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VACCO Industries
10350 Vacco Street, South El Monte, CA 91733
TEL 626.443.7121 FAX 626.442.6943

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Level 1 Material Handling for Suppliers

Prepared by: _____
T Tan, Supplier QE Date

Approved by: _____
J Gifford, Senior Supplier Quality Manager Date

Approved by: _____
A Vasquez, Quality Manager-Defense Date

Approved by: _____
L Kahre, Senior QA Manager Date

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Revision History

Rev	Date	Preparer	Control Number	Description of Change
-	05/11/2017	L Canevari	DCR0001493	New document
1.0	06/03/2019	L Canevari	DCR0001812	Section 3 ADDED: Supplier's responsibility to contact the Buyer to request a PO update. REMOVED: ...to review QFD-6.1C or QFD-6.1D to check for Specification Effectivity if stated in the PO. Section 6.1.5 REMOVED: QFD-6.23A or QFD-6.23B
B	12/21/2022	T Tan	DCR0002193	Updated format 3.2.1 – added “or process” 3.2.2 – remove “in order to” to “to” 3.3 – remove Supplier QE responsibility and put it to section 3.3.1 3.3.1 - new Supplier Quality responsibility 3.3.2 – new Supplier Quality responsibility in relation to VI-LVL1-1945 4.0 – Added definition for DI-MISC, EB, FED-STD, Level 1, MIL-STD, US, QFD 5.2.5 – Added clarification of Quality Flow Down sources 6.0 References – added document name for DI-MISC-81020, added new reference to VI-LVL1-1945. Update all references of MIL-STD-792 to MIL-STD-792F

1.0 PURPOSE

To document and control contractual and internal Level 1 material handling requirements flowed down to Suppliers and subtier Suppliers

2.0 SCOPE

This instruction is applicable to those internal clauses related to the Level 1 material handling requirements that are published on purchase requisitions, purchase orders and on the Internet for Supplier access

3.0 RESPONSIBILITIES

3.1 Document or Process Owner: Supplier Quality and Quality Assurance

3.2 Supplier:

3.2.1 To review the purchase requisition and determine if there is a requirement to obtain or process Level 1 material. When imposed by VACCO Purchase Order (PO), the Supplier shall adhere to the requirements of this document as referenced on the PO in addition to the applicable requirements of other VI-QFD-XXX documents. If there is a conflict between the PO and the drawing, the Supplier shall contact the Buyer responsible for the PO.

3.2.2 to obtain all measuring equipment and documents referenced herein to fully comply with the requirements of this document. VACCO Industries shall not be held responsible to provide the supplier with any equipment or specifications unless otherwise specified on VACCO's PO.

3.2.3 to conform to the requirements of VACCO's PO. If the Supplier is unable to attain the material required, it is the Supplier's responsibility to contact the Buyer to request a PO update.

3.3 VACCO Supplier Quality:

3.3.1 to perform periodic verifications of the Supplier's Level 1 material handling process to ensure that it meets the requirements herein per VI-PQD-001.

3.3.2 to update this procedure and ensure that the Supplier is able to provide and meet VACCO internal requirements for material identification and control plan for Level 1 hardware (VI-LVL1-1945)

4.0 DEFINITIONS

Term or Acronym	Definition
DI-MISC	Department of Defense Data Item Description document
EB	General Dynamic Electric Boat company
FED-STD	Federal Standard developed for Federal Agencies use
Level 1	US Military designation for systems and components for which the Navy requires a high degree of assurance that the chemical composition and mechanical properties of the installed materials meet the specified requirements.
MIL-STD	Military Standard document by Department of Defense
OQE	Objective Quality Evidence
PO	Purchase Order
QFD	Quality Flow Down
SHCS	Socket Head Cap Screws
US	United States

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5.0 PROCEDURE

5.1 When imposed by VACCO PO using QFD-9.4 (listed in VI-QFD-001), the Supplier shall adhere to the requirements of this document as referenced on the PO.

5.2 General Requirements

5.2.1 The Supplier shall establish a Level 1 procedure or multiple Level 1 procedures that will ensure all Objective Quality Evidence (OQE) requirements detailed in this document are met. These procedures may be incorporated into already existing procedures and do not need to be standalone documents. Procedures shall include but are not limited to the following:

- Material handling and segregation
- Positive marking per MIL-STD-792F
- Traceability maintenance
- Receipt inspection sampling plan
- Verification of documentation (OQE)
- Adequate record retention
- On-going supplier monitoring and maintenance
- Internal audits

5.2.2 Designated Level 1 Suppliers shall perform internal audits on each procedure and work process and maintain a training record of each employee that has been trained to meet the Supplier's Level 1 procedure requirements. Internal audits shall include an audit schedule, personnel assigned, frequency of the audit, and all documented evidence that the audit occurred.

