




VACCO Quality Flow-Down Instruction

Prepared by:  7/24/13
John Harmon, Mgr. Supplier Quality Date

Reviewed by:  8/6/13
Nils Nelson, Director Quality Date

Approved by:  8/27/13
Greg Wieland, Vice President Quality Date

Distribution: Complete document distributed to all VACCO employees via IQS.

DOCUMENT CHANGE RECORD

Changes to this document may require changes to the following:

- WDS system
- VACCO Website (Quality Clauses and Supplier Instructions)

Rev	Date	Responsibility	Description of Change
Initial Release	08/27/2013	John Harmon	Initial Release
1.0	11/12/2013	John Harmon	See IQS History
1.1	12/11/2013	John Harmon	See IQS History
1.2	03/05/2014	John Harmon	See IQS History
1.3	08/25/2014	Birgitta Stocking	Section 6.23B
2.0	03/17/2015	Birgitta Stocking	See IQS History CR 0001168
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9.0	05/11/2017	Birgitta Stocking	See IQS History CR 0001498 - Additional requirements added
10.0	08/29/2017	Birgitta Stocking	See IQS History CR 0001531 - Additional QFDs added
10.1	09/06/2017	Birgitta Stocking	See IQS History CR 0001564 - Error correction; no content changed
11.0	11/07/2017	Birgitta Stocking	See IQS History CR 0001579 - Updated Penalty clauses; added 6.11A & B
12.0	01/15/2018	Birgitta Stocking	See IQS History CR 0001598 - Added QFD-8.11 and QFD-10.17
13.0	03/08/2018	Birgitta Stocking	See IQS History CR 0001659 - Added additional quality clauses
14.0	06/06/2018	Birgitta Stocking	See IQS History CR 0001703 - Additional requirements added
15.0	09/05/2018	Birgitta Stocking	See IQS History CR 0001723 - Additional requirements added
16.0	11/06/2018	Birgitta Stocking	See IQS History CR 0001735 - Requirements updated
17.0	05/02/2019	Birgitta Stocking	See IQS History CR 0001803 - Requirements clarified
18.0	06/20/2019	Birgitta Stocking	See IQS History CR 0001815 - Requirements updated and clarified
19.0	02/16/2020	Birgitta Stocking	See IQS History CR 0001845 - Requirements updated

VACCO Quality Flow-Down Requirements

1. PURPOSE

To document and control contractual and internal quality requirements required to be flowed down to suppliers.

2. SCOPE

This instruction is applicable to those internal clauses related to the quality requirements that are published on purchase requisitions, purchase orders and on the Internet for supplier and subcontractor access. Additional Quality flows down notes are identified in documents identified as VI-QFD-XXX.

3. REFERENCES

- VI-PQD-001 – Control of Suppliers for Fluid Flow Requirements
- VI-MRB-100 – Material Review Instructions
- VI-QFD-002 – Supplier Counterfeit Control Requirements
- VI-QFD-003 – Supplier False and Fraudulent Requirements
- VI-QFD-004 – Level 1 Material Handling for Suppliers
- VI-QFD-005 – Quality Flow-Down Requirements for Chemicals and Clean Room Items
- Supplier Instructions – Located on the VACCO Website
- Supplier Forms – Located on the VACCO Website
- VI-1000 – VACCO Industries Cleaning Facilities Document
- VI-DTS-001 – Dock to Stock for Commercial off the Shelf items and Weld Kits
- VI-HDL-004 – Chemical Management Procedure for Control of Chemical & Hazardous Materials
- VI-INSP-102-APPENDIX-1 – Supplier Instructions for Material Over-Check Program
- VI-VPP-001-APPENDIX-1 – VACCO Source Inspection
- QF-SUP-002 – Approved Suppliers for Dock to Stock

4. ACRONYMS

- a) **ASL** – Approved Suppliers List
- b) **COTS** – Commercial Off The Shelf
- c) **CAR** – Corrective Action Request
- d) **OEM** – Original Equipment Manufacturer
- e) **FAIR** – First Article Inspection Report
- f) **NDT/NDE** – Non-Destructive Test/Evaluation

5. PROCESS

Quality clause flow downs are based on VACCO internal and customer requirements.

- a) Each clause for other VI-QFD-XXX documents will be listed on the purchase order in the following format:
 - Paragraph number and title (VI-QFD-001);
 - QFD2 (VI-QFD-002 – compliance to the entire document) and title;
 - QFD3- paragraph number and title (VI-QFD-003)
- b) Dock to Stock parts will have a template for the Quality flow down notes identified in last section of this document. Additional guidance for Quality Flow down requirements is provided in VI-DTS-001 and QF-SUP-002.
- c) Quality clauses for Chemicals and Clean Room items provided in VI-QFD-005.

Penalty Clauses

Purchasing or Quality personnel may elect to impose a penalty clause on a purchase order.

Delivery dates offered and product/service Quality are binding. The Quality commitment shall include both product and documentation. The Supplier shall meet their commitments to both delivery and quality.

Quality penalties may be enforced on the supplier based on one or more of the following:

- Several requests to correct documentation,
- Supplier ships in nonconforming product without an SRMR or notification to VACCO,
- A history of SRMRs that are caused by the supplier,
- A history of failed source inspections

VACCO may choose to flow down one of the below Penalty clauses based on the supplier's performance history, critical requirements for the product/service or other justifications.

P0001 1% PENALTY- LATE DELIVERY OR UNACCEPTABLE PRODUCT/DOCUMENT QUALITY

If the Supplier defaults either wholly or partly from the order, a penalty at the rate of one (1) percent per week of default will be deducted from your invoiced amount.

P0002 2% PENALTY- LATE DELIVERY OR UNACCEPTABLE PRODUCT/DOCUMENT QUALITY

If the Supplier defaults either wholly or partly from the order, a penalty at the rate of two (2) percent per week of default will be deducted from your invoiced amount.

P0003 3% PENALTY- LATE DELIVERY OR UNACCEPTABLE PRODUCT/DOCUMENT QUALITY

If the Supplier defaults either wholly or partly from the order, a penalty at the rate of three (3) percent per week of default will be deducted from your invoiced amount.

P0004 4% PENALTY- LATE DELIVERY OR UNACCEPTABLE PRODUCT/DOCUMENT QUALITY

If the Supplier defaults either wholly or partly from the order, a penalty at the rate of four (4) percent per week of default will be deducted from your invoiced amount.

P0005 5% PENALTY- LATE DELIVERY OR UNACCEPTABLE PRODUCT/DOCUMENT QUALITY

If the Supplier defaults either wholly or partly from the order, a penalty at the rate of five (5) percent per week of default will be deducted from your invoiced amount.

P0006 NCR COST for UNACCEPTABLE PRODUCT/DOCUMENT QUALITY

A debit of \$50.00 may be charged to the Supplier as a cost for the processing of a "NON-CONFORMANCE REPORT" which is found to be caused by the Supplier.

P0015 15% PENALTY- LATE DELIVERY OR UNACCEPTABLE PRODUCT/DOCUMENT QUALITY

If the Supplier defaults either wholly or partly from the order, a penalty at the rate of fifteen (15) percent per week of default will be deducted from your invoiced amount.

P0020 20% PENALTY- LATE DELIVERY OR UNACCEPTABLE PRODUCT/DOCUMENT QUALITY

If the Supplier defaults either wholly or partly from the order, a penalty at the rate of twenty (20) percent per week of default will be deducted from your invoiced amount.

6. GENERAL QUALITY CLAUSES

All certifications, documents and/or reports provided by the supplier shall be legible and reproducible. Corrections to official records (such as certifications, test reports etc.) shall be in accordance with "Corrections to Supplier Documents" located on the VACCO website, Supplier Instructions unless Clause 8.10 is flowed down on the Purchase Order.

