

# NATIONAL STEEL AND SHIPBUILDING COMPANY

## GENERAL QUALITY ASSURANCE SPECIFICATION

Revised September 1997

This specification is applicable to procured materials, equipment and machinery and productive services engaged by National Steel and Shipbuilding Company, for the repair of U.S. Navy Vessels and becomes a part of any purchase order in which it is referenced. Requirements of this specification in no way supplant other requirements of purchase order in which it is invoked.

For the purpose of this specification, the term "Supplier" shall mean Vendor and Subcontractor unless specifically addressed otherwise, and the term "Buyer" shall mean National Steel and Shipbuilding.

### A. Quality Program and Organization

1. Supplier shall have an organized approach to the control of product quality with functional areas and scope of responsibility defined and assigned within the organization. Effective control of quality must be provided from design through procurement, manufacturing, assembly, testing and shipping.
2. Supplier's organization, politics and procedures for control of quality must be set forth in writing, be officially promulgated to cognizant personnel, and be made available to Buyer upon request.
3. Supplier's program must include a method for continuing evaluation of effectiveness of the control procedures and inspection system and means for effecting system adjustments where need is indicated.

### B. Inspection System

1. Supplier shall have an inspection system adequate to insure that all inspections and tests required by applicable drawings, specifications and procurement documents, as well as any other inspections necessary to assure conformance thereto, will be performed and recorded. The system shall insure that only items which have been inspected by Supplier and found to conform to specified requirements will be presented to Buyer for acceptance. The system shall generally conform to the requirements of NAVSEA Standard Item 009-04.
2. For "Subcontractors", NAVSEA Standard Item 009-04, Inspection System requirements are invoked unless otherwise stated in the purchase order.
3. Supplier's written inspection system shall be provided for Buyer's review upon request. Buyer shall also be afforded opportunity to conduct an on-site review of system implementation upon request.

### C. Inspection and Testing Records

1. Records of all required and necessary inspection and test results must be generated and maintained on file for a minimum of three years. Records must identify the actual material examined and indicate acceptable, show method(s) of examination, evaluation standards, characteristics examined, discrepancies found and corrective action.
2. All records must be available to buyer and to authorized Government Representatives on demand.
3. Documentation of tests and inspection shall be forwarded to NASSCO

Quality Assurance Department. Duplicated copies will accompany shipment.

4. Certain records, required herein, must routinely be provided Buyer.

D. Qualifications

1. Supplier shall establish and maintain, as a part of his Inspection System, means of verifying that his personnel and processes are qualified as required by specifications and standards invoked in Supplier's purchase order and in accordance with the following applicable documents:
  - a. Nondestructive testing - T9074-AS-GIB-010/271
  - b. Structural welding - S9074-AR-GIB-010/278 except when MIL-STD-278 or ABS Rules are specifically invoked.
  - c. Machinery welding - S9074-AR-GIB-010/278
  - d. Brazing - NAVSHIPS 0900-001-7000
  - e. Welding Procedures and Performance Qualification Test are in Conformance with Section IX of The American Society of Mechanical Engineers or S9074-AQ-GIB-010/24B.

E. Design Aspect

1. Supplier shall insure that all drawings, technical manuals and other engineering data, used for manufacturing, inspection and testing define or reference applicable standards of quality. These documents shall clearly define process control procedure, tolerances, finishes, tests, inspections, etc.

F. Materials

1. Brittle material shall not be used except where specifically approved by Buyer. Brittle material is material showing less than ten (10) percent elongation in two inches for the standard tensile test or which is being used below its elastic fracture transition temperature (based on Charpy V-notch test).
2. Magnesium and its alloys shall not be used except where specifically approved by Buyer.

