Specification for IRR Off-Load Access Hatch

1. SCOPE

1.1. Scope. This specification reflects those characteristics that are essential to the minimum needs of the Government for an IRR Off-Load Access Hatch (referred to as "hatch" herein). The hatch will consist of a factory fabricated equipment access with a minimum 11-foot x 11-foot clear thru opening designed to mate to a government designed foundation. The hatch shall be crane liftable for landing on the foundation, be capable of removing from the foundation and re-oriented 90 degrees rotated, and have a removable guardrail system which guards the open edge when the hatch is open. The hatch shall be delivered on-site ready for use.

2. APPLICABLE DOCUMENTS

2.1. General. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on the date of an invitation for bids or a request for proposals shall apply. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in this specification, whether or not they are listed.

2.2. Government Documents. The following specifications, standards and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

PUGET SOUND NAVAL SHIPYARD

Drawing 380R-67: "Foundation for 688 Off-Load Access Hatch"

UNIFIED FACILITIES CRITERIA (UFC)

UFC 3-310-01: Structural Engineering

(Copies are available online at: http://dod.wbdg.org/)

FEDERAL STANDARDS

NAVAL FACILITIES ENGINEERING COMMAND

NAVFAC P-307: Management of Weight Handling Equipment (December 2009)

(Copies available online at: https://portal.navfac.navy.mil/portal/page/portal/docs/doc_store_pub/p-307%20december%202009.pdf or from Naval Inventory Control Point, ATTN: NAVICP 03334 Room 3200, 700 Robbins Avenue, Philadelphia, PA 19111-5098)

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910: Occupational Safety and Health Standards
29 CFR 1915: Occupational Safety and Health Standards for Shipyard Employment
29 CFR 1926: Safety and Health Regulations for Construction
(Information is available online at: www.gpoaccess.gov)

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT)

(Commercial vehicle information is available online at: http://www.wsdot.wa.gov/CommercialVehicle)

2.3. Non-government documents. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of documents are those cited in the solicitation or contract.

INTERNATIONAL CODE COUNCIL (ICC)

International Building Code, 2009 or more recent

(Copy of this document is available online at: http://www.iccsafe.org)

Specification for IRR Off-Load Access Hatch

2.4. Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS.

3.1. Design. This specification covers the minimum Government requirements for an IRR Off-Load Access Hatch, referred to herein as "hatch." The hatch shall provide weather protection and a lockable cover which, when opened, provides a clear opening of 11-feet x 11-feet minimum. The hatch shall be capable of being lifted by crane for installation purposes.

3.2. Contractor responsibilities. The Contractor shall be responsible for the following:

3.2.1. A hatch which is engineered, assembled, and delivered ready for use as specified herein.

3.2.2. The documentation and organization of all technical data that applies to the design, configuration, and operating instructions for the hatch.

3.3. Government responsibilities. The Government will provide the following:

3.3.1. Unload at delivery. The government will provide forklift or crane, as needed, to unload hatch from the contractor's delivery vehicle.

3.3.2. Receiving Activity Point of Contact. The Receiving Activity Point of Contact is Code 350 John Robinett who can be contacted by phone (360) 340-4890 or email john.d.robinett@navy.mil. For issues regarding cost and/or schedule contact the Contracting Officer.

3.3.3. Technical Issues. The technical point of contact is Code 380 Lenny Blocher who can be contacted by (360)476-9140 or email leonard.blocher@navy.mil.

3.4. Specific requirements.

3.4.1. Configuration. See Figure (1) for intended hatch usage and Figure 2 for hatch features and parameters to supplement the requirements listed in sections 3.4 and 3.5. The hatch shall be designed to mate with the government designed foundation (ref. drawing 380R-67).

3.4.1.1. Opening/Closing. Manual opening and closing of hatch covers with built-in lift assistance shall be accomplished without the need for special tools and within reach of the hatch perimeter. Opened covers shall withstand wind loading of 25 mph minimum. Hatch covers shall automatically lock in the open position.

