

Absolute Manufacturing

Senior Operations, LLC

Supplier Quality Requirements



1. Scope:

The requirements of this document apply to production suppliers of Absolute Manufacturing a division of Senior Operations, LLC. Production suppliers are those who provide materials, services and/or parts used in end item products sold by Absolute Manufacturing.

2. Application:

The requirements are separated into individual codes (SQR's). The applicability of each code is specified on the purchase order. Please direct questions regarding SQR codes to the Absolute Manufacturing buyer.

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4. Definitions:

Absolute Manufacturing	Absolute Manufacturing, a Division of Senior Operations LLC 20350 71 st Ave NE Unit C Arlington, WA 98223
ARP9013	SAE International Statistical Product Acceptance Requirements
AS/EN9100	SAE International Requirements for Aerospace Quality Management Systems
AS9102	SAE International Aerospace First Article Inspection Requirement
AS9120	Quality Management Systems – Requirements For Aviation, Space and Defense Distributors
DFARS	Defense Federal Acquisition Regulation Supplement – a set of United States procurement regulations governed by the Department of Defense
EAR	Export Administration Regulations – A set of United States government regulations that control the export and import of articles, technology, software and services on the Department of Commerce/Commerce Control List (CCL)
ISO9001	The International Organization for Standardization requirements for Quality Management Systems
ISO/TS16949	Quality Management Systems For Automotive Production and Service Part Organizations
ISO13485	Medical Devices – Quality Management Systems – Requirements For Regulatory Purposes
ITAR	International Traffic in Arms Regulations – a set of United States government regulations that control the export and import of defense related articles, technology, software and services on the United States Munitions List.
NADCAP	National Aerospace and Defense Contractors Accreditation Program. http://www.p-r-i.org/nadcap/
NAS412	The National Aerospace Standard's Foreign Object Damage/Foreign Object Debris (FOD) Prevention standard practice specification
Repair	Action taken on a nonconforming product which brings it to a Use-As-Is condition.
Rework	Action taken on a nonconforming product to eliminate the nonconforming condition and bring it into full conformance with design requirements.
SQR	Supplier Quality Requirement code – Unique requirement defined within this document and invoked via purchase order.
Sub-Tier	An organization at any level of the supply chain involved in providing materials, services and/or parts for an Absolute Manufacturing order. Normally, Sub-Tiers do not receive a direct purchase order from Absolute Manufacturing.
Supplier	Organization receiving a purchase order from Absolute Manufacturing. Sister companies with distinct 3 rd party registration are considered Sub-Tiers.
Use-As-Is	A disposition for nonconforming product indicating that it is acceptable for use without further action.

5. Supplier Quality Requirements:

5.1. SQR GEN General Requirements Clause

5.1.1. Right of Entry

Absolute Manufacturing, its customers and regulatory agencies reserve the right-of-entry to the supplier's as well as the supplier's sub-tier facilities in order to review relevant processes, subcontractors, contracted parts, procedures and records.

5.1.2. Quality Records

Suppliers shall maintain quality records, including traceability, throughout all stages of manufacturing. Written consent from Absolute Manufacturing is required prior to destruction of quality records associated with Absolute Manufacturing purchase orders.

Upon request, the supplier shall be capable of retrieving and delivering required records to Absolute Manufacturing within 48 hours from the time of request.

5.1.3. Flow down requirements for sub-tier suppliers

When subcontracting of a process is needed, the sub-tier source must maintain 3rd party certification (e.g. ISO 9001, AS9100, NADCAP, etc.). If not, the sub-tier must be customer directed or approved in writing by Absolute Manufacturing. All applicable purchase order requirements must be flowed down to sub-tiers including those requirements specified herein.

The supplier is required to obtain a non-disclosure agreement (NDA) with sub-tiers providing subcontracted processes or verify that an NDA between the sub-tier and Absolute Manufacturing is on file at Absolute Manufacturing. Inquiries regarding NDA status shall be directed to Absolute Manufacturing Purchasing.

5.1.4. Conflict Minerals Disclosure

The supplier shall support Absolute Manufacturing's compliance with sourcing obligations to report the sourcing of gold, columbite-tantalite, cassiterite, and wolframite and their "3T" derivatives, which are tantalum, tin, and tungsten ("Conflict Minerals") from certain countries in the African subcontinent. The Supplier shall have processes in place to make reasonable enquiries as to the country of origin of Conflict Minerals included in the goods sold to Absolute Manufacturing.