5.2.3 Level 1 material purchased for a Level 1 PO shall be obtained directly from the mill or a distributor with a mercury free statement if specified by the PO. The Supplier shall not upgrade non-level material to Level 1 material under any circumstance. However, the Supplier may review the material certifications to ensure that the material traceability meets Level 1 requirements and reclassify the material as Level 1.

5.2.3.1 Overcheck processes and over stamping cannot be used as a means for determining material properties in place of full traceability.

5.2.3.2 The Supplier cannot request a recertification for a different specification revision from another source other than the mill.

5.2.3.3 The unique traceability identification number shall not be changed unless the material properties are altered by either cold working or heat treating. See Traceability Section for traceability requirements.

5.2.4 The procedure that directs the Supplier on how to monitor its subtiers shall include a register of suppliers and each individual status of those suppliers and methods that may be used to monitor those suppliers. These methods shall be documented and retained for a minimum of 7 years. Methods may include but are not limited to the following:

- Periodic reviews of Quality and Delivery performance
- Desktop audits or checklists
- On-site visitations
- Teleconferences

5.2.5 If the PO flows down QFD 3-6.1 (VI-QFD-003 Section 6.1) or QFD 3-6.2 (VI-QFD-003 Section 6.2), the Supplier is required to meet the following:

- Comply to the verbiage cited in the applicable flow down
- Verify that all certifications provided to VACCO have a positive statement meeting the False and Fraudulent requirements in the applicable flow down

5.3 Material Handling

5.3.1 Level 1 material handling procedures shall provide adequate methods for controlling Level 1 material from receipt through fabrication and shipment. Only individuals who are trained by the Supplier shall be allowed to handle Level 1 material. Any Level 1 material that is awaiting or in process for receipt inspection or is in storage shall be physically segregated from non-level material to prevent comingling. The Supplier may segregate their Level 1 material from non-level material using one or more of the following methods:

- Cages
- Racks
- Bins
- Shelves
- Boxes
- Roped-off areas
- Locked/bonded rooms

5.3.2 Level 1 designated cages, racks, shelves, etc. shall be clearly identifiable for Level 1 raw material and/or parts only. The Supplier shall limit the number of employees who are allowed access to Level 1 material to ensure proper material handling at all times.

5.4 Marking Requirements

5.4.1 Level 1 material and/or parts shall be marked in accordance with MIL-STD-792F. Identification marking shall consist of letters, numbers, and/or symbols intentionally added to metal surfaces. Any marking performed on Level 1 material and/or parts shall be permanent, not easily removable, and needs to remain integral with the material or finished part.

5.4.2 Raw material shall be marked in accordance with MIL-STD-792F Types I, II, III, V, VII, or VIII. Finished parts shall be marked in accordance with MIL-STD-792F Types II (preferred), VII, or IX. If the finished parts are too small to positively mark the parts, the Supplier may Bag & Tag the parts with the required traceability information.

5.4.3 Fasteners may have a different marking requirement which will be specified on VACCO's PO and/or Drawing. It is the Supplier's responsibility to review these specifications and conform to them.

5.4.4 Any positive marking that may be removed during a manufacturing, fabrication, or maintenance process shall be recorded prior to removal and immediately restored upon completion of the process. The use of Bag & Tag is required if the parts are too small to physically restore the marking.

5.5 Traceability

- 5.5.1 Level 1 material and part traceability shall be maintained from the mill up to shipment and installation. The Supplier shall establish a means of maintaining traceability detailed in the appropriate Level 1 procedure(s). All Level 1 material shall be correctly identified and marked using a unique traceability method that correlates the material to the PO or job/work order.
- 5.5.2 During a process or series of processes, traceability may be maintained by methods such as bagging or tagging using a wired or lanyard tag. The Supplier may use segregated boxes during these processes to ensure that Level 1 parts are not comingled with non-level parts.
- 5.5.3 When the mechanical properties are altered through heat treating or cold working, a new unique traceability number shall be issued to the material which corresponds to its original traceability number. This new traceability number shall be provided from the Supplier to the outside processor or vice versa. The original certification data report shall be over stamped and/or annotated to contain the following information:

Image 1

Traceability No. _____ is fabricated from raw material. <small>(marking on finished item)</small>
Heat No. _____ and Heat-Treat No. _____ <small>when applicable</small>
_____ <small>(Name and Signature of Auth. Co. Rep.)</small>
Date _____

