or available from outside sources?	_____ _____ _____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.1.d	Is there a qualified testing service available and used if required?	_____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Procedures and Practices				
E.2.a (C)	Is there a written quality assurance system and are quality procedures followed?	_____ _____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.2.b	Is there separation of responsibility for the Production Supervision function and the Quality Control Supervision function?	_____ _____ _____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.2.c	Is the in-process and final inspection procedure implemented?	_____ _____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.2.d (E)	Does Quality Control have authority to stop and responsibility to inform the operating supervisor of non-conforming work?	_____ _____ _____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.2.e	Is a record kept of all inspections such as by noted detail drawings?	_____ _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

INSPECTION-EVALUATION CHECK LIST Conventional Steel Building Structures.

NO.	ITEM	COMMENTS	YES	NO
E.2.f	Is a check made to ensure that approved welding procedures are disseminated and followed in the shop?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.2.g	Is surface preparation (including grinding and fins) checked prior to painting?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.2.h	Is the coating checked after application?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.2.i	Are there adequate procedures for liaison with outside inspectors?	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Facilities and Resources				
E.3.a (C)	Do inspectors have the following equipment available? Tapeline ✓ Welding gages ✓ Tag system	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.3.b	Is the following equipment available? X-ray incl. viewing rm & viewer UT scope MPT equipt. LPT equipt Isotope	_____ NA _____	<input type="checkbox"/>	<input type="checkbox"/>
E.3.c	Are there reference standards for periodically calibrating: Paint gages Tapeline NDE equipt. Torque wrenches (Skidmore)	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Cert Summary Page

HAYDON BOLTS, INC.

JAMES A. MC BRADY INC.

Customer PO 13504

Invoice No. B6070541

Invoice Date 07/17/06 Sales Order K01734

Cert No Inv Line No Item No

Assembly No Haydon PO

28923 10000 HBAG069400

110

518591

A46194

Description: 3/4(10)X 14" HEX BOLT A307A HDG 6" RT

Manufacturer: STEEL CITY BOLT & SCREW LLC.

24023

30000 HNAG075

110

C OF C

A43690

Description: 3/4(10) HEX NUT A563A HDG

Manufacturer: STELFAST FASTENERS INC.

22267

40000 W FAG075

110

C OF C

A41382

Description: 3/4 FLAT ROUND WASHER F844 HDG

Manufacturer: COATESVILLE WASHER CO.

P.O. # 13504

HAYDON BOLTS, INC.

JAMES A. MC BRADY INC.

Invoice No. B6070541

Cert No Inv Line No Item No

28923 10000 HBAG069400

Invoice Date 07/17/06

Quantity Lot No

110

Customer PO 13504

Sales Order K01734

Heat

518591

Assembly No

Haydon PO

A46194

"WE PUT THINGS TOGETHER"

JUN 29 2006

Steel City



Bolt & Screw, LLC

PHONE 205 / 942-4567
FAX 205 / 940-9727
www.boltscrew.com

POST OFFICE BOX 1747 / 230 WEST VALLEY AVENUE
BIRMINGHAM, ALABAMA 35209

HAYDON BOLT
ADAMS AVE & UNITY ST.
PHILADELPHIA PA 19124

PO#: A46194

THIS IS TO CERTIFY THAT THE MATERIAL LISTED BELOW WILL CONFORM
TO THE FOLLOWING SPECIFICATIONS"

<u>MATERIAL</u>	<u>FINISH</u>	<u>QTY</u>	<u>DESCRIPTION</u>	<u>HEAT#</u>
A307	A153	1033	3/4 X 14 HB	518591

SINCERELY,

NOTARY PUBLIC AFFIRMED AND
SUBSCRIBED THIS DAY OF

6-23-2006

RECEIVED

BIRMINGHAM | ATLANTA | JACKSONVILLE | HOUSTON



Metalplate Galvanizing, Inc.

STEEL CITY BOLT & SCREW
P.O. BOX 1747
BIRMINGHAM, ALABAMA 35201

HAYDON BOLT

A46194

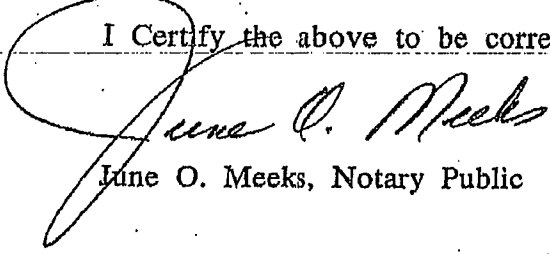
WE CERTIFY THAT THE MATERIAL ON YOUR ABOVE ORDER WAS GALVANIZED IN
ACCORDANCE WITH SPECIFICATIONS SET FORTH IN ASTM STANDARD
SPECIFICATION DESIGNATIONS:

<u>FINISH</u>	<u>DESCRIPTION</u>	<u>HEAT#</u>
A153	3/4 X 14 HB	518591

METALPLATE GALVANIZING, INC.


Donald E. Crowe, Plant Manager

I Certify the above to be correct.


June O. Meeks, Notary Public

Corporate Offices
1120 39th Street North
Post Office Box 966
Birmingham, Alabama 35201-0966
Telephone (205) 595-4700
Fax (205) 595-7800

Birmingham Plant Number 1
757 44th Street North
Post Office Box 966
Birmingham, Alabama 35201-0966
Telephone (205) 595-1106
Fax (205) 591-4659

Birmingham Plant Number 2
1120 39th Street North
Post Office Box 966
Birmingham, Alabama 35201-0966
Telephone (205) 595-7103
Fax (205) 595-2985

SHEFFIELD

Steel Corporation

P.O. Box 218 Sand Springs, OK 74063

Certified Mill Test Report**Sold To:**STEEL CITY BOLT & SCREW, INC.
P.O. BOX 1747

BIRMINGHAM, AL 35201

Attn: HENRY LEONARD

Fax #: (205) 940-9727

Ship To:

STEEL CITY BOLT & SCREW, INC.