All records shall be retained for 7 (seven) years minimum unless otherwise stated on the VACCO Purchase Order or documentation.

Order of Precedence:

If there is a contradiction between documents the following is the Order of Precedence:

- Purchase Order
 - Special notes
 - Specifications identified on the Purchase Orders
 - Quality Flow Down Notes identified as described above
 - Purchase Order Flow Downs
- Drawings – identified on the purchase order
- Documents and specifications referenced in the drawings

6.1. SPECIFICATION EFFECTIVITY

Suppliers that agree to Purchase Orders that specify raw material revisions are required to comply to these revisions, no substitutions are allowed without an updated PO. If the supplier is unable to locate the revision specified then the supplier shall contact the buyer to determine how to proceed.

A. Current Revision of Defined Specification – VACCO may intentionally flow down superseded revisions to specifications and standards to meet customer requirements. If the Purchase Order does not require a specific revision the following shall apply:

For Raw Material and C.O.T.S specifications – Suppliers shall certify work to standards and revisions directed in the purchase order. When no specific revision is called out in the purchase order and unless otherwise directed in writing, the current revision is preferred but not required.

C.O.T.S specifications - For specifications that are superseded by other specifications, the

supplier may provide parts that are certified to either the specification and revision directed on the PO/drawing or the current revision of the specification that supersedes.

For Testing and Process specifications – Suppliers shall certify work to standards and revisions directed in the purchase order. When no specific revision is called out in the purchase order the latest revision at the time of manufacture is required.

If the process on the PO or drawing is superseded by a new industry standard at the time of manufacture, then the supplier shall request that the processing house certify to the new industry standard at the current revision.

If the latest revision was released less than 6 months prior to the time of manufacture, a transition time is allowed. The supplier may certify to the previous revision.

6.2. VACCO PROPRIETARY PROCEDURE AND DRAWING REQUIREMENTS

Drawings and procedures furnished with this purchase order are proprietary in nature. VACCO Industries retains the exclusive rights to these documents, and they shall be destroyed or returned upon completion of this purchase order.

6.3. PACKAGING REQUIREMENTS

All items are to be packaged in suitable containers for protection in shipment and storage, and in accordance with applicable specifications. Each container of a multiple container shipment shall be identified to show the number of the container and the total number of containers in the shipment and the number of the container containing the packing slip. All shipments by supplier shall include a packing sheet containing VACCO's purchase order number, quantity, part number/size, description of the items shipped, and appropriate evidence of inspection. Materials from different purchase orders shall be listed on separate packing slips.

For custom machined, externally threaded, ground or machined material/hardware, the external areas shall be protected by plastic webbing and/or plastic protective caps. Items requiring protection from physical and mechanical damage shall be protected by wrapping cushioning, compartmentalization, cartonizing or other means to mitigate shock and vibration to prevent damage during handling and shipment, at no time is it acceptable for machined parts or precision parts to be loose or free floating.

6.4. Deleted

6.5. SHEET OR STRIP STOCK – METALLIC

- a) Sheet/strip material shall be of chemical milling quality. Surfaces shall be free from scratches, pits, inclusions and mill rolling marks. Additionally, no waviness or curl on the edges of the sheet/strip material will be accepted.
- b) Sheet/strip material shall be flat within 1/2 inch T.I.R. over an 18 inch length, and within 1/4 inch T.I.R. over a 12 inch width for material over .010 inch thickness.
- c) When a coil is to be provided, the maximum individual coil weight shall not exceed 300 pounds and have a minimum core I.D. of 16 inches.
- d) Material provided shall be degreased (28 dry finish) to be acceptable.

Upon cutting an 18 inch long sample of coil, on a flat surface, coil set cannot exceed 1/8 inch on



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either end for the material under .010 inch thickness.

6.6. TUBING – METALLIC

Supplier shall provide a certification that stipulates the tubing is in fact “seamless” in condition.

6.7. PACKAGING AGE DATED MATERIAL (O-RINGS AND ELASTOMERS)

All synthetic O-rings and elastomers provided to VACCO industries shall be individually packaged. Each package shall have a minimum marking requirement of:

- a) Quantity per bag
- b) VACCO part number and revision
- c) Manufacturer part number
- d) Compound code
- e) Specification number and revision
- f) Cure date in quarters – identifying the quarter and year (1Q14)
- g) Batch code or Batch number
- h) VACCO purchase order number
- i) Expiration date per MIL-HDBK-695

Components/ Materials shall have no less than eighty percent (80%) shelf life remaining at the time of receipt. This flow down note is applicable to components that have a shelf life.

6.8. RAW MATERIAL WELD REPAIR PROHIBITION (OTHER THAN CASTINGS)

If weld repair is necessary during the fabrication process, VACCO Industries written approval shall be obtained *prior* to the performance of the repair. Evidence of approval shall be shipped with the product.

6.9. Deleted

6.10. Deleted

6.11. VACCO–SUPPLIED MATERIAL/PARTS/EQUIPMENT & CUSTOMER/GOVERNMENT PROPERTY (Flowdown either 6.11A or 6.11B)

A. VACCO – SUPPLIED MATERIAL/PARTS (NON CUSTOMER/GOVERNMENT PROPERTY)

Any material provided to the supplier with this purchase order shall be used exclusively for the incorporation into VACCO products. Supplier shall not substitute any material for material provided. All material not used shall be returned to VACCO. Supplier shall maintain accurate records to account for attrition.

B. VACCO – SUPPLIED CUSTOMER/GOVERNMENT PROPERTY

The VACCO buyer shall request the form QF-LOG-001 from the VACCO Property Administrator. The Supplier shall sign the document QF-LOG-001 supplied by the buyer and return the form to the e-mail address provided on the form and copy the buyer.

The Supplier is required to comply with FAR 52.245-1. Supplier will perform annual physical validation of property at their facility and submit a Limited Survey (QF-LOG-105) response to VACCO when requested. Suppliers holding Government property are required to report any loss of property immediately per terms and conditions of the contract. Supplier shall report immediately to VACCO all property no longer required for disposition of property at their facility. VACCO will provide all direction concerning Government property where VACCO has stewardship.

A subsidiary record for property accountable to VACCO will be established at the subcontractor's location upon receipt of Government-owned property.

The subsidiary record will contain, at a minimum, the following information:

1. Customer Tool number – symbol- series – duplicate – serial
2. USED TO MAKE (VACCO tool number)
3. Current PO number for Property Asset

6.12. TITANIUM MATERIAL CONTAMINATION

Titanium shall not come into contact with halogenated fluids, such as; trichloroethylene, Freon, hydrochloric acid, anhydrous methyl alcohol and substance containing mercury, cadmium, silver and gold. Any fluorinated and sulfonated lubricants are prohibited for use on titanium hardware. The supplier shall have written instructions available for review by VACCO Quality upon request.

Upon completion of the cleaning process, handling shall be performed with glove-protected hands, bare skin contact is prohibited. Tools which are used on titanium, such as grinding wheels, shall be controlled in such a way that they do not come into contact with other alloys. During grinding operations no sparking is allowed. The supplier shall flow down this requirement to any subtier suppliers that are responsible for operations that occur after the machining process.

6.13. FIRST ARTICLE INSPECTION REPORT (FAIR) per AS9102

Suppliers shall submit a completed FAIR in accordance with AS9102. **FAIR's are required only if one or more of the following has occurred:**

- The supplier is fabricating/manufacturing the parts/assembly for the first time,
- This is the first time a FAIR is required for this part/assembly,
- A Revision change has occurred to the drawing since the last FAIR submittal. The supplier can submit a delta FAIR,
- The supplier made significant process changes that affect the form, fit or function,
- Two years have lapsed since the last time the supplier has fabricated/manufactured the parts/assembly.