- 5.5.4 The certification report from the outside processor shall certify with the new traceability number.
- 5.5.5 When material is worked resulting in changes to its mechanical properties, the mechanical properties shall be re-determined by a third-party verification test. Tensile testing shall be performed per specification DI-MISC-81020 (VI-QFD-001, Clause 8.1c) and per PO requirements.
- 5.5.6 Supplier documentation shall accurately certify compliance with the specification requirements for chemical composition and mechanical properties. Job/work orders or similar work authorizing documentation involving Level 1 materials or parts shall be stamped or labeled "Level 1" in legible letters and of sufficient font size to be easily distinguishable. All documentation for each Level 1 job shall be identified with a unique traceability recorded on each page and the material or part(s) shall be marked with the same unique traceability to correlate the two.
- 5.5.7 Any Level 1 material or parts that have lost traceability at any point during its manufacturing shall be segregated and dispositioned as directed in Nonconforming Material section.

5.6 Nonconforming Material

When Level 1 material is found to be incorrectly marked, tagged, does not comply with the Level 1 requirements in this document, or the applicable specifications or drawings, the material shall be placed in a *hold* or *reject* status and clearly identified until the material is properly dispositioned. Nonconforming Level 1 material shall be clearly and positively marked as "Scrap" or "Nonconforming" and placed in a bonded area that has limited access to employees.

5.7 Verification of Objective Quality Evidence (OQE)

- 5.7.1 Objective Quality Evidence (OQE) refers to quantitative and qualitative data of all mechanical, chemical, and performance tests conducted (as required by the specification, drawing, and/or PO) to prove that the purchased material conforms to specified requirements.
- 5.7.2 Material certification data sheets shall be recorded on the testing subtier Supplier's letterhead and shall have a clearly printed name, title, and signature of the authorized testing subtier Supplier's representative.
- 5.7.3 In instances of foreign certification, conversion of foreign language units of measure into U.S. units of measure shall be annotated on the provided foreign certifications (if space permits) or placed on an addendum in the same format. Any conversions shall be identified as to origin with clearly printed name, title, and signature of the authorized representative to the Supplier making the conversion. The Supplier shall refer to the applicable DFAR clauses in the Terms and Conditions of the PO.
- 5.7.4 All records that are related to a Level 1 PO shall be retained for a minimum of 7 years or as required by VACCO's PO.

5.8 Receipt Inspection Sampling Plan for Raw Material

Receipt inspection sampling shall be performed in accordance with VI-INSP-102-APPENDIX-1 against each subtier Supplier of Level 1 material. This document is located on the VACCO website.

5.9 Final Inspection Requirements

The Supplier shall perform 100% visual inspection and 100% workmanship inspection for all finished Level 1 parts prior to shipment. Inspection shall be performed in accordance with material specifications or part specific specifications.

- 5.9.1 System 21 – The Supplier shall reference EB 2678 if the finished part will have internal threads. Tapped holes and fabricated internal threads shall be inspected in accordance with System 21 requirements per FED-STD-H28/20B. Inspection of these parts shall include the use of appropriate size threaded fixed limit Go/No Go gages to verify the final tapped hole thread form. Go/No Go cylindrical gages shall be used to ensure the threaded hole meets the minor diameter requirements. The Supplier may use an inside micrometer or inter micrometer to measure the thread minor diameter.
- 5.9.2 System 22 – Socket Head Cap Screws (SHCS) shall be inspected in accordance with VACCO's drawing and MIL-DTL-1222 or MIL-S-1222 as applicable per each PO.

6.0 REFERENCES

- DI-MISC-81020 – Certification Data for Non-Nuclear Level 1 Material
- EB 2678 – General Dynamic Electric Boat Quality Control Requirements for Procured Materials
- FED-STD-H28/20B – Federal Standard Screw-Thread Standards for Federal Services
- MIL-DTL-1222 – General Specification for Studs, Bolts, Screws and Nuts for Applications Where a High Degree of Reliability is Required
- MIL-STD-792F – Department of Defense Manufacturing Process Standard Identification Marking Requirements for Special Purpose Components
- MIL-S-1222 – Studs, Bolts, Hex Cap Screws, Socket Head Cap Screws and Nuts
- TRNG-LEVEL1 –VACCO Level 1 Training for Suppliers

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- VI-LVL1-1945 – Material Identification and Control Plan for Level 1 Hardware
 - VI-QFD-001 – VACCO Quality Flow-Down Instructions
 - VI-QFD-003 – Supplier False and Fraudulent Requirements
 - VI-INSP-102-APPENDIX-1 – Supplier Instructions for Material Over-Check Program
 - VI-PQD-001 Control of Supplier