G. Substitutions and Departures

1. Substitutions for specified materials, departures from approved plans and specifications or manufacturing variation shall be allowed only as approved by Buyer.
2. All significant substitutions, departures or variations shall be the subject of written waiver requests which must include complete description of the requested substitution, departure or waiver, reasons therefore, units affected and justification. If appropriate, a description or corrective action taken to alleviate casual circumstances shall be included.
3. Substitutions, departures or variations shall be considered significant if they:
  - a. Result in physical or chemical characteristics differing from requirements of invoked Military or Industry Specifications or Standards, or
  - b. affect operating characteristics, or
  - c. result in nonstandard parts, or
  - d. affect strength or integrity, or
  - e. could represent a safety hazard.
4. All affected material and technical data and applicable shipping documents shall be positively identified with the waiver action.

H. Material Identification and Control

1. Supplier shall establish and maintain a system of material identification and control that will insure the use of specified materials. For piping system materials designated Level I, this system shall conform to NAVSEA 0948-LP-045-7010.
2. For all items requiring shock test, the system must insure that all components, integral or attached, are approved for use in shock hardened systems; that individual shock designated items which are not shock tested are, in fact, identical to items which have been satisfactorily shock tested; that shock grade is marked on all items (and attendant paperwork) designated shock Grade A or Grade B; and that items actually shock tested are marked as such if supplied to Buyer.

I. Nondestructive Testing

1. All nondestructive testing methods, technique standards and evaluation standards shall be included in the purchase order. In absence of direction to the contrary, testing methods and techniques shall comply with MIL-STD-271.
2. When radiography is required, radiographic shooting sketches shall be submitted for Buyer's approval prior to subsequent production. Supplier shall review and approve all results of radiography whether performed in-house or subcontracted. Supplier shall provide to Buyer copies of all evaluation records and shall supply actual film upon request.

J. High Impact Shock

1. When Buyer's purchase order includes designation of shock Grade A, Supplier shall:
  - a. Place shock designation on all applicable drawings, manuals, instruction books, provisioning technical documentation and subordinate procurement documents.
  - b. Verify existence of shock hardness feature of procured subsidiary components or subassemblies prior to installation.
  - c. Verify actual installation of shock hardened subsidiary components or subassemblies.
2. For all items designated shock Grade A or B, Supplier shall perform required shock tests in accordance with MIL-S-901C or provide evidence that the item, or an identical item, has been shock tested and found acceptable. Waiver of shock test, substitution of dynamic analysis, or extension of a shock test of an item to cover another item, not entirely identical, shall require specific approval of Buyer.

K. Supplier's Subcontractor Control

1. Supplier shall establish and maintain, as a part of his Quality Program or Inspection system, a method for insuring that all work performed by his subcontractors under Supplier's contract with Buyer conforms to requirements of said contract. This shall include inspection of product at source or upon receipt, verification of subcontractor certifications and documentation, and a means for continuing review of subcontractor quality performance, such as audits, quality histories, etc.

L. Certificates and Documentation

1. Supplier shall provide to Buyer, Certificates of Compliance and

documentation, when required on the face of the purchase order, and in any case, as follows:

- a. Certificate Compliance
    - (1) All Level I piping systems materials defined as external pressure boundaries in NAVSEA 0948-LP-045-7010.
    - (2) All items designated Grade A or Grade B shock hardened.
    - (3) All materials requiring radiography.
    - (4) All material where compliance with a military procurement specification or industry standard is required.
  - b. Documentation:
    - (1) All materials designated Level I.
    - (2) All items designated shock Grade A or Grade B.
    - (3) All items requiring radiography.
2. In order to be acceptable, a Certificate of Compliance must contain the following:
- a. Name of supplier
  - b. Name of manufacturer
  - c. Purchase order and item number
  - d. Identify of material by name, catalog number, etc.
  - e. Title of applicable procurement specification (MIL SPEC, Industry Standard, etc.), and type, grade, class, etc.
  - f. Statement that the material was subjected to, and passed, all tests required by the purchase order and the applicable procurement specifications.
  - g. Signature and title of authorized official of supplier's organization.
3. Documentation must contain all data listed below by category:
- a. Materials designated Level I
    - (1) Heat, melt, batch, run or other manufacturing process numbers.
    - (2) Test reports (data) showing that material was subjected to, and passed, all tests required by the purchase order and the applicable procurement specifications. For continuous process manufacturing, process control data for the approximate time period of manufacture are acceptable.
  - b. Grade A and Grade B shock material
    - (1) Test report of shock test, or
    - (2) Evidence of identicalness to a successfully shock tested item, or
    - (3) Evidence of extension, approved by Buyer, of shock test of another item, or
    - (4) Evidence of dynamic design-analysis, approved by Buyer, if shock test cannot be performed.
  - c. Items requiring radiography:
    - (1) As required under Nondestructive Testing above
    - (2) Radiographs of all materials designated Level I; other required radiographs upon request
    - (3) Evaluation records for all radiography
- M. Government Source Inspection Supplies Government Contract Quality Assurance (GCQA)
1. All Work Item requirements to be accomplished outside of the San Diego area will be brought to the attention of the prime Contractor advising name and address, including zip code of Subcontractor that will be performing the work. This requirement is to determine if government contract Quality