Suppliers are not required to submit a copy of the FAIR if it is not required per the statements above.

6.14. AGE SENSITIVE MATERIAL

The supplier is required to submit with each shipment a certificate attesting conformance of elastomeric/organic materials/parts listed on/or used in the performance of the purchase order. Age sensitive materials shall be identified and packaged in accordance with the applicable procurement specification. All materials such as adhesives, sealants, coating materials, and potting compounds, etc.; shall, be identified on each container with the following:

- a) manufacturer's name
- b) batch number
- c) storage temperature
- d) compound/spec number
- e) date of manufacture
- f) manufacturer's recommended expiration date (if applicable)
- g) shelf life, cure date, retest date (if applicable)
- h) compound number, etc. so as to indicate useful life of the material (if applicable)

Any applicable special storage requirements shall be defined. Material that has an expiration date shall have no less than eighty percent (80%) of its shelf life remaining at the time of receipt. VACCO unless otherwise stated on the Purchase Order. Exceptions to this requirement shall be submitted to the buyer for approval.

6.15. ITEM LOT/HEAT NUMBER INDIVIDUALITY

Supplier to provide each purchase order line item from one lot/heat. In the event that this is not possible, notify VACCO Industries' Purchasing to modify the Purchase Order to identify each lot/heat as a separate line item. Typically, this note is not used for casting, forgings or items that are permanently marked with a serial number or other means of identification.

6.16. Deleted – See 6.14

6.17. Deleted

6.18. GIDEP ANNOUNCEMENTS

Upon notification of GIDEP (Government Industry Data Exchange) nonconformities from GIDEP, VACCO, or another viable source; the supplier shall take actions to mitigate and eliminate negative effects of nonconformities identified.

6.19. Deleted

6.20. MANNED SPACE FLIGHT

For use in human space flight; materials, manufacturing, and workmanship of highest quality standards are essential to astronaut safety. If the supplier is to supply the purchased item with a higher quality than that of the items specified or proposed, then it is requested to bring this fact to the immediate attention of the buyer. This clause will be inserted in all subcontracts and purchase orders for such items down to the lowest tier.

6.21. VACCO FURNISHED MATERIAL/TOOLING/PARTS

Supplier shall ensure that all material furnished by VACCO is free from damage prior to commencing work. Supplier shall notify VACCO of any damage identified upon receipt of the material and/or tooling. Supplier is liable for the total value of material, parts, tooling, etc., when scrapped as a result of damage due to vendor processing or handling. Supplier is not responsible for VACCO controlled parameters, but is responsible for protecting VACCO's investment in raw materials, partially completed items and/or tooling.

6.22. PRELIMINARY PROCEDURE/CERTIFICATION REVIEW (6.22A and 6.22B Deleted)

C. PROCEDURE – Documentation for procedure approval shall be submitted to VACCO Industries for approval based on purchase order and/or drawing requirements.

D. Nameplate Proofs are to be submitted and accepted before production. Shipments made prior to approval may not be accepted.

6.23. FRAUDULENT STATEMENT REQUIREMENTS (6.23B Deleted)

A. The federal statement notification requirements are here by passed down to our suppliers. "The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under federal statutes."

Supplier Certifications are not required to contain the statement above. Statements on certifications and test documents shall be positive and unqualified. Statements such as “to the best of our knowledge” or “we believe the information contained herein” are not acceptable for mill certifications, test documents and VACCO’s direct supplier.

6.24. SUPPLIER QUALITY CONTROL SYSTEM REQUIREMENTS

At a minimum, the supplier shall establish and maintain an orderly system that provides for defect detection, identification, segregation and correction. The system shall further comply with one or more of the following specifications as indicated on the purchase order. The latest revision of each specification shall apply unless noted:

- | | |
|-----------------------------|--------------------------------|
| A. *MIL-I-45208 | E. ANSI /NCSL Z540.3 or Z540-1 |
| B. *MIL-I-45208 with *ISR-1 | F. ISO 9001 or AS9100/ISO9001 |
| C. NHB 5300.4 | G. ANSI/ISO/ASQ Q9001 |
| D. MIL-STD-45662 | H. ISO/IEC 17025 |

**Last released revision.*

Calibration of measurement equipment shall be in compliance with either ANSI/NCSL Z540-1 or ANSI/NCSL Z540.3. If work is subcontracted, the applicable requirements of these specifications shall be imposed on the subcontractor. At a minimum, the supplier shall impose compliance to ANSI/NCSL Z540-1, ANSI/NCSL Z540.3, or ISO/IEC 17025.

VACCO Industries reserves the right to perform on-site surveys or inspections at the supplier and/or sub-tier supplier to maintain system and product quality.

6.25. COUNTERFEIT WORK

For the purpose of this clause, work consists of those parts delivered under this contract that are the lowest level of separately identifiable items (e.g., articles, components, goods and assemblies). “Counterfeit” is defined as an unauthorized copy, imitation, substitute, or modified part (e.g., material, part, and component) which is knowingly misrepresented as a specified genuine part of an original or authorized manufacturer. Supplier agrees and shall ensure that Counterfeit Work is not delivered to VACCO Industries.

- a) Supplier shall only purchase products to be delivered or incorporated as work to VACCO Industries directly from the Original Component Manufacturer (OCM)/Original Equipment Manufacturer (OEM), or through an OCM/OEM authorized distributor chain. Original Component Manufacturer, or Original Equipment Manufacturer’s sell products or components under their brand name, they are the companies that manufacture the original part. Work shall not be acquired from independent distributors or brokers unless approved in advance in writing by VACCO Industries.
- b) Supplier shall immediately notify VACCO Industries with the pertinent facts if the supplier becomes aware of or suspects that it has furnished counterfeit work. When requested by VACCO Industries, supplier shall provide OCM/OEM documentation that authenticates traceability of the affected items to the applicable OCM/OEM.
- c) Supplier shall consult with the OCM/OEM or authorized distributor/franchise to confirm that the authorized distributor/franchise has been authorized by the OCM/OEM to sell the specific item being procured, prior to issuing a purchase order. If not procuring from the OCM/OEM, the supplier shall provide evidence from the OCM/OEM that the supplier used was indeed authorized by the OCM/OEM. For example, an OCM/OEM list of authorized distributors on

OCM/OEM letterhead or website would suffice. If OCM/OEM does not have an authorized list of distributors/franchises, documented evidence shall be provided stating such.

6.26. HANDLING PRECAUTIONS FOR OUTSIDE PROCESSING/TEST

Supplier to exercise extreme care in the handling of parts to ensure no dents, nicks, dings or scratches occur. Suppliers shall perform a visual inspection when receiving hardware from VACCO to ensure no damage has occurred. **Any damage shall be reported to VACCO Industries within 24 hours of the visual inspection.** Protective end caps shall be used on all tube end parts, VACCO Industries shall provide end caps.

6.27. Deleted

6.28. Deleted

6.29. DEGREASING – CLEANING

Machined parts shall be degreased, cleaned and free of contaminants before shipment to VACCO Industries.

6.30. SPECIAL USE VARIANCE

The Special Use Variance clause shall be used to purchase Production: parts, materials (including chemicals), and processes from suppliers on VACCO's Unapproved Suppliers List.

QUALITY/PURCHASING MANAGER OR DESIGNEE DATE

OPTIONAL SIGNATURE DATE

6.31. Deleted

6.32. PROCUREMENT SOURCE PROHIBITION

No material from Western Titanium, Inc. and/or Mach-2 Metals will be accepted by VACCO Industries.