3.4.1.2. Crane Pickable. The hatch shall be capable of picking by crane preferably without the need for a strong-back or spreader beam. Design requirements for lifting attachments are contained in section 3.5.

3.4.1.3. Weather Resistant. All joints shall be designed to be assembled in a manner that prevents the collection, retention, or entrance of moisture.

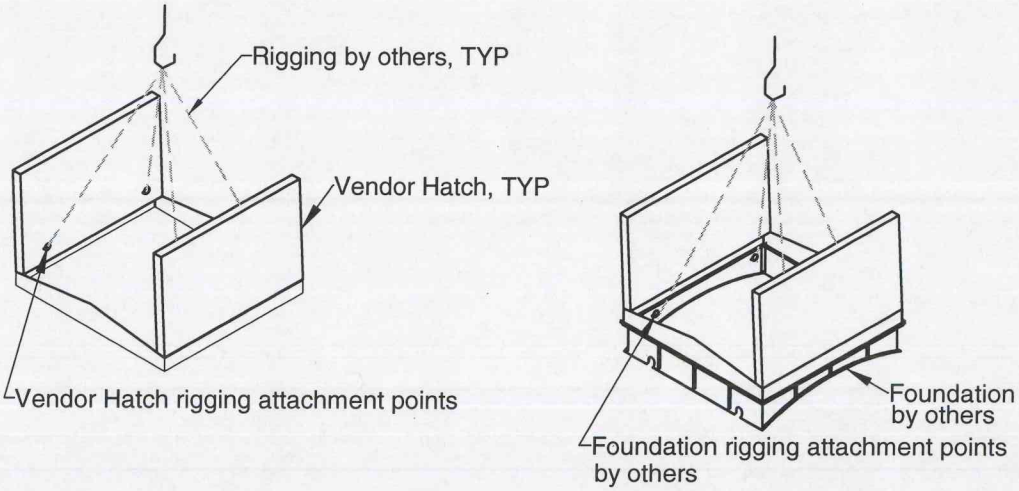
3.4.1.4. Hatch Orientation. The hatch, when attached to the foundation (ref drawing 380R-67), shall provide a clamshell opening over a contoured surface to the hull. The interface between the hatch and the foundation shall be mechanically fastened to allow detachment from each other. When the fasteners are detached the hatch shall be capable of rotating 90 degrees in plan with respect to the curb and then re-fastened to the foundation.

3.4.2. Engineered Design. The hatch design shall be sealed by a licensed professional engineer in accordance with the International Building Code and other recognized codes as applicable.

3.4.2.1. Environmental loads. Snow and wind loading shall be in accordance with UFC 3-310-01 for the Bremerton, WA region. The wind exposure category is D. The shelter risk or occupancy category is I.

3.4.2.2. Hatch Live Load. The hatch shall support a 40 psf live load (not concurrent with snow load) with a maximum deflection of $1/150^{th}$ of the span.