230 WEST VALLEY AVENUE

PH:205-942-4567

BIRMINGHAM, AL 35201

Fax #: (205) 940-9727

Ship Date:	Print Date:	Release No:	Mill Order No:	Customer Order:	BOL No:	Carrier:
12/08/2005	12/8/2005	M6544B	10-AL0015-000138-01	VERB KENN 120705	65946	LOADS INC. AS BROKER
Product:	Grade:	Size:	Length:			
ROUND SS-STD	A36	0.6770"	20' 0"			

Grade Description: ASTM A36 & F1554-36 - WELDABLE


Heat	PCS / BDLs	Pounds
0518591	171	4196
0519442	840	20612

Chemical Analysis:

Heat	C	Mn	P	S	Si	Cu	Cr	Mo	Ni	Sn	Cb	V
0518591	0.15	0.70	0.015	0.020	0.21	0.24	0.09	0.03	0.08	0.010	0.003	0.003
0519442	0.15	0.74	0.009	0.023	0.21	0.19	0.09	0.03	0.07	0.008	0.001	0.003

Physical Properties:

Heat	Yield (psi / Mpa)	Tensile (psi / Mpa)	Elongation % 8" gauge
0518591	50,080 psi / 345 Mpa	67,890 psi / 468 Mpa	27.5
0519442	49,400 psi / 341 Mpa	67,900 psi / 468 Mpa	28.0

By: 
Quality Assurance Department

This is to certify that chemical and/or test results are a true copy of records contained in our company. Sheffield Steel Products are 100% melted and manufactured in the U.S.A.
Material is produced by continuous casting and not repaired by welding.

HAYDON BOLTS, INC.

JAMES A. MC BRADY INC.

Invoice No. B6070541

Cert No. Inv Line No Item No

24023 30000 HNAG075

Customer PO 13504

Invoice Date 07/17/06

Quantity Lot No

110 C O F C

Sales Order K01734

Heat

C O F C

Assembly No

Haydon PO

A43690



STELFAST[®] INC.

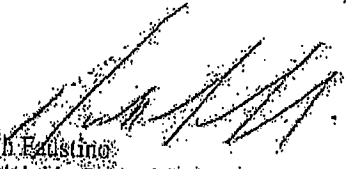
ISO 9002 / QS 9000 CERTIFIED

SALES OFFICE
901 - 17th Avenue
Prospect Park, PA 19076
Phone: (877) 999-7027
(610) 534-5624
Fax: (610) 534-5664

Certificate of Compliance

To Whom It May Concern:

We certify that the products shown in our catalog conform to IFI standards.


Ralph Faustino
Philadelphia Sales Manager

E-mail: info@stelfast.com Website: www.stelfast.com

Atlanta • Cleveland • Dallas • Edmonton • Houston • Montreal • Toronto

HAYDON BOLTS, INC.

JAMES A. MC BRADY INC.

Invoice No. B6070541

Cert No Inv Line No Item No

22267 40000 WFAG075

Customer PO 13504

Invoice Date 07/17/06

Sales Order K01734

Quantity Lot No

110 C OFC

Assembly No

Haydon PO

A41382



COATESVILLE WASHER COMPANY / ALAMER

CERTIFICATE OF COMPLIANCE

TO: HAYDON BOLTS, INC.
1181 UNITY STREET
PHILADELPHIA, PA 19124

DATE: NOVEMBER 15, 2004

PART: WASHERS, STEEL, PLAIN (FLAT), UNHARDENED FOR GENERAL
USE.

SPEC: ASTM F844 & ANSI B18.22.1

FINISH: PLAIN, ZINC & CLEAR DICHROMATE, HOT DIP GALV. &
MECH. GALV.

GENTLEMEN:

I HEREBY CERTIFY THAT THE ABOVE SUPPLIES CALLED FOR BY
PURCHASE ORDER/CONTRACT WERE MANUFACTURED IN CHINA USING
MILD STEEL, IN ACCORDANCE WITH ALL APPLICABLE SPECIFICATIONS,
AND THAT SUCH SUPPLIES WERE IN THE QUANTITY AND QUALITY
CALLED FOR AND WERE IN ALL RESPECTS IN ACCORDANCE WITH THE
APPLICABLE SPECIFICATIONS. ALL DIMENSIONAL INSPECTION
REPORTS ARE ON FILE AND AVAILABLE FOR REVIEW UPON REQUEST.
CHEMICAL & PHYSICAL REPORTS ARE NOT AVAILABLE SINCE THEY ARE
OPTIONAL AND NOT REQUIRED BY THE ABOVE REFERENCED
SPECIFICATIONS.

COATESVILLE WASHER COMPANY

BY:

A handwritten signature in dark ink, appearing to read 'Robert Munnich', written over a horizontal line.