6.33. GOVERNMENT TOOLING IDENTIFICATION

Supplier to attach a tag or permanently mark on tool surface, depending on the size of the tool, the following information per FAR 52.245-1:

1. TOOL NUMBER: _____ REV: _____
2. SYMBOL: _____
3. SERIES: _____
4. DUPLICATE: _____
5. PO NUMBER AND LINE ITEM: _____
6. SALES ORDER NUMBER: _____
7. OWNERSHIP: _____
8. USED-TO-MAKE VACCO P/N (IF APPLICABLE): _____

If there is insufficient space on the tooling surface, mark on VACCO supplied I.D. Tag. Tool shall be placed in a storage container for protection and tag shall be affixed to container. Mark tool with revision when required on the tooling surface and rework tag. Also, if possible, insert picture of purchased tool inside the container.

6.34. Deleted

6.35. REACH COMPLIANCE (REGISTRATION, EVALUATION, AUTHORIZATION AND RESTRICTION OF CHEMICALS)

For each delivery, the supplier shall provide one of the following:

- A completed "VACCO Reach Declaration Form," Form QF-ENV-001. This form shall be completed based on the "Reach Annex XVII Restriction List," Form QF-ENV-002. The list and form are located on the VACCO website, Quality Clauses for Suppliers.
- A Certification of Reach Compliance or a Reach Compliance statement on their Certification of compliance.

Suppliers shall flow down the requirement above to their subtiers.

Additional Reach information can be found at the European Chemicals (ECHA) Website:

<https://echa.europa.eu/>

6.36. Deleted

6.37. Deleted

6.38. COMPLIANCE TO SEC CONFLICT MATERIALS RULE -VACCO will identify 6.38A or 6.38B

- A.** Per US Security and Exchange Commission's Conflict Minerals Rule, suppliers and their sub-tier suppliers shall declare materials and their originating countries in accordance to Section 1502(b)-(p)-(1)-(A) of Dodd-Frank Act if any material defined in Section 1502(e)-(4) of Dodd-Frank Act is used in their products delivered VACCO.
- B.** Per US Security and Exchange Commission's Conflict Minerals Rule, suppliers and their sub-tier suppliers shall declare that their product is "**DRC Conflict Free**" on their certificates of conformance in accordance to Section 1502(b)-(p)-(1)-(D) of Dodd-Frank Act if none of the material defined in Section 1502(e)-(4) of Dodd-Frank Act is used in their products delivered VACCO.

6.39. Deleted

6.40. EEE PARTS - DATE OF MANUFACTURE

All Electrical, Electronic or Electromechanical (EEE) parts procured from the organization or its supplier shall have been manufactured within the following:

- Plastic Encapsulated Microcircuits (PEMs) - Three (3) years from the delivery date,
- All other EEE parts - Five (5) years from the delivery date.

This includes all subassemblies of the article being procured.

6.41. RECORD KEEPING

- A.** All records and documents associated to the purchase order shall be retained at the supplier's facility for a **minimum of 10 years**. Records shall be available for VACCO review and submittal upon request within the 10 years.
- B.** All records and documents associated to the purchase order shall be retained at the supplier's facility for **life**. Records shall be available for VACCO review and submittal upon request.

7. INSPECTION REQUIREMENTS

7.1. VACCO SOURCE INSPECTION

Notify the VACCO Industries' Buyer at least forty-eight (48) hours in advance. All inspection documents parts shall be available at the time of inspection.

Exemption - This clause does not apply to the following instances:

- The purchase order is placed with a Distributor
- The purchase order is placed with a Supplier that is over 60 miles away from VACCO Industries.

Suppliers that meet at least one of the above criteria are not required to request source or request a waiver for final source.

Note: This exemption does not apply to In-process source inspection.

Drawings that have dimensions that apply prior to, but not limited to, coating/plating, bending, machining, or having final slotting/cutting that would not allow the inspector to verify the measurement at final inspection shall require a request for source inspection prior to the processing or slot cutting.

IN-PROCESS SOURCE INSPECTION: Dimensions that cannot be verified after processing, such as, but not limited to, plating/coating application, bending machining, slotting/cutting or precision cleaning operations shall be reviewed by a member of the VACCO Supplier Quality team or a designated Quality representative prior to that process being performed. In-process source inspection may be waived by the Supplier Quality representative or designee.

A. IN PROCESS SOURCE INSPECTION: In-Process Source Inspection applies to all source inspection requests (see above), as applicable, this will include items identified above or any additional items defined in the Purchase Order.

Supplier shall request in-process source inspection and provide an inspection report of the affected dimensions to the Buyer. VACCO Quality shall review the report and provide feedback and approval of the source inspection. VACCO may elect to perform an on-site in-process inspection after reviewing the report. This Waiver shall be sent with the shipment of parts and documents. See the VACCO website at the enclosed link ([In-process source inspection](#)).

B. FINAL SOURCE INSPECTION: Upon completion of Final Source Inspection, the shipping documents or the Certification of Conformance shall be stamped and/or signed by the VACCO source representative prior to shipping, unless instructed to do so by the source inspector/representative

Exemption – Clauses 7.1B shall not apply to the following instances:

- The purchase order is placed with a Distributor
- Supplier is located over 60 miles away from VACCO Industries.

C. FINAL SOURCE INSPECTION REQUIRED: Source on this Purchase Order cannot be waived. It is preferred that suppliers are chosen within a 60 mile radius.

Upon completion of Final Source Inspection, the shipping documents or the Certification of Conformance shall be stamped and/or signed by the VACCO source representative prior to shipping, unless instructed to do so by the source inspector/representative.

WAIVED SOURCE INSPECTION: VACCO Supplier Quality or designee shall provide written authorization is waived. Supplier shall provide a copy of this authorization with the shipment of the part(s).

7.2. GOVERNMENT SOURCE INSPECTION

SUPPLIER-VERIFY THERE IS A MANDATORY SIGNATURE PRIOR TO PO ACCEPTANCE

A Government Source Inspection is required prior to shipment from your plant. Upon receipt of this Order, promptly notify the Government representative who normally services your plant so that appropriate planning for Government inspection can be accomplished. If you do not have an assigned Government representative, notify the nearest Defense Contract Management Agency (DCMA) Office. In the event that a local Government representative or DCMA Office cannot be located; notify the VACCO Industries' Buyer immediately.

SUPPLIER-NOTIFY THE BUYER IMMEDIATELY IF THERE IS NO SIGNATURE UPON RECEIPT OF THIS PO.

DCMA/QAR: _____

Signature: _____

Date: _____

7.3. Deleted

7.4. Deleted

7.5. 100% FINAL INSPECTION BY SUPPLIER

Supplier shall perform 100% component and end item final inspection of all characteristics and items listed on both the purchase order and drawing to assure conformance to the requirements. All values and notes shall be recorded as specific dimensions or a range. In cases where attribute verifications are required an accept/reject notation shall be recorded.

Supplier inspection sheets shall be provided to VACCO Industries with the hardware at the time of shipment. The results shall be separate from the FAIR report/results. The Supplier may use the AS9102 Form 3 as a form for the Final Inspection report.

7.6. Deleted

7.7. SAMPLING INSPECTION

Items shall be inspected by the supplier's sampling inspection plan which complies with ANSI/ASQC Z 1.4 (normal, level II, single sampling procedures) and this compliance shall be stated on the supplier certification.

If the supplier elects to perform 100% inspection, then this compliance shall be stated on the

supplier certification.

If the supplier prefers to employ an inspection sampling which does not comply with ANSI/ASQC Z 1.4 (normal, level II, single sampling procedures), the supplier shall provide the sampling inspection plan to VACCO's Quality Department for approval.

For POs that have a deliverable count of less than or equal to 13 (≤ 13) the supplier shall perform 100% inspection. A statement is not required on the supplier certification.

7.8. DOCK TO STOCK PROCESS PER QF-SUP-002

VACCO Internal Clause: This hardware has been designated for the Dock to Stock process.
Reference: QF-SUP-002.