Specification for IRR Off-Load Access Hatch

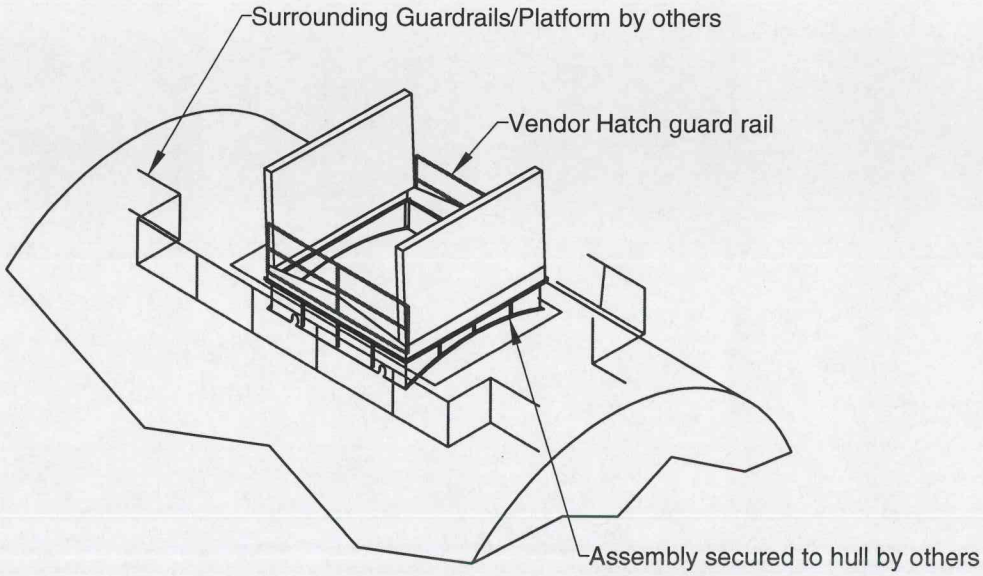


A. Rigging Vendor Hatch

Prior to landing on and securing to foundation.

B. Rigging Off-Hull Access Hatch Assembly

When hatch is secured to the foundation the assembly is rigged from the foundation.