GENERAL MANAGER

CHAPARRAL STEEL
CERTIFIED MATERIAL TEST REPORT

Order Date: 06/29/2006

PO No: C19842

Mill Order No: 3170684

Load No: 1043200

Manifest No: 1760711

Ship To: 1

INFRA-METALS CORPORATION-CT, R INFRA-METALS CORPORATION-CT

DIV PREUSSAG INTERNATIONAL CO 8 PENT HIGHWAY

8 PENT HWY

WALLINGFORD

06492

CT

US

CT

US

GRADE

992/572-50

LENGTH

35 FT / 10.668 M

PRODUCT

WF BEAMS

SIZE

W 8 X 58# / W200 X 86

SPECIFICATION

ASTM A6-05a, A992-04a, A572-04

HEAT NO: 30304500

C	.08	Mn	1.07	P	.009
---	-----	----	------	---	------

PHYSICAL PROPERTIES

Yield Strength

KSI

MPa

54.6

376.5

55.4

382.0

Tensile Strength

KSI

MPa

71.3

491.6

71.9

495.7

Specimen Area

Sq In

Sq cm

1.211

7.81

1.216

7.85

Elongation

%

Gage Length

8In

200 mm

23.5

23.5

8In

200 mm

Bend Test

Dia. Result

%

NB

.022

CE

.3

CHEMICAL ANALYSIS

All manufacturing processes of this product, including electric arc melting and continuous casting, occurred in the U.S.A. CMTA complies with DIN EN 10204 3.1.B

"I hereby certify that the contents of this report are correct and accurate. All tests and operations performed by this material manufacturer or its sub-contractors, when applicable, are in compliance with the requirements of the material specifications and applicable purchaser designated requirements."

Signed: Tom L. Harrington Quality Assurance Manager

Date: Jul. 01, 2006 Signed:

Notary Public (if applicable)

Date:

Page: 10 of 25

DATE	6/15/06
INVOICE NO	51537
BILL OF LADING	789939
CUSTOMER NO	9310
CUSTOMER P.O.	P C18815 PF

NUCOR-YAMATO STEEL CO.
P.O. BOX 1228 • BLYTHEVILLE, AR 72316

S
H
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T
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INFRA-METALS CORP
8 PENT HIGHWAY
TRACK # 953
WALLINGFORD, CT 06492

CERTIFIED MILL TEST REPORT

100% MELTED AND MANUFACTURED IN U.S.A.
All shapes produced by Nucor-Yamato Steel are cast and rolled to a fully killed and fine grain practice.

ASTM A992/A992M-04a A572/A572M GR50-04
ASTM A709/A709M-03a GR50 (345)
ASTM A709/A709M-03a GR50S (345S)
ASTM A6/A6M-05a

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INFRA-METALS CORP.
8 PENT HIGHWAY
WALLINGFORD, CT 06492

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ITEM #	ITEM DESCRIPTION	QTY	HEAT #	MECHANICAL PROPERTIES						CHEMICAL PROPERTIES											
				YIELD TO TENSILE RATIO	YIELD STRENGTH	TENSILE STRENGTH	ELONG	CHARPY IMPACT		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Cb	CE
					PSI	PSI	%	TEMP	IMPACT ENERGY												
					MPa	MPa	%	" F	FT-LBS									Sn	Pcm		CI
1	W08 - 58.0	1	275679	.70	52000	74000	25			.07	1.26	.025	.026	.30	.26	.12	.14	.04	.01	.024	.35
	W200 x 86.0			.70	52000	74000	25											.01	.16		
	10.668 M				359	510	25														
2	W08 - 58.0	4	275681	.71	53000	75000	24			.09	1.30	.025	.026	.32	.27	.11	.13	.04	.02	.028	.38
	W200 x 86.0			.70	52000	74000	25											.01	.19		
	10.668 M				359	510	25														

Pcm = $\frac{C + Mn + 5(Cu + Ni)}{100}$ (A572/A572M-04a)

CARBON EQUIVALENT: CE = CE(IIW) = $C + \frac{Mn}{6} + \frac{(Cr + Mo + V)}{5} + \frac{(Ni + Cu)}{15}$

Corrosion Index: $CI = 24.01(\%Cu) + 3.82(\%Ni) + 1.20(\%Co) + 1.40(\%S) + 17.24(\%P) + 7.34(\%Cu)(\%Ni) + 8.10(\%Ni)(\%P) + 33.24(\%Cu)^2$

ELONGATION BASED ON 8.00 INCH GAUGE LENGTH

I hereby certify that the contents of this report are accurate and correct. All test results and operations performed by this material manufacturer are in compliance with the requirements of the material specifications, and when designated by the purchaser, meet the applicable specifications.

Greg Lomell

QUALITY ASSURANCE

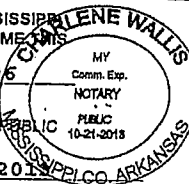
CUSTOMER COPY

STATE OF ARKANSAS COUNTY OF MISSISSIPPI
SWORN TO AND SUBSCRIBED BEFORE ME THIS

15 Day of 06/06

Charlene Wallis NOTARY PUBLIC

MY COMMISSION EXPIRES 10/21/2013



DATE	6/15/06
INVOICE NO.	51537
BILL OF LADING	789939
CUSTOMER NO.	9310
CUSTOMER P.O.	P C18815 PF

NUCOR-YAMATO STEEL CO.
P.O. BOX 1228 • BLYTHEVILLE, AR 72316

CERTIFIED MILL TEST REPORT

100% MELTED AND MANUFACTURED IN U.S.A.
All shapes produced by Nucor-Yamato Steel are cast and rolled to a fully killed and fine grain practice.