8. CERTIFICATION REQUIREMENTS

Certification requirements are objective quality evidence of materials and processes performed. A review shall be performed of specifications, drawings and customer requirements to determine required certifications.

Note: Section 8

- For all applicable items below (*) signatures may be either electronic or manual. If the electronic signature is legible, then a manual signature and printed name are not required."
- All reports supplied to VACCO Industries shall be legible and be capable of scanning three (3) times.

8.1. MILL TEST REPORTS - Applicable for metal material/parts from machine shops or raw material houses) See 8.11 for non-metal parts.

The Supplier shall furnish copies of the original mill test reports, containing all acceptance test results required by the material specifications.

Statements on certifications and test documents shall be positive and unqualified. Statements such as "to the best of our knowledge" or "we believe the information contained herein" are not acceptable.

When a supplier document is revised, it shall be identified as a "corrected copy" and all changes shall be identified as a change. The revised document shall be re-signed and dated at the time of correction.

a. **The mill test reports** shall contain the following information:

- Mill letterhead
- *Legible name of authorized representative, title, date and signature
- The mill test report shall certify to the material specification and revision required by the Purchase Order
- All acceptance test results required by the material specifications

b. **Distributor Certification** – Raw material purchased from a distributor shall include a Certificate of Conformance from each distributor and the mill test report. Each certification shall contain the following information:

- Name and address of the company purchasing the material

- Name and address of the company the material was purchased from
- Description of the purchase
- Printed name of authorized representative, title, date and signature
- In the case of raw material transferred by distributors, the material specification and revision are not required on the distributor certification

When a supplier document is revised, the revised document shall be re-signed and dated at the time of correction.

- c. **Level 1** Purchase Orders - (marked as "Level 1" on the PO)
Specification DI-MISC-81020 applies when chemical and or mechanical properties are altered from the original mill certification (heat treated or cold worked). In addition to all tests required by the material specification, tensile test shall be performed.
- d. **Level 1** Purchase Orders – Recommended for Level 1 material.
- The Raw Material should be purchased from a distributor or mill that is trained to Level 1 requirements.
 - The Raw Material should be purchased from a supplier that is approved by Electric Boat as a Level 1 Supplier.
 - The Raw Material should be purchased from a Distributor that is an approved VACCO Level 1 supplier. The supplier may request a list from the VACCO buyer.
 - The Raw Material/Part is provided by VACCO.

8.2. SUPPLIER CERTIFICATION OF CONFORMANCE

A Certification of Conformance on the company's letterhead shall accompany all shipments to VACCO Industries.

The supplier is required to provide documented certification(s) that the material and/or services supplied against this order meet all applicable drawings, specifications and purchase order requirements. Statements on the supplier's certification shall be positive and unqualified. Disclaimers such as "to the best of our knowledge" or "we believe the information contained herein is true" are not acceptable.

The Supplier's Certification of Conformances shall contain:

- VACCO's purchase order number
- *Legible name of authorized representative, title, date and signature
- Part number, description, revision and quantity
- Applicable specification number(s) and revisions for processes certified by this Supplier.
 - Material Specifications and revision required on mill certification only.
 - Process specifications performed at a subtier are required only on the applicable subtier certifications.
- Material and/or processing specifications and their revisions if the shipment is not accompanied by the test reports (chemical and physical or original mill test reports) or processing certifications.

NOTE: Specifications numbers and revisions that are identified on the Supplier/subtier certifications shall be the same as those mentioned on the PO or drawing.

When a supplier document is revised, it shall be identified as a "corrected copy" and all changes shall be identified as a change. The revised document shall be re-signed and dated at the time of correction.

VACCO Supplied Material - the supplier shall reference VACCO's material certification number (as noted on VACCO's shipping documents) on the supplier's certification of conformance.

8.3. BASIC CERTIFICATION OF CONFORMANCE

Supplier shall include with each shipment a certificate of conformance or compliance that meets the requirements of the VACCO purchase order. The certification shall include:

- VACCO purchase order number,
- *Legible name of authorized representative, title, date and signature
- Part number or catalog number with dash number (if applicable), and revision of product supplied (if applicable),
- Quantity,
- Supplier lot, work order, sales order, or another traceable number (if applicable)
- Chemicals and gases (expiration date if applicable) – If shelf life is indefinite Certification of Conformance shall state "indefinite".

Quality records specified in the Purchase Order shall be available for VACCO review upon request.

Dock to Stock Suppliers only:

Suppliers that have a website login certification access, the certification shall be available on line to applicable VACCO personnel. A packing slip will be submitted with the shipment.

For weld kits, the supplier will provide a Basic Certification of Conformance and the mill certification will be kept on file by the supplier for at least 7 years.

8.4. Deleted

8.5. SPECIAL PROCESS CERTIFICATION

A certification is required to be submitted to VACCO with the shipment of the product for material subject to "special processes" (such as passivate, heat treating, welding, surface treatment, etc.). It shall include identification of the process by specification number, revision, name of subcontractor (if applicable), legible name, signature and certification level or title of the person performing the process, and serial numbers of parts processed (if applicable).

8.6. WIRE/CABLE CERTIFICATION

Each type of wire or cable on this order shall include a certification indicating the size, color, class, type and the specification to which the wire conforms.

8.7. Deleted

8.8. Deleted

8.9. MERCURY FREE CERTIFICATION

A mercury free statement shall accompany all shipments to VACCO Industries on this purchase order. The mercury free statement shall be on the test report/certificate of conformance of supplier and all sub-tiers or may be a separate certification. The statement shall certify that during the manufacturing process, material furnished on the above purchase order did not come in contact with mercury or its compounds. An exception to this statement is allowed for certifications for one of the following:

- Nonmetallic parts or processing/testing of nonmetallic parts
- A sample lot is sent for destructive testing,
- A sample lot is sent for testing and that lot is not to be used for production and is packaged separately from the other portion of the lot,
- Material is not moved onto the shop floor and is only processed through as inventory,
- Material is not moved into that company and the certification is for transfer purposes only.

If the supplier chooses to verify the material with a mercury sniffer, then the supplier shall provide a final certification stating a mercury free statement based on mercury testing. Then certifications prior to the testing do not require a mercury free statement.

8.10. DOCUMENTATION CORRECTIONS (Program Specific)

A corrected copy is a document is defined as:

- A document that is Received at VACCO with cross outs,
- A document that needs to be altered after VACCO has received the product.
 - Including handwritten or typed information

Corrections to documents shall be clearly identified and shall contain the following:

- Document shall identified as "Corrected Copy"
- A list of the items that were added or removed (state "added" or "removed"),
- All changes shall be identified with an "*" and be Dated and initialed
- Manual changes - shall have a single line cross out
- Manual changes - The original entry shall remain legible
- The document shall be resigned, dated and title. The signature shall be from one of the following:
 - The original person
 - Supervisor of the original person
 - Designee defined

8.11. SUPPLIER SOURCE CERTIFICATION (For Non-metallic material: plastics, nylon, delrin, magnets, magnetics etc.) Used in place of 8.1.

The Supplier shall furnish a document identifying the original source of the material, containing the following information:

- Source company's letterhead – Name and address
- Description of the purchase
- Lot number (number may not match the final lot number of the product, but should be referenced on the Supplier's certification).
- Applicable specifications (may not be the final specification on the Purchase Order or drawing)

The document may be identified as a Certification of Conformance, Packing Slip or Bill of Lading.

8.12. FAA INSPECTION (This is a VACCO Internal Clause)

For parts received at VACCO for this Purchase Order, a VACCO FAA inspector is required at Receiving Inspection per CFR 14 part 145.

8.13. Circuit Card Assembly (CCA) Certification

Soldering and Component Mounting shall be in accordance with the requirements of IPC/EIA J-STD-001, Performance Class 3 and the workmanship standards of IPC-A-610 Performance Class 3.