C. Off-Hull Access Hatch Assembly Insatlled on Hull

FIGURE 1: HATCH USAGE OVERVIEW

Specification for IRR Off-Load Access Hatch

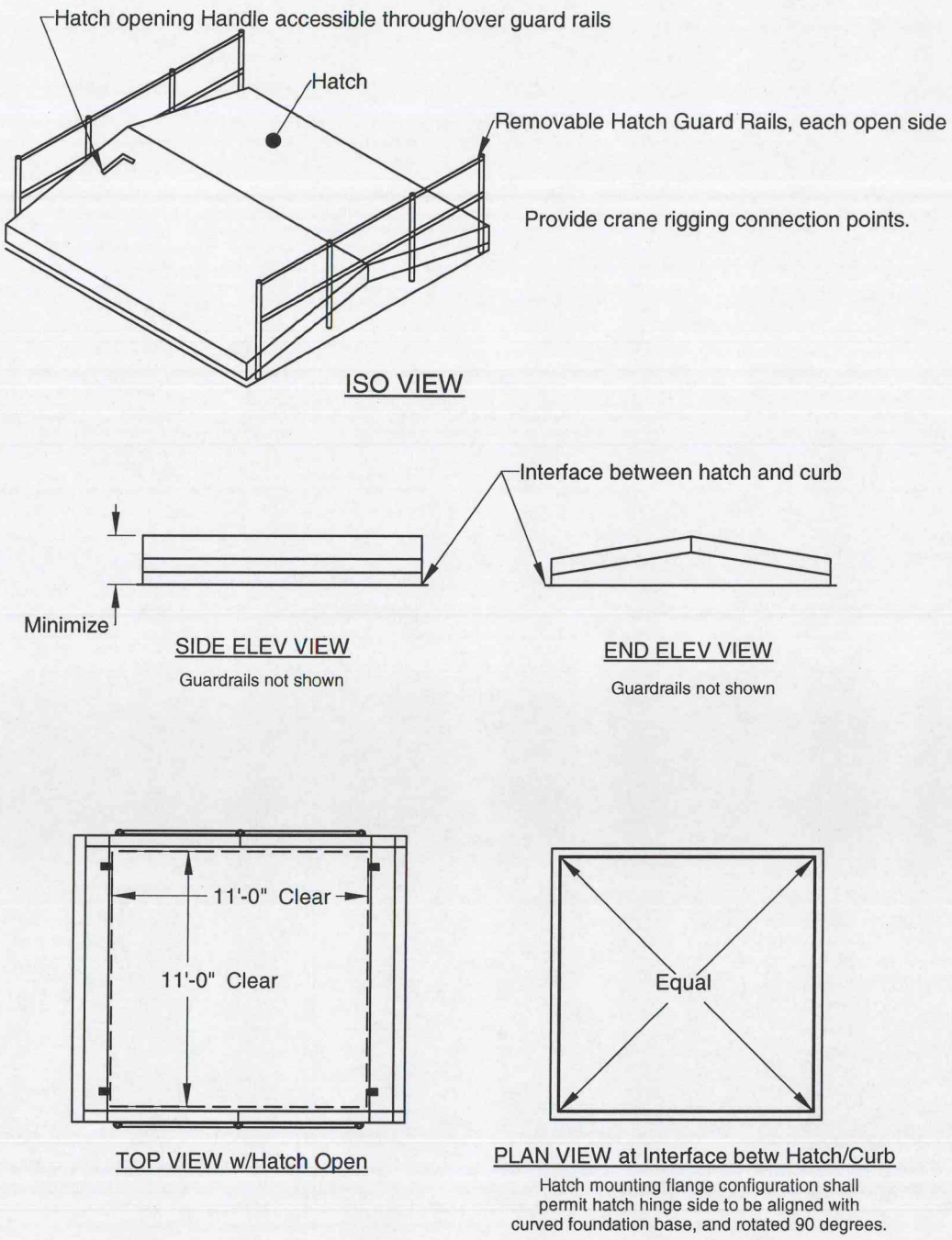


FIGURE 2: FEATURES/REQUIREMENTS
See 3.4.1 for additional details and clarifications

Specification for IRR Off-Load Access Hatch

3.5. General requirements. The following general requirements shall apply to the hatch delivered under this specification.

3.5.1. Response to Request. As a part of the response to this request, descriptive literature shall be furnished in sufficient detail to show that the proposed design will meet these specifications. Vendor submittals shall include information on the item being submitted, sketches with critical dimensions, statements of compliance or exceptions to the specification, and performance statements with special attention to the key performance criteria stated herein.

3.5.2. Material. The hatch shall be constructed of parts and material that are new, without defects, and free of repairs.

3.5.3. Operation and Usage. The hatch shall be designed for and to operate in a severe marine-industrial environment. Operation of the covers shall be smooth and easy with controlled operation throughout the entire arc of opening and closing.

3.5.4. Corrosion Protection. All materials shall be protected from, or naturally resistant to, corrosion.

3.5.5. Fastening Devices. Screws, pins, bolts, and similar internal and external parts shall be installed with means for preventing change of tightness. Parts subject to removal or adjustment shall not be swaged, peened, staked, or otherwise permanently installed. Fastening devices shall be tightened to torque limits as established by the manufacturer's standard for tightening to preclude loosening by normal operation or vibration.

3.5.6. Noncombustible Materials. The hatch shall be constructed of noncombustible materials, except for weather sealing material as required.

3.5.7. Lifting attachments. The use of spreaders or strongbacks shall be kept to a minimum, but if they are deemed necessary, a lift sketch detailing the required spread, capacity and orientation of that gear shall be provided for review at the time of the submittal of the hatch assembly design.

3.5.7.1. Weight. Label the actual weight on the side and/or top of hatch with "hatch only" identified.

3.5.7.2. Lift attachment design criteria.

3.5.7.2.1. The allowable bending strength, Fb, shall be 1/3 of the yield strength (Fy/3) or 1/5 of the ultimate tensile strength (Fu/5), whichever is the most conservative, of the lifting attachment material.

3.5.7.2.2. The allowable shear strength, F_v, shall be 0.58 times the allowable design bending strength F_b defined above.

3.5.7.2.3. The allowable bearing strength, F_p, shall be 0.3 times the ultimate tensile strength of the lifting attachment material.

3.5.7.2.4. The lifting attachments shall be sized based on actual weights plus 10% for unexpected growth in the weight of the load. The resulting value shall be further increased to reflect the loads induced by the angle the slings make to the plane the lifting attachments lie on. The attachments shall be oriented so the slings shall not pull out of the plane of the individual lifting attachment by more than 5° unless they are designed to withstand the resulting side load. In addition, the individual loads for each point shall be calculated based on the configuration of the rigged equipment and the location of its center of gravity.