SHIP TO	INFRA-METALS CORP 8 PENT HIGHWAY TRACK # 953 WALLINGFORD, CT 06492
---------	---

SPECIFICATIONS	ASTM A992/A992M-04a A572/A572M GR50-04 ASTM A709/A709M-03a GR50 (345) ASTM A709/A709M-03a GR50S (345S) ASTM A6/A6M-05a
----------------	---

SOLD TO	INFRA-METALS CORP. 8 PENT HIGHWAY WALLINGFORD, CT 06492
---------	---

ITEM #	ITEM DESCRIPTION	QTY	HEAT #	MECHANICAL PROPERTIES								CHEMICAL PROPERTIES													
				YIELD TO TENSILE RATIO	YIELD STRENGTH	TENSILE STRENGTH	ELONG	CHARPY IMPACT		C	Mn	P	S	SI	Cu	Ni	Cr	Mo	V	Cb	CE				
					PSI	PSI		%	TEMP													IMPACT ENERGY			
					MPa	MPa		%	* F													* FT-LBS			

Formula: $CE = \frac{C}{100} + \frac{Mn}{15} + \frac{Cr}{5} + \frac{Ni}{10} + \frac{Cu}{10} + \frac{Nb}{10} + \frac{V}{10} + \frac{Sb}{10} + \frac{Bi}{10}$ CARBON EQUIVALENT: $CE = \frac{C}{100} + \frac{Mn}{15} + \frac{Cr}{5} + \frac{Ni}{10} + \frac{Cu}{10} + \frac{Nb}{10} + \frac{V}{10} + \frac{Sb}{10} + \frac{Bi}{10}$ Corrosion Index: $CI = 34.0 \left(\frac{C}{100} \right) + 3.34 \left(\frac{Mn}{100} \right) + 1.20 \left(\frac{Si}{100} \right) + 1.40 \left(\frac{Ni}{100} \right) + 17.24 \left(\frac{P}{100} \right) + 7.24 \left(\frac{Cu}{100} \right) + 2.10 \left(\frac{Nb}{100} \right) + 33.28 \left(\frac{V}{100} \right) + 2.10 \left(\frac{Sb}{100} \right) + 33.28 \left(\frac{Bi}{100} \right)$

ELONGATION BASED ON 8.00 INCH GAUGE LENGTH
I hereby certify that the contents of this report are accurate and correct. All test results and operations performed by this material manufacturer are in compliance with the requirements of the material specifications, and when designated by the purchaser, meet the applicable specifications.

David Lennell
QUALITY ASSURANCE
CUSTOMER COPY

STATE OF ARKANSAS COUNTY OF MISSISSIPPI
SWORN TO AND SUBSCRIBED BEFORE ME THIS
15 Day of 06/06
Charlene Wallis NOTARY PUBLIC
MY COMMISSION EXPIRES 10/21/2013
MY Commission Expires 10/21/2013

Certified Mill Test Report
100% Melted and Manufactured in USA

MTR #: 0000078912

Alln: Mark Johnson / David Dudzinski

Brillco
INFRA METALS-CT
8 Pent Highway
Wallingford, CT 06492
Attn: Mark Haigh

Item	Bundle	Section	Length	Pcs	Heat #	Grade(s)	Specification(s)	Customer P.O.
12a	020543332	W8X58	60' 0"	3	B020381	A992 / A992M A709 g50S/g345S A572 gr50/gr345	ASTM A992/A992M - 04a ASTM A709/A709M - 05 ASTM A572/A572M - 04	C19708
12b	020543332	W8X58	60' 0"	1	B020403	A992 / A992M A709 g50S/g345S A572 gr50/gr345	ASTM A992/A992M - 04a ASTM A709/A709M - 05 ASTM A572/A572M - 04	C19708
13	020563345	W10X100	50' 0"	2	B021170	A992 / A992M A709 g50S/g345S A572 gr50/gr345	ASTM A992/A992M - 04a ASTM A709/A709M - 05 ASTM A572/A572M - 04	C19374
14	020584334	W12X210	60' 0"	1	B021973	A992 / A992M A709 g50S/g345S A572 gr50/gr345	ASTM A992/A992M - 04a ASTM A709/A709M - 05 ASTM A572/A572M - 04	C19374

CHEMICAL


[illegible]

MECHANICAL

Item	Test	Yield (Fy) ksi/MPa	Tensile (Fu) ksi/MPa	Fy/Fu	Elong (%) based on 8" gauge	ROA (%)	Band Test Result	Test Temp F/C	Charpy Impact Testing Results				ASTM Grain- Size No (per ASTM E112)
									Sample 1 ft. lb/ftoules	Sample 2 ft. lb/ftoules	Sample 3 ft. lb/ftoules	% Shear	
12a	1	54/374	71/488	.76	24			1					
12a	2	52/351	70/482	.74	24			2					
12b	1	51/354	77/531	.66	21			1					
12b	2	54/373	77/531	.70	35			2					
13	1	58/402	75/516	.77	21			1					
13	2	58/389	76/525	.76	22			2					
14	1	53/365	76/521	.70	20			1					
14	2	56/385	74/510	.76	21			2					

I hereby certify that the contents of this report are accurate and correct. All tests and operations performed by this material manufacturer are in compliance with the requirements of the material specifications and applicable purchaser designated.