The VACCO's supplier shall provide the following from the supplier point of origin:

- Certification from the Printed Circuit Board Supplier in accordance with clause 8.3
- Certification from the Circuit Card Assembly Supplier in accordance with clause 8.3
- Certification from any processing houses: such as conformal coating
- Certification from VACCO's supplier – if this is not one of the above

The above certifications shall include all of statements of all testing or processing performed including the specification and revision of the testing/processing based on PO and drawing requirements.

Printed Circuit Boards shall be in accordance with clause 10.12.

Testing and Processing revisions shall be in accordance with clause 6.1A.

ESD Packaging shall be in accordance with clause 10.11.

Components for CCA will be purchased per clause 6.25.

9. TRACEABILITY AND IDENTIFICATION REQUIREMENTS

9.1. MCS-6 REQUIREMENT (Level 1 and MCS-6 Suppliers)

- A) MCS-6 requirements shall be met as described in this paragraph and paragraphs (B) thru (E) as applicable unless otherwise noted in the Purchase Order or amended by a VACCO Quality Flow Down text note. If work is subcontracted, this requirement shall be contractually imposed on the subcontractor. Material test specimens or samples as required by the MCS-6 specification shall be retained by the supplier for at least seven (7) years after completion of this purchase order. Material and Product Test Reports requirement is met through VACCO QFD 8.1 and/or 8.2.
- B) Testing for Confirmation of Material Condition (Level A Only) shall be amended to Paragraph (A) and its requirement flowed down in its entirety from MCS-6.
- C) Confirmation of Material Test Reports (Level A and B only) shall be amended to Paragraph (A) and its requirement flowed down in its entirety from MCS-6. The over-check frequency shall meet the requirements of VACCO Raw Material Overcheck Program, VI-INSP-102-APPENDIX-1, available on the VACCO website.
- D) Material Traceability (Level A and B Only) shall be amended to Paragraph (A) and its requirement flowed down in its entirety from MCS-6.
- E) Generic Material Identity Testing (Level A, B, and C) shall be amended to Paragraph (A) and its requirement flowed down in its entirety from MCS-6.
- F) Procedural Requirements (Level A, B, and C) shall be amended to Paragraph (A) and its requirement flowed down in its entirety from MCS-6.

MCS- Requirement	A	B	C	D	E	F*
Level C	X				X	X
Level B	X		X	X	X	X
Level A	X	X	X	X	X	X
*Procedural Requirement (F) and certification to MCS-6 is required for all levels						

9.2. Deleted (See MCS-6 REQUIREMENT)

9.3. Deleted (See MCS-6 REQUIREMENT)

9.4. **“LEVEL 1” TRACEABILITY (Supplier Requirements described in VI-QFD-004)**

Suppliers that accept Purchase Orders that have this requirement are directed to review VACCO’s procedure VI-QFD-004 located on the VACCO website.

Suppliers accepting these Purchase Orders shall be identified in VACCO’s Quality System as Level 1 Suppliers and are accepting Purchase orders for crucial Navy shipboard applications.

Suppliers shall have an internal process or procedure that addresses the requirements in VACCO’s document VI-QFD-004 provided on the VACCO website.

9.5. **RAW MATERIAL TRACEABILITY**

Prior to machining, the supplier shall identify each piece of material and each traveler and test report with the traceable number to provide traceability to the corresponding heat/lot, casting, forging or heat lot batch number. This marking shall be applied with waterproof ink or another permanent process. Marking is not required to be visible after the machining process.

9.6. Deleted

9.7. **POSITIVE TRACEABILITY OF PARTS (machined metal parts or assemblies)**

Parts traceability is required by cross-referencing all manufacturing and shipping documents with reports and certifications for heat lot or uniquely identified components or lots. Records shall be available for VACCO review upon request.

9.8. **NASA CERTIFICATION/ TRACEABILITY**

The Supplier shall clearly state on the Supplier Certification the **“Date of Manufacture” or DOM and the heat, batch or lot number.** It will not be assumed that the certification date is the DOM.

Each lot shall not be intermixed with subsequent lots of the same piece.

9.9. Deleted

9.10. Deleted

9.11. **NASA STD 6008 FASTENER TESTING REQUIREMENTS**

The items on this purchase order are subject to the full requirements of **NASA STD 6008**. Unless otherwise stated the items on this purchase order are assumed to be classified as low risk fracture. Only VACCO approved NASA STD 6008 suppliers shall be used for procurement of NASA STD 6008 fasteners.

Traceability Requirements:

- Per Table 1 of NASA STD 6008 Partial traceability is required for low risk fracture along with certification validation testing (CVT).
- The validation testing sample size will be per Table 4.11.2.2 for Non-approved Manufacturer.

A Manufacturer Test Report (MTR) shall accompany every lot procured under NASA STD 6008. The fastener manufacturer shall certify and include all information required by the applicable fastener specification.

This shall include: fastener lot number, manufacturing date, lot quantity, raw material heat number, chemical composition, and mechanical and metallurgical test results, as well as special process (passivation, anodize etc.).

Low Risk Fracture document deliverables

- Approved Distributor Certificate of Conformance
- MTR
- Partial Traceability or Complete
- Certification Validation Testing (CVT)
 - 100% Visual
 - 100% Dimensional
 - Tensile (Sampling per lot)
 - Hardness testing may be performed in lieu of tensile testing for washers and inserts.
 - Chemical (Sampling per lot)

10. SPECIAL PROCESS REQUIREMENTS

All drawings that require castings manufactured and inspected to Tech Pub 278 shall be inspected to Tech Pub 278 Change A (issue date 2/14/13) for the clarification of inspection characteristics and acceptance criteria.

Alternate Approach – This applies to Suppliers that are the manufacturer and have the capability of perform In House Testing.

Supplier shall provide test data sheets to the requirements below (these data sheets do not require signatures). To certify to the results of these tests, the Supplier may list the test type and/or specification on their Certification of Compliance. The Supplier's certification shall contain the requirements of 8.2.

10.1. PENETRANT INSPECTION

Liquid penetrant inspection of hardware on this purchase order is required in accordance with the listed specifications, procedures and acceptance criteria. As a minimum, the supplier shall assure that the following information is included on the certification of inspection.

- a) Part number
- b) Material and heat/lot number
- c) Description/type and/or classification of casting, forging or weldment
- d) Total quantity inspected, quantity accepted and rejected**

- e) Serialization, if delineated
- f) VACCO Industries' purchase order number or the Supplier's subtier purchase order number (if applicable)
- g) Supplier's internal control number
- h) Date of inspection
- i) Procedure, technique sheet # (if applicable*) acceptance criteria and their effective revisions
- j) Applicable Specifications
- k) Signature, Title and printed name of the Level 2 or Level 3 personnel who performed the test.

When required, hardware found to be acceptable by nondestructive examination shall be identified by placing the proper acceptance test/inspection stamp on the physical parts. All hardware found to be unacceptable shall be identified in such a manner which will adequately distinguish the material from the acceptable lot (without physically damaging the parts). In those cases where testing is performed by a subcontractor, a copy of the subcontractor's certification shall accompany any shipment to VACCO Industries.

In those cases where testing is performed by VACCO's supplier a separate certification is not required, all requirements shall be provided on the supplier certification.

Alternate Approach may be used that allows the supplier to sign the Certification of Compliance as the authorized signature.

*Technique sheets are required if parameters are not defined based on the specified process.

**If a sampling process is chosen based on the specification on the drawing or purchase order, the supplier shall send the quantity specified by the purchase order to the testing house (internal or external). The testing house shall select the sample required and certify that the lot quantity is accepted.

10.2. ULTRASONIC INSPECTION

Ultrasonic inspection of hardware on this purchase order is required in accordance with the listed specifications, procedures, scan plans and acceptance criteria. At a minimum, the supplier shall assure that a copy of the corresponding scan plan is provided and that the following information is included on the certification of inspection.