3.5.7.2.5. For 3 or more lifting attachments only 2 lift attachments shall be assumed to carry the load unless a spreader or strongback is used.

3.5.7.2.6. The structure supporting the lifting attachments shall be designed to sustain the various lateral loads imparted by the arrangement of the lifting attachments and the induced sling angle.

3.5.7.2.7. The lifting attachments are required to withstand a load test of 200% (+5%-0%) of the Working Load Limit (WLL) for 2 minutes. Acceptance criteria shall be: No bending, cracking, or permanent deformation of the lifting attachments or associated structure. The contractor's certified representative will perform the load testing plus a pre- and post-load VT per the inspection requirements of American Welding Society (AWS) D1.1 and submit documentation of the satisfactory results of all the various tests. The lifting attachments shall be labeled with the WLL and the test date.

Specification for IRR Off-Load Access Hatch

3.5.7.2.8. In certain cases, with prior concurrence of the cognizant technical Code at Puget Sound Naval Shipyard & Intermediate Maintenance Facility, the load test may be waived and a magnetic particle test (MT) of the attachment weld substituted, meeting the acceptance criteria of MIL-STD-2035A, Class 3 or equivalent standard as approved by the Government, provided the testing is performed by a certified third party and documentation of the satisfactory results are provided with the receipt of the equipment.

3.5.7.2.9. All calculations required for the design of the lift points shall be performed by a Professional Engineer and shall be provided for review at the time of the submittal of the equipment design.

3.5.7.3. Swivel hoist ring design criteria, if utilized, shall be provided on request from the vendor.

3.5.8. Identification Plate/Label. The following information shall be on each hatch as applicable: Nomenclature, Contractor's name, manufacturers name, system model number, system serial number, date of manufacture, contract number and any other pertinent information for identifying the hatch.

3.5.9. Warranty. Supplies furnished shall be covered by warranty from defects in design, materials and workmanship. The warranty shall be the manufacturer's standard commercial warranty which shall conform to all the requirements of the contract. Acceptance of the manufacturer's standard commercial warranty shall not minimize the rights of the Government under clauses in the contract, and in any conflict that arises between the terms and conditions of the contract and manufacturer's warranty, the terms and conditions of the contract shall take precedence. The warranty period shall commence when final acceptance has been achieved as determined when all contract line item numbers have been processed through Wide Area Workflow (WAWF).

3.5.10. Safety devices. All machine parts, components, mechanisms, and assemblies furnished on the unit shall comply with all specific requirements of "OSHA Safety and Health Standard (29 CFR 1910), General Industry" that are applicable to the equipment itself.

3.5.10.1. Safety guardrails. Guardrails shall meet OSHA 29 CFR 1910. The rails shall not interfere with the operation or maintenance of the hatch. Chain "rail" is not permitted.

3.5.10.2. Safety signs and labels. Safety signs and labels in accordance with ANSI Z535.4 shall be securely attached to the equipment in visible locations, with any safety precautions to be observed by the operator or maintenance personnel permanently marked on the signs.

3.6. Documents to be provided. The Contractor shall provide the following documents as part of the contract:

3.6.1. Design information. Within 45 days after the effective date of the contract, the contractor shall submit two copies of the hatch drawings and a set of engineering calculations.

3.6.1.1. Drawings shall show all critical dimensions, lift sketch, all features as per this specification, and a list of component manufacturers and model numbers.

3.6.1.2. The drawings shall be reviewed for compliance to this specification by the Government user prior to the shipment.

3.6.1.3. The Government will notify the contractor in writing within ten (10) working days of receipt of requested information if it complies with this specification.

3.6.1.4. If revisions are required to the plan or drawings, the contractor has ten (10) working days to revise the plan/drawings and resubmit them for a new review.

3.6.1.5. If further comment rounds are required, both Contractor and Government shall continue to reply within ten (10) working days.

3.6.1.6. Government review and/or approval of submittals, certifications, and schedules do not relieve or reduce the Contractor's obligation to comply with all contract requirements.