• **Prevalence**



Quality Assurance

My commission expires:

Notary Public

State of Indiana, County of Whitelaw

Sworn to and subscribed before me this

• **probiotics**

Notary Public

My commission expires:

Special Comments/Information:

$$f_{\text{arr}} = 25.01(\text{Cu}) + 3.00(\text{V}) + 1.20(\text{Cr}) + 1.49(\text{S}) + 7.29(\text{P}) + 7.29(\text{Cl}) + 9.10(\text{Al}) + 2.33(\text{Zn}) + 0.02 \quad \text{per ASTM G101}$$

23May06 9:50

TEST CERTIFICATE

No: MAR 404140

Sold By:

INDEPENDENCE TUBE CORPORATION

6226 W. 74TH STREET

CHICAGO, IL 60638

Tel: 708-496-0380 Fax: 708-563-1950

P/O No C19194

Rel PART I OF II

S/O No MAR 108923-008

B/L No MAR 67390-004 Shp 23May06

Inv No MAR -004 Inv 23May06

Sold To: (914)

INFRA-METALS

8 PENT HIGHWAY

WALLINGFORD, CT 06492

Ship To: (2)

INFRA-METALS (RAIL)

8 PENT HIGHWAY

TRACK #953

WALLINGFORD, CT

Tel: 203-294-2980 Fax: 203 294-2993

CERTIFICATE of ANALYSIS and TESTS

Cert. No: MAR 404140
23May06

Part No
TUBING A500C
8" X 6" X 1/2" X 55'

Pcs Wgt
8 18,502

Heat Number

Taq No

Pcs Wgt
4 9,251

78727D

974179

YLD=57330/TEN=74240/ELG=38.2

M24025

974181

4 9,251

YLD=54930/TEN=71650/ELG=40.2

Heat Number

*** Chemical Analysis ***

78727D

C=0.2100 Mn=0.7400 P=0.0100 S=0.0050 Si=0.0110 Al=0.0390

Cu=0.0200

M24025

C=0.2100 Mn=0.7900 P=0.0150 S=0.0090 Si=0.0100 Al=0.0490

Cu=0.0300

MANUFACTURED IN USA

MEETS THE REQUIREMENTS ASTM A-500 GRADE B(C)-03a

Atlas Tube (Arkansas) Inc.
5000 N. County Rd. 987
Blytheville, Arkansas, USA
72316
Tel: 519-730-5000
Fax: 510-738-3537



Ref.B/L: 80200759
Date: 07.18.2006
Customer: 81

Sold to

Infra-Metals Corporation
8 Pent Highway
WALLINGFORD CT 06492
USA

MATERIAL TEST REPORT

Shipped to

Infra-Metals Corporation
8 Pent Highway
WALLINGFORD CT 06492
USA

Material: 7.0x3.0x250x2.1" 0(3x6)SCSP517
Sales order: 227710

Material No: 70030250
Purchase Order: VERBAL

Made In: USA

Heat No	C	Mn	P	S	Si	Al	Cu	Co	Mo	Ni	Cr	V
851690	0.050	1.180	0.012	0.004	0.021	0.023	0.096	0.000	0.019	0.034	0.037	0.002
Bundle No	Yield	Tensile	Eln.2In	Certification								
894804	065470 Psi	068430 Psi	37.5 %	ASTM A500-03A GRADE C & B								

Material Note:
Sales Or.Note:

Material: 8.0x6.0x313x40" 0(2x3).
Sales order: 237544

Material No: 80060313
Purchase Order: B198477TD

Made In: USA

Heat No	C	Mn	P	S	Si	Al	Cu	Co	Mo	Ni	Cr	V
A38322	0.170	0.690	0.017	0.003	0.120	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Bundle No	Yield	Tensile	Eln.2In	Certification								
975463	057960 Psi	066280 Psi	35.2 %	ASTM A500-03A GRADE C & B								

Material Note:
Sales Or.Note:

Material: 8.0x6.0x313x40" 0(2x3).
Sales order: 237544

Material No: 80060313
Purchase Order: B198477TD

Made In: USA

Heat No	C	Mn	P	S	Si	Al	Cu	Co	Mo	Ni	Cr	V
A38322	0.170	0.690	0.017	0.003	0.120	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Bundle No	Yield	Tensile	Eln.2In	Certification								
M3-103120	057960 Psi	066280 Psi	35.2 %	ASTM A500-03A GRADE C & B								

Material Note:
Sales Or.Note:

Material: 8.0x6.0x313x40" 0(3x2).
Sales order: 237544

Material No: 80060313
Purchase Order: B198477TD

Made In: USA

Heat No	C	Mn	P	S	Si	Al	Cu	Co	Mo	Ni	Cr	V
A38322	0.170	0.690	0.017	0.003	0.120	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Bundle No	Yield	Tensile	Eln.2In	Certification								
975452	057960 Psi	066280 Psi	35.2 %	ASTM A500-03A GRADE C & B								

Material Note:
Sales Or.Note:

Authorized by Quality Assurance:

Deuce E



07/18/2006 09:48 FAX

18Jul06 12:51

TEST CERTIFICATE

No: MAR 411590

Sold By:

INDEPENDENCE TUBE CORPORATION

6226 W. 74TH STREET

CHICAGO, IL 60638

Tel: 708-496-0380 Fax: 708-562-1950

P/O No C20023/C20066MF

Rel

S/O No MAR 111078-003

B/L No MAR 68527-002 Shp 17Jul06

Inv No MAR -002 Inv 18Jul06

Sold To: (914)

INFRA-METALS

8 PENT HIGHWAY

WALLINGFORD, CT 06492

Ship To: (2)

INFRA-METALS (RAIL)

8 PENT HIGHWAY

TRACK #953

WALLINGFORD, CT

Tel: 203-294-2980 Fax: 203 294-2993

CERTIFICATE of ANALYSIS and TESTS

Cert. No: MAR 411590

18Jul06

Part No

TUBING A500 GRADE B(C)

6" X 4" X 5/16 X 30'

Pcs Wgt
6 3.434

Heat Number

625980

Taq No:

982869

YLD=60890/TEN=75660/ELG=32.8

Pcs Wgt
6 3.434

Heat Number

625980

*** Chemical Analysis ***

C=0.2200 Mn=0.8600 P=0.0080 S=0.0050 Si=0.0200 Al=0.0500

Cu=0.0200

MANUFACTURED IN USA

MEETS THE REQUIREMENTS ASTM A-500 GRADE B(C)-03a

OBMay06 10:

TEST CERTIFICATE

No: MAR 401635

Sold By:

INDEPENDENCE TUBE CORPORATION

6226 W. 74TH STREET

CHICAGO, IL 60638

Tel: 708-496-0380 Fax: 708-563-1950

P/O No C19182

Rel PT I OF II

S/O No MAR 108546-003

B/L No MAR 67072-010

Inv No MAR

Shp 05May06

-002 Inv 08May06

Sold To: (914)

INFRA-METALS

8 PENT HIGHWAY

WALLINGFORD, CT 06492

Ship To: (2)

INFRA-METALS (RAIL)

8 PENT HIGHWAY

TRACK #953

WALLINGFORD, CT

Tel: 203-294-2980 Fax: 203 294-2993

CERTIFICATE of ANALYSIS and TESTS

Cert. No: MAR 401635

OBMay06

Part No

TUBING A500C

6" SQ X 1/4" X 35'

Pcs

Wgt

12

7.988

Heat Number

Taq No

511892

972380

Pcs

Wgt

3

1.997

YLD=53960/TEN=74650/ELG=85.2

511892

972382

9

5.991

Heat Number

*** Chemical Analysis ***

511892

C=0.2300 Mn=0.8600 P=0.0100 S=0.0050 Si=0.0200 Al=0.0590

Cu=0.0200

MANUFACTURED IN USA

MEETS THE REQUIREMENTS ASTM A-500 GRADE B(C)-03a

Atlas ABC Corp (Atlas Tube Chicago)
1855 East 122nd Street
Chicago, Illinois, USA
60633
Tel: 773-646-4500
Fax: 773-646-6128



Ref.B/L: 80195143
Date: 06.12.2006
Customer: 81

Sold to

Infra-Metals Corporation
8 Pent Highway
WALLINGFORD CT 06492
USA

MATERIAL TEST REPORT

Shipped to

Infra-Metals Corporation
8 Pent Highway
WALLINGFORD CT 06492
USA

Material: 6.0x2.0x250x30"0"0(3x7).DOWN
Sales order: 230652

Material No: 60020250
Purchase Order: C19549KM

Made in: USA

Heat No	C	Mn	P	S	Si	Al	Cu	Cb	Mo	Ni	Cr	V
4354592	0.200	0.910	0.012	0.008	0.016	0.037	0.040	0.000	0.010	0.020	0.030	0.000

Bundle No	Yield	Tensile	Eln.2in
M700004511	056700 Psi	073790 Psi	34 %

Certification
ASTM A500-03A GR B DOWNGRADE

Material Note:
Sales Or.Note:

Material: 4.0x4.0x250x24"0"0(5x4).
Sales order: 228545

Material No: 400402502400
Purchase Order: C20019MF

Made in: USA

Heat No	C	Mn	P	S	Si	Al	Cu	Cb	Mo	Ni	Cr	V
E53506	0.190	0.760	0.011	0.010	0.025	0.041	0.130	0.000	0.016	0.040	0.050	0.003

Bundle No	Yield	Tensile	Eln.2in
M700010813	058230 Psi	074980 Psi	33 %

Certification
ASTM A500-03A GRADE C & B

Material Note:
Sales Or.Note:

Material: 4.0x4.0x250x24"0"0(5x4).
Sales order: 228545

Material No: 400402502400
Purchase Order: C20019MF

Made in: USA

Heat No	C	Mn	P	S	Si	Al	Cu	Cb	Mo	Ni	Cr	V
E61373	0.200	0.740	0.014	0.008	0.018	0.043	0.110	0.000	0.010	0.040	0.050	0.000

Bundle No	Yield	Tensile	Eln.2in
M700010813	062000 Psi	076510 Psi	32 %

Certification
ASTM A500-03A GRADE C & B

Material Note:
Sales Or.Note:

Material: 4.0x4.0x250x24"0"0(5x4).
Sales order: 228545

Material No: 400402502400
Purchase Order: C20019MF

Made in: USA

Heat No	C	Mn	P	S	Si	Al	Cu	Cb	Mo	Ni	Cr	V
GF2986	0.220	0.890	0.011	0.005	0.015	0.053	0.080	0.001	0.000	0.010	0.050	0.002

Bundle No	Yield	Tensile	Eln.2in
M700014091	058020 Psi	078200 Psi	30 %

Certification
ASTM A500-03A GRADE C & B

Material Note:
Sales Or.Note:

Authorized by Quality Assurance: _____

Carrie Lauritzen



09Jun06 8:50

TEST CERTIFICATE

No: MAR 406733

Sold By:

INDEPENDENCE TUBE CORPORATION

6224 W. 74TH STREET

CHICAGO, IL 60638

Tel: 708-494-0390 Fax: 708-563-1950

P/O No C20014

Rel PT I OF II

S/O No MAR 110692-004

B/L No MAR 67893-001 Shp 09Jun06

Inv No

Inv

Sold To: (914)

INFRA-METALS

8 PENT HIGHWAY

WALLINGFORD, CT 06492

Ship To: (2)

INFRA-METALS (RAIL)

8 PENT HIGHWAY

TRACK #953

WALLINGFORD, CT

Tel: 203-294-2980 Fax: 203 294-2993

CERTIFICATE of ANALYSIS and TESTS

Cert. No: MAR 406733

09Jun06

Part No

TUBING A500C

4" SQ X 1/4" X 40'