- a) Part number
- b) Material and heat/lot number
- c) Description/type and/or classification of casting, forging or weldment
- d) Total quantity inspected, quantity accepted and rejected
- e) Serialization, if delineated
- f) VACCO industries' purchase order number or the Supplier's subtier purchase order number (if applicable)
- g) Supplier's internal control number
- h) Date of inspection
- i) Procedure, scan plan number, acceptance criteria and their effective revisions
- j) Applicable Specifications

When required, hardware found to be acceptable by nondestructive examination shall be identified by placing the proper acceptance test/inspection stamp on the physical parts.

All hardware found to be unacceptable shall be identified in such a manner which will adequately distinguish the material from the acceptable lot (without physically damaging the parts). In those

cases where testing is performed by a subcontractor, a copy of the subcontractor's certification shall accompany any shipment to VACCO Industries.

In those cases where testing is performed by VACCO's supplier a separate certification is not required, all requirements shall be provided on the supplier certification.

Alternate Approach may be used that allows the supplier to sign the Certification of Compliance as the authorized signature.

10.3. MAGNETIC PARTICLE INSPECTION

Magnetic particle inspection of hardware on this purchase order is required in accordance with the listed specifications, procedures, technique sheets and acceptance criteria. At a minimum, the supplier shall assure that a copy of the corresponding technique sheets is provided and that the following information is included on the certification of inspection.

- a) Part number
- b) Material and heat/lot number
- c) Description/type and/or classification of casting, forging or weldment
- d) Total quantity inspected, quantity accepted and rejected
- e) Serialization, if delineated
- f) VACCO Industries' purchase order number or the Supplier's subtier purchase order number (if applicable)
- g) Supplier's internal control number
- h) Date of inspection
- i) Procedure, technique sheet number, acceptance criteria and their effective revisions
- j) Applicable Specifications

When required, hardware found to be acceptable by nondestructive examination shall be identified by placing the proper acceptance test/inspection stamp on the physical parts.

All hardware found to be unacceptable shall be identified in such a manner which will adequately distinguish the material from the acceptable lot (without physically damaging the parts). In those cases where testing is performed by a subcontractor, a copy of the subcontractor's certification shall accompany any shipment to VACCO Industries.

In those cases where testing is performed by VACCO's supplier a separate certification is not required, all requirements shall be provided on the supplier certification.

Alternate Approach may be used that allows the supplier to sign the Certification of Compliance as the authorized signature.

10.4. RADIOGRAPH INSPECTION

Radiograph inspection (x-ray) of hardware on this purchase order is required in accordance with the listed specifications, procedures, shooting sketches and acceptance criteria. Completed films, technique sheets or shooting sketches and reader sheets shall be provided to VACCO Industries unless otherwise specified. At a minimum, the supplier shall assure that the following information is included on the certification of inspection.

- a) Part number
- b) Material and heat/lot number
- c) Description/type and/or classification of casting, forging or weldment
- d) Total quantity inspected, quantity accepted and rejected
- e) Serialization, if delineated

- f) VACCO Industries' purchase order number or the Supplier's subtier purchase order number (if applicable)
- g) Supplier's internal control number
- h) Date of inspection
- i) Procedure, shooting sketch number, acceptance criteria and their effective revisions
- j) Applicable specifications

When required, hardware found to be acceptable by nondestructive examination shall be identified by placing the proper acceptance test/inspection stamp on the physical parts. All hardware found to be unacceptable shall be identified in such a manner which will adequately distinguish the material from the acceptable lot (without physically damaging the parts). In those cases where N.D.E. is performed by a subcontractor, a copy of the subcontractor's certification shall accompany any shipment to VACCO Industries.

In those cases where testing is performed by VACCO's supplier a separate certification is not required, all requirements shall be provided on the supplier certification.

Alternate Approach may be used that allows the supplier to sign the Certification of Compliance as the authorized signature.

10.5. ACCEPTANCE TEST REPORTS (FLOW, SHOCK, VIBRATION, ETC.)

Supplier shall include with each shipment copies of acceptance test results, signed by an authorized agent of the supplier, indicating the results of acceptance tests required by the purchase order. Where quantitative limits are established within the procedure or specification, the report shall indicate the values obtained. The test reports shall include the control identity (e.g. Heat, lot, serial number) of material/items tested.

10.6. HEAT TREATMENT CERTIFICATION REQUIREMENT

Supplier shall perform heat treatment in accordance with the specifications and revisions listed on this purchase order. Supplier shall supply a certification for the heat treatment.

10.7. HEAT TREAT DOCUMENTATION

In addition to the requirements of Heat Treatment Certification Requirement above, copies of furnace charts and vacuum charts (if applicable) are required showing temperatures, ramp rates, time at temperature, furnace number, vacuum levels, etc.

10.8. HARDNESS REQUIREMENTS FOR HEAT TREATMENT PROCESSORS

Supplier shall record hardness readings on the heat treat certifications for items heat treated on this purchase order.

10.9. SOLDERABILITY

Solderability of external leads and terminals: External leads, pin and terminals of all components shall be tested and comply with the solderability requirements specified in IPC/EIA-J-STD-002.

10.10. Deleted

10.11. ELECTROSTATIC DISCHARGE (ESD) PROTECTION

Protection from electrostatic discharge (ESD) damage shall be provided to all Class I, II or III ESD susceptible devices in accordance with the manufacturer's requirements. The protection level provided by the original manufacturer shall extend through all procurement, handling, storage,

packaging and shipping cycles. ESD shall meet the requirements of ANSI/ESD S20.20.

10.12. PRINTED CIRCUIT BOARDS

The supplier shall assure that the materials, manufacture, testing and packaging of printed circuit boards or printed wiring boards supplied to VACCO Industries are in accordance with:

- IPC-2221 Class 3, latest revision, printed circuit board/printed wiring board general and detailed specification, including solderability.
 - Conformance test data shall be provided for each lot shipped to VACCO Industries.

10.13. ***CUSTOMER APPROVED SOURCES AND PROCESSES***

Customer Approved Sources or Processes are required on this order.

For Customer Approved Sources not available to the Supplier the following will apply:

- A list of Approved Subtiers for each process shall be provided from the QE to the Buyer.
- The Buyer shall provide a list to the Supplier.

Q.E. SIGNATURE

DATE

For Customer Approved Sources available on a public accessible website:

- The QE will provide the website address on the PO
- A QE signature is not required
- The Supplier shall select an approved subtier and location for the process required

Parts that are in Supplier stock – The Supplier shall contact the Buyer prior to shipment to verify that the subtier at that location was approved for that process at the time of manufacturing.

10.14. CERTIFICATION REQUIREMENTS – CLEAN ROOM USE - (Not entered in WDS)

Quality flow downs for Clean Room items and chemicals are provided in VI-QFD-005. All requirements are described on the Purchase Order. The supplier is not required to review the document VI-QFD-005.

10.15. CERTIFICATION REQUIREMENTS – SOLDERING PROCESSES

- A) Solder alloys shall be certified to J-STD-006 or equivalent
- B) Flux shall be certified to J-STD-004 or equivalent

10.16. CLEAN ROOM REQUIREMENTS – (Not entered in WDS)

Clean Room certification requirements are provided in VI-1000. All requirements are described on the Purchase Order. The supplier is not required to review the document VI-1000.

10.17. EDDY CURRENT NDE INSPECTION

Eddy Current NDE Inspection of hardware on this purchase order is required in accordance with the listed specifications, procedures, sketches, applicable specifications and acceptance criteria. At a minimum, the supplier shall assure that the following information is included on the certification of inspection.