3.6.2. Lift Sketch. The Contractor shall provide a lifting sketch that shall identify the following in accordance with NAVFAC P-307:

3.6.2.1. The weight of the load

3.6.2.2. The location of the center of gravity

3.6.2.3. The minimum required capacity and length of the slings.

3.6.2.4. The minimum capacity of other standard lifting gear.

3.6.2.5. The attachment (lifting) points for each load.

3.6.2.6. Limitations on allowable orientations for any other parts making up the lifting assembly

3.6.3. Lifting Attachment Certification. Each Lifting Attachment shall be provided with the manufacturer's certification. Each Swivel Hoist Ring, if used, shall be provided with the manufacturer's certification document which reflects the SHR serial number and record of a 200% proof test based on rated WLL.

3.7. Technical data. The following technical data shall be furnished as part of the contract.

3.7.1. CD-ROM. The contractor shall provide all final "as built" contract drawings and engineering calculations on CD-ROM disk(s). The format of the drawing files shall be in AutoCAD. Files shall have "DWG" or "DXF" extensions in version 2010 or older. Contractor may request to supply drawings in an alternate file format if desired and approved by the Government. Calculations shall be PDF format.

3.7.2. User Guidelines. Any restrictions on hatch use shall be identified.

4. QUALITY ASSURANCE

4.1. Responsibility for inspection. The Contractor shall be responsible for the performance of all inspection requirements (examinations and tests) as specified herein. The Government reserves the right to perform any of the inspections set forth in this specification, where such inspections are deemed necessary to assure supplies and services conform to the prescribed requirements.

4.2. Responsibility for compliance. All items shall meet all requirements of sections 3, 4, and 5. The inspection(s) set forth in this specification shall become part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspections, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements; however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.3. Basic performance tests at origin. Basic performance tests, if requested, shall be conducted on the primary system and all associated system to the extent practicable, to demonstrate functionality. The tests shall be performed either by the Contractor personnel of their service organization directly, or by an independent testing agency. The Contractor may use his own facility or any other facility suitable for the performance of the inspection requirements specified herein. The Government shall have the option to send one or more technical representatives to witness the basic performance tests at origin. The Contractor shall schedule and coordinate the test at origin at least 20 working days prior to the test; the Contractor shall notify the Government Point of Contact of the scheduled date, time, and location of the test.

4.4. Inspection at origin

4.4.1. Initial Test and Grooming. The Contractor shall perform an inspection of the each hatch prior to delivery for integrity.

4.4.1.1. All welds for integrity and appearance.

4.4.1.2. Surfaces examined for sharp edges and burrs.

4.4.1.3. Fasteners checked for tightness and if fixed to prevent loosening due to vibration.

4.4.1.4. Corrosion protection checked for flaking, blistering, etc.

4.4.2. Acceptance tests at destination. Upon satisfactory completion of the inspection requirements above, the hatch will be evaluated at destination as follows.

4.4.2.1. The government shall ensure the hatch can perform as required in Section 3.

Specification for IRR Off-Load Access Hatch

4.4.2.2. All functions shall be exercised to the extent necessary to prove proper operation in accordance with specification requirements.

4.4.3. Final Acceptance. Upon satisfactory completion of delivery and evaluation, the contractor shall utilize electronic invoicing. Invoices must be submitted using Wide Area Workflow (WAWF) – Receipt and Acceptance. The contractor shall self-register at the web site: https://wawf.eb.mil. Contractor training is available on the Internet at https://wawftraining.eb.mil. Additional support can be accessed by calling the NAVY WAWF Assistance Line: 1-800-559-WAWF (9293).

5. DELIVERY

5.1. Delivery Date. It is required that all goods and services provided by this specification be delivered as specified in the contract.

5.1.1. Delivery. Delivery shall be coordinated with contracting. Hatch transportation from the manufacturer's facility to destination shall be the responsibility of the Contractor.

5.1.2. Packing Material. Shredded paper, newspaper, office scrap, computer sheets, or wax paper, in packing material for shipment to Navy activities is prohibited.