Pcs

24

Wgt

11,722

Heat Number

S62462

Tag No

979437

Pcs

4

Wgt

1,954

YLD=65350/TEN=71270/ELG=24.7

S62462

979441

20

9,768

Heat Number

S62462

*** Chemical Analysis ***

C=0.0500 Mn=0.8500 P=0.0100 S=0.0030 Si=0.0310 Al=0.0300

Cu=0.0940

MANUFACTURED IN USA

MEETS THE REQUIREMENTS ASTM A-500 GRADE B(C)-03a

68

68

NOVA TUBE AND STEEL CORPORATION
600 Dean Sievers Place
Morrisville, PA, 19067
Tel: 215-295-8813 Fax: 215-295-8798

TEST CERTIFICATE

Sold to: INFRA-METALS CORP. DATE SHIPPED: 06/14/06
Ship to: INFRA-METALS CORP. B/L #: 141778
8 PENT HIGHWAY P.O. #: C20031
WALLINGFORD, CONNECTICUT SALES ORDER #: 122318

06492

sOp12h10v0s0b3T

Description	Dimensions	Pcs	Mill/Heat Number	Specifications
HSS Square Tubing	4x4x0.188x480	30	ERI /610583	ASTM A 500 B/C
HSS Square Tubing	4x4x0.250x540	48	ARC /36116105	ASTM A 500 B/C
HSS Square Tubing	4x4x0.250x540	24	DOF /284451	ASTM A 500 B/C

sOp15h12v0s0b3T

Heat Number	C	Mn	P	S	Si	Cu	Ni	Cr	Cb	Mo	V	Al	N	Sn	B	Ti
ERI/610583	0.191	0.453	0.012	0.008	0.177	0.028	0.028	0.018	-	-	0.005	0.040	-	-	-	-
ARC/36116105	0.066	0.448	0.016	0.012	0.006	-	-	-	-	-	-	0.038	0.045	-	-	-
DOF/284451	0.230	0.740	0.006	0.010	0.040	0.040	0.010	0.040	-	0.003	0.004	0.046	0.004	0.005	-	0.002

sOp10h12v0s0b3T

Mechanical Test Results				
Heat Number/Size	Yield Strength	Tensile Strength	Elong. %	Hardness
ERI/610583 4x4x0.188	65,829	73,806	28.00	
ARC/36116105 4x4x0.250	64,193	69,899	25.00	
DOF/284451 4x4x0.250	61,234	71,714	28.00	

Heat # Manufactured in
ERI /610583 United States
ARC /36116105 United States
DOF /284451 United States

Authorized by Andrew Hurlbrink, Quality Ctrl Dept

JUN 14, 2006 18:40:40

sOp10h12v0s0b3T

sOp10h12v0s0b3T

18Jul06 12:51

TEST CERTIFICATE

No: MAR 411590

Sold By:

INDEPENDENCE TUBE CORPORATION

6226 W. 74TH STREET

CHICAGO, IL 60638

Tel: 708-496-0380 Fax: 708-563-1950

P/O No C20023/C20066MF

Rel

S/O No MAR 111078-003

B/L No MAR 68527-002 Shp 17Jul06

Inv No MAR -002 Inv 18Jul06

Sold To: (. 914)

INFRA-METALS

8 PENT HIGHWAY

WALLINGFORD, CT 06492

Ship To: (2)

INFRA-METALS (RAIL)

8 PENT HIGHWAY

TRACK #953

WALLINGFORD, CT

Tel: 203-294-2980 Fax: 203 294-2993

CERTIFICATE of ANALYSIS and TESTS

Cert. No: MAR 411590

18Jul06

Part No

TUBING A500 GRADE B(C)

6" X 4" X 5/16 X 30'

Pcs

6

Wgt

3,434

Heat Number

625980

Taq No

982869

Pcs

6

Wgt

3,434

YLD=60890/TEN=75660/ELG=32.8

Heat Number

625980

*** Chemical Analysis ***

C=0.2200 Mn=0.8600 P=0.0080 S=0.0050 Si=0.0200 Al=0.0500

Cu=0.0200

MANUFACTURED IN USA

MEETS THE REQUIREMENTS ASTM A-500 GRADE B(C)-03a

Bill To: Ship To: 5
 METALS USA PLATES & SHAPES NE METALS USA
 50 CABOT BOULEVARD EAST 10 TOWER ROAD
 LANGHORNE PA SEEKONK
 19047 US 02771

Order Date: 01/18/2006
 PO No: SKO-1622
 Mill Order No: 3079727
 Load No: 1024541
 Manifest No: 1743798

CERTIFIED MATERIAL TEST REPORT
 CHAPARRAL
 CHAPARRAL STEEL
 300 Ward Rd.
 Midlothian, TX
 76065-9651
 (972) 775-8211

SIZE: W 21 X 44# / W530 X 66
 GRADE: 992/572-50
 LENGTH: 55 FT / 16.764 M

PRODUCT: RF BEAMS
 PO # 13528

HEAT NO: 30291500

Yield Strength
 KSI MPa
 60.1 414.4
 59.7 411.6

CHEMICAL ANALYSIS

C Mn P S Si Cu Ni Cr Mo Sn V Al Nb CE
 .08 1.07 .014 .040 .23 .40 .10 .09 .013 .015 .002 .001 .019 .32

PHYSICAL PROPERTIES

Tensile Strength
 KSI MPa
 75.3 519.2
 75.5 520.6

Specimen Area
 Sq In Sq cm
 0.677 4.37
 0.714 4.61

Bend Test
 Dia. Result
 ROA %

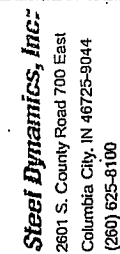
Elongation
 % Gauge Length
 21.5 8 In 200 mm
 23.0 8 In 200 mm