- a) Part number
- b) Total quantity inspected, quantity accepted and rejected

- c) Serialization, if delineated
- d) VACCO Industries' purchase order number or the Supplier's subtier purchase order number (if applicable)
- e) Supplier's internal control number
- f) Date of inspection
- g) Applicable Specifications

When required, hardware found to be acceptable by nondestructive examination shall be identified by placing the proper acceptance test/inspection stamp on the physical parts. All hardware found to be unacceptable shall be identified in such a manner which will adequately distinguish the material from the acceptable lot (without physically damaging the parts). In those cases where N.D.E. is performed by a subcontractor, a copy of the subcontractor's certification shall accompany any shipment to VACCO Industries. In those cases where testing is performed by VACCO's supplier a separate certification is not required, all requirements shall be provided on the supplier certification.

11. QUALITY CLAUSE SELECTION

The specific clauses to be used on a purchase order are identified during contract review. The QE shall use the below information as a guide. During the requisition review process, the QE shall tailor the clauses and add or subtract other applicable clauses based on contract requirements.

11.1 MACHINED PARTS

- 8.2 Supplier Certificate of Conformance
- 8.1 Mill Test Reports
- 6.13 First Article Inspection Report per AS9102
- 6.1A Specification Effectivity
- 6.2 VACCO Proprietary Procedure and Drawing Requirements
- 6.3 Packaging Requirements
- 6.23A Fraudulent Statement Notification
- 6.24 Supplier Quality Control System Requirements
- 6.15 Item Lot/Heat Number Individuality (program dependent)
- 8.9 Mercury Free
- 6.21 VACCO Furnished Material/ Tooling/Parts (if applicable)
- 7.1X In-process or Final Source Inspection (Optional A, B or C – as Required)

ADDITIONAL REQUIREMENTS FOR LEVEL I

- 9.1 MCS-6 Requirement (Dependent on order)
- 9.4 Level I Traceability (Reference VI-QFD-004)
- 6.15 Item Lot/Heat Number Individuality
- 6.1A Specification Effectivity
- QFD3-6.X Fraud and Falsification (Program Dependent – VI-QFD-003)

11.2 CASTINGS & FORGINGS

- 8.2 Supplier Certificate of Conformance
- 8.1 Mill Test Reports
- 10.6 Heat Treatment Certification Requirements
- 6.1A Specification Effectivity
- 6.2 VACCO Proprietary Procedure and Drawing Requirements
- 6.23A Fraudulent Statement Notification (6.23A, QFD3-6.1 or QFD3-6.2 if required)
- 6.3 Packaging Requirements
- 6.24 Supplier Quality Control Systems
- 9.7 Positive Traceability of Parts
- 6.21 VACCO Furnished Material/ Tooling/Parts (if applicable)

ADDITIONAL REQUIREMENTS FOR NON-SERIALIZED PARTS

- 6.15 Item Lot/Heat Number Individuality

11.3 OUTSIDE PROCESSING

a) **OUTSIDE TESTING**

NOTE: Conduct testing PER _____, REV _____, PARA _____

- 10.5 Acceptance Test Reports
- 8.2 Supplier Certificate of Conformance

- 6.3 Packaging Requirements
- 6.23A Fraudulent Statement Notification (6.23A, QFD3-6.1 or QFD3-6.2 if required)
- 8.9 Mercury Free – Non Destructive Testing only
- 6.21 VACCO Furnished Material/ Tooling/Parts (if applicable)
- 6.26 Handling Precautions for Outside Processing/Test

b) OUTSIDE PROCESSING NDT

NOTE: Inspection to be conducted IAW _____, REV _____

- 8.2 Supplier Certificate of Conformance
- 6.18 GIDEP Announcements
- 6.23A Fraudulent Statement Notification (6.23A, QFD3-6.1 or QFD3-6.2 if required)
- 10.1–10.4 or 10.17 As Applicable
- 8.9 Mercury Free – Non Destructive Testing only
- 6.21 VACCO Furnished Material/ Tooling/Parts (if applicable)
- 6.3 Packaging Requirements
- 6.26 Handling Precautions for Outside Processing/Test

c) OUTSIDE PROCESSING WELDING

NOTE: Welding to be conducted IAW _____, REV _____

- 8.2 Supplier Certificate of Conformance
- 6.18 GIDEP Announcements
- 6.23A Fraudulent Statement Notification (6.23A, QFD3-6.1 or QFD3-6.2 if required)
- 8.9 Mercury Free – Non Destructive Testing only
- 6.21 VACCO Furnished Material/ Tooling/Parts (if applicable)
- 10.1–10.4 or 10.17 As Applicable
- 6.3 Packaging Requirements
- 6.26 Handling Precautions for Outside Processing/Test

d) OUTSIDE PROCESSING PLATING

NOTE: Plating to be conducted IAW _____, REV _____

- 8.2 Supplier Certificate of Conformance
- 6.18 GIDEP Announcements
- 6.23A Fraudulent Statement Notification (6.23A, QFD3-6.1 or QFD3-6.2 if required)
- 8.9 Mercury Free – Non Destructive Testing only
- 6.21 VACCO Furnished Material/ Tooling/Parts (if applicable)
- 6.3 Packaging Requirements
- 6.26 Handling Precautions for Outside Processing/Test

11.4 C.O.T.S. PARTS

- 8.3 Basic Certificate of Conformance
- 6.25 Counterfeit Work
- 6.1X Specification Effectivity (Optional – A, B, C, or D if required)
- 6.23A Fraudulent Statement Notification
- 6.3 Packaging Requirements
- 6.18 GIDEP Announcements
- 6.20 Manned Space Flight
- 8.9 Mercury Free – Non Destructive Testing only

11.5 RAW MATERIALS

- 8.1 Mill Test Reports
- 8.2 Supplier Certificate of Conformance
- 6.23A Fraudulent Statement Notification (6.23A, QFD3-6.1 or QFD3-6.2 if required)
- 6.1A Specification Effectivity
- 6.18 GIDEP Announcements
- 6.32 Procurement Source Prohibition
- 6.15 Item Lot/Heat Number Individuality
- 8.9 Mercury Free – Non Destructive Testing only

11.6 DOCK TO STOCK – DS05 – WELD KITS (Entered in WDS as DS05)

- 6.1A Specification Effectivity
- 6.15 Item Lot/Heat Number Individuality
- 6.18 GIDEP Announcements
- 6.24 Supplier Quality Control Systems
- 6.25 Counterfeit Work
- 6.26 Handling Precautions
- 6.3 Packaging Requirements
- 8.3 Basic Certification of Conformance
- 8.9 Mercury Free Certification

11.7 DOCK TO STOCK – C.O.T.S. PARTS (MS or NAS parts) (as identified in QF-SUP-002)

- 7.8 Dock to Stock Process for COTS parts
- 8.3 Basic Certificate of Conformance
- 6.25 Counterfeit Work
- 6.1A Specification Effectivity
- 6.23A Fraudulent Statement Notification
- 6.3 Packaging Requirements
- 6.18 GIDEP Announcements
- 6.20 Manned Space Flight (Manned Space Flight only)
- 8.9 Mercury Free – Non Destructive Testing only (Contract Specific)

11.8 DOCK TO STOCK – Gases (as identified in QF-SUP-002)

- 8.3 Basic Certificate of Conformance

11.9 DOCK TO STOCK – Distributors (as identified in QF-SUP-002)

- 7.8 Dock to Stock Processes for COTS Parts

11.10 NAME PLATES

- 6.22D Nameplate Proofs

11.11 CIRCUIT CARD ASSEMBLIES (CCAs)

- 8.13 Circuit Card Assembly Certification
- 10.12 Printed Circuit Boards
- 6.1A Specification Effectivity
- 6.25 Counterfeit Work
- 6.3 Packaging Requirements
- 10.11 Electrostatic Discharge Protection