Assurance is required by the Supervisor of Shipbuilding (SUPSHIP). After SUPSHIP determination, the Supplier will be advised verbally followed by a letter.

2. Government Source inspected material found deficient upon receipt by the Buyer shall be reported to SUPSHIP and to the Supplier for the purpose of coordinating corrective action between the Supplier and his Government Representative.
3. The marking of each item by the Government Inspector is neither required nor prohibited. Ordinarily, the stamping of shipping container, packing lists, or lot routing tickets adequately serves to provide necessary indication status and to control or facilitate the movement of material. No material shall be stamped in such a way as to damage the material. Failure to comply with this paragraph will be considered nonconformance and supplies rejected until corrective action has taken.
4. During performance on this order, the Suppliers Quality System and manufacturing processes are subject to review, verification and analysis by authorized Government Representatives. Government inspection or release of product prior to shipment is not required unless otherwise notified or stipulated on the purchase order.

N. Subcontractors Doing Ship Repair Work for National Steel and Shipbuilding Company Must follow the Procedure Outlined Below :

1. The Subcontractor will contact the cognizant NASSCO Ship Superintendent before commencing any work on board the ship.
2. After the Ship Superintendent or his representative has checked out all areas in which work is to be accomplished, the Subcontractor(s) will be notified to proceed.
3. The Subcontractor(s) will insure that he has all necessary specifications and drawings required to complete the job. If the Subcontractor cannot obtain such specifications and drawings, Ship Superintendent shall be notified immediately.
4. In general, any question or problem concerning Subcontractor's processing of work for National Steel and Shipbuilding Company shall be brought to the immediate attention of the Ship Superintendent or his representative.
5. The Subcontractor(s) will comply with the provisions of Article 1915.10 with regard to Safety and Health Regulations for ship repair and maintain a current confined space log posted in all spaces requiring such safety precautions.
6. Insurance responsibility for safety shall meet the requirements of NASSCO's Terms and Conditions.

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# INSTRUCTIONS FOR CONFINED SPACE LOG

1. This form shall be used to log the inspections and tests required by Section 29 CFR 1915.10(c)(1) and/or Section 29 CFR 1916.10(c)(1) and/or Section CFR 197.10(c)(1).
2. This record shall be available for inspection in the immediate vicinity of the affected operations while they are in progress and shall be kept on file for a period of at least 3 months from the date of the completion of the job.
3. HULL/VESSEL: Enter the name of the vessel or hull number.
4. TYPE: Indicate vessel type, tanker, dry cargo, passenger, miscellaneous vessel, etc.
5. NAME OF SPACE: Name of each space (i.e., No. 5 Stbd.. Ballast) in which inspections are made or tests taken. Note cargo 1st carried if significant.
6. OPERATION: Name the operation to be performed, such as cleaning, inerting, painting, hot work, cold work, etc.
7. DATE/TIME/DAY: The test shall be listed in the order in which they are taken.
8. RESULTS: Give meter readings and type of instrument used. Otherwise indicate "Inspection" or "Flammability test."
9. INITIALS AND SIGNATURES: The Shipyard Competent Person shall initial each test or inspection made. The full name and badge number shall be written in the spaces below:

NAME	BADGE	INITIAL	SIGNATURE

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