All manufacturing processes of this product, including electric arc melting and continuous casting, occurred in the U.S.A.
 CMTR complies with DIN EN 10204 3.1.B

"I hereby certify that the contents of this report are correct and accurate. All tests and operations performed by this material manufacturer or its sub-contractors, when applicable, are in compliance with the requirements of the material spe

Signed: Tom L. Harrington Date: Apr. 17, 2006 Signed: _____ Date: _____
 Tom L. Harrington: Quality Assurance Manager
 METALS USA - SEEKONK - TEST REPORT
 Customer: Mrs. A. M. M. M.
 Date: 8-4-06
 Your P.O. #: 13528
 Our Charge #: 118725

Page: 1 of 1



Certified Mill Test Report
100% Melted and Manufactured in USA

Date: 4/28/2006
Customer No: 000274
Bill of Lading No: 000007916
MTR #: 000007879

Ship to:
Seekonk
10 Tower
Seekonk
Attn: Ron

Ship to:
Seekonk Prime Outside
10 Tower Road
Seekonk, MA 02771
Attn: Ron Morin

Bill to:
METALS USA-CORPORATE
50 Cabot Blvd East
Langhorne, PA 19047

Item	Bundle	Section	Length	Pcs	Heat #	Grade(s)	Specification(s)	Customer P.O.
5a	020593965	W18X40	55' 0"	3	A022356	A992 / A992M A709 g50S/g345S A572 gr50/gr345	ASTM A992/A992M - 04a ASTM A709/A709M - 05 ASTM A572/A572M - 04	SKO-1722
5b	020593965	W18X40	55' 0"	3	A022357	A992 / A992M A709 g50S/g345S A572 gr50/gr345	ASTM A992/A992M - 04a ASTM A709/A709M - 05 ASTM A572/A572M - 04	SKO-1722
6a	020593965	W18X40	55' 0"	5	A022357	A992 / A992M A709 g50S/g345S A572 gr50/gr345	ASTM A992/A992M - 04a ASTM A709/A709M - 05 ASTM A572/A572M - 04	SKO-1722
6b	020593965	W18X40	55' 0"	1	A022358	A992 / A992M A709 g50S/g345S A572 gr50/gr345	ASTM A992/A992M - 04a ASTM A709/A709M - 05 ASTM A572/A572M - 04	SKO-1722

CHEMICAL

CHEMICAL ANALYSIS																		
Item	C	Mn	P	S	Si	Cu	V	Cr	Ni	Mo	Sn	B	Gb	C1	C2	PC	Analysis	
5a	.08	.94	.013	.025	.19	.32	.001	.07	.11	.023	.013	.0059	.0003	.019	.28	.31	.15	HEAT
5b	.07	.93	.014	.032	.21	.32	.001	.07	.11	.024	.013	.0072	.0003	.017	.28	.31	.15	HEAT
6a	.07	.93	.014	.032	.21	.32	.001	.07	.11	.024	.012	.0072	.0003	.017	.28	.31	.15	HEAT
6b	.08	.92	.014	.032	.25	.28	.001	.10	.11	.024	.012	.0063	.0004	.016	.28	.33	.16	HEAT

MECHANICAL

MECHANICAL											Tension Testing Results			
Item	Test	Yield (Fy) ksi/MPa	Tensile (Fu) Strength ksi/MPa	Fy/Fu	Elong (%) based on 8" gauge	ROA (%)	Bend Test Result	Test	Temp F/C	Sample 1 ft. lb./joules	Sample 2 ft. lb./joules	Sample 3 ft. lb./joules	% Shear	ASTM Grain Size No (per ASTM E112)
5a	1	62/425	73/503	.85	26			1						
5a	2	62/429	75/519	.83	27			2						
5b	1	62/427	76/526	.82	26			1						
5b	2	59/407	71/491	.83	25			2						
6a	1	62/427	76/526	.82	26			1						
6a	2	59/407	71/491	.83	25			2						
6b	1	58/402	70/481	.83	26			1						
6b	2	62/426	77/531	.81	25			2						

I hereby certify that the contents of this report are accurate and correct. All tests and operations performed by this material manufacturer are in compliance with the requirements of the material specifications and applicable purchaser designated.

Signed:

Quality Assurance

State of Indiana, County of Whitley

Sworn to and subscribed before me this _____ day of _____

Signed: _____
Notary Public

My commission expires:

Special Comments/Informations: 1A - SEKONK - 1ST REPRO

Customer Lines Attached

三

Date. _____
Your P.O. #. _____

Charge

[illegible]

HEAT NO: 30293990

CHEMICAL ANALYSIS

PHYSICAL PROPERTIES

Yield Strength

Tensile Strength
KSI MPa

U
C

Specimen Area	Sq In	Sq cm
---------------	-------	-------

0 637

Elongation
% Gage Length

	8In	200 mm
	8In	200 mm

Bend Test Dia. Result	ROA %
100	100
90	90
80	80
70	70
60	60
50	50
40	40
30	30
20	20
10	10
0	0

METALS USA - SEEKONK - TEST REPORT
Customer: AMES & MURPHY
Date: 6-4-80
Your P.O. #: 13228
Our Charge #: 118725

"I hereby certify that the contents of this report are correct and accurate. All tests and operations performed by this material manufacturer or its sub-contractors, when applicable, are in compliance with the requirements of the material specifications and applicable purchaser designated requirements."

Signed: Tom L. Harrington Date: May. 18, 2006 Signed: _____
Tom L. Harrington: Quality Assurance Manager _____
Notary Public (if applicable)
Date: _____
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