The supplier shall disclose goods containing Conflict Minerals to Absolute Manufacturing prior to acceptance of this order.

5.1.5. Traceability and Lot Control

Outside Processing / Machining: At a minimum, the supplier is required to maintain lot traceability of product and materials used for this purchase order. Traceability of materials provided by Absolute Manufacturing is required throughout all phases of manufacturing and processing. Absolute Manufacturing's lot identification is provided within the Purchase order as the Job Number. The supplier is required to maintain any "as received" part specific identification (e.g. FAI part, serialization, etc.) throughout all stages of production and shipping to Absolute Manufacturing.

Hardware Distribution / OEM: Each lot shall be traceable back to the manufacturer's lot number. Unless otherwise indicated on the purchase order, multiple lots may be provided. However, where multiple lots are provided, the supplier shall segregate and legibly mark them with the manufacturer's lot number.

Raw Material Distribution: At a minimum, the supplier is required to maintain lot traceability of product and materials shipped for this purchase order. Each lot shall be traceable back to the heat lot. Unless otherwise indicated on the purchase order, multiple lots may be provided. However, where multiple lots are provided, the supplier shall segregate and legibly mark them with the manufacturer's lot number.

5.1.6. Foreign Object Damage/Foreign Object Debris Control Program (FOD)

The supplier shall establish, document and maintain a FOD prevention program. All parts provided to Absolute Manufacturing shall be clean, free of residue & FOD. NAS412 may be used as a guide to establish and implement the FOD control program. The supplier shall flow down this requirement to sub-tiers.

5.1.7. Certification Requirements

All certifications shall be traceable to the product submitted. The supplier shall furnish with each delivery of product, all material and processing test reports and other related documents issued by the supplier or by the supplier's approved sub-tier source. These documents must demonstrate the chain of ownership beginning with the source of manufacture and ending with Absolute Manufacturing. Clear connections between the documents are required (e.g. lot identification, batch identification, etc.).

The supplier shall include with the shipment a signed statement indicating that the delivered product is in compliance with the applicable requirements of the purchase order and/or contract.

All certifications shall be legible and in the English language and as a minimum shall include:

- A- Name and address of supplier and/or sub-tier source(s)
- B- Part number and revision
- C- Absolute Manufacturing Purchase Order Number
- D- Quantity processed and/or delivered
- E- Lot and/or batch number
- F- Certifications issued by supplier's sub-tier sources shall include information and data required by (A), (B), (C) and (D)
- G- For distributors, the specifications of the material / parts provided (including revision, type, class and grades as applicable)
- H- For suppliers of processes, the specifications performed including the revisions thereof (including type, class and grades as applicable)

Suppliers are required to furnish certifications to Absolute Manufacturing that were issued by their Sub-tier source and shall reference the material/processing certifications on their shipping documents upon delivery.

Shipments of hardware shall include certifications provided by the original manufacturer of the hardware.

All corrections to supplied certifications must be clearly and neatly executed. Each correction shall be signed and dated by an authorized individual. Manual corrections shall preserve the legibility of the original information by drawing a single line through the information to be corrected.

5.1.8. Protection of Product Against Contamination and Damage

The supplier is responsible for the care and protection of product against contamination, degradation or damage. Where necessary, delicate features (e.g. threads, sealing surfaces) must be provided special protection during processing and transportation.

Upon receipt of product from Absolute Manufacturing, the supplier shall identify any incoming handling damage. Prior to processing the product, the identified damage must be brought to the attention of the Absolute Manufacturing buyer (ref SQR-15). Upon return to Absolute Manufacturing, the supplier will be held responsible for damages which were not identified by the supplier upon receipt. At the discretion of Absolute Manufacturing, this responsibility may include costs associated with rework and/or expedited replacement.

5.1.9. Notification of Escape

Supplier shall contact Absolute Manufacturing with written notification within one (1) business day when a nonconformance is determined to exist, or is suspected to exist on product already delivered. When the following is known, written notification shall include:

- A- Affected product numbers / name and process
- B- Description of the nonconformance (what it is and what it should be).
- C- Absolute purchase order/line item, manufacturer lot number, quantities, and dates product shipped.
- D- Outside Services nonconforming parts are to be tagged with a description of the nonconforming condition.

The Supplier shall not use dispositions of use-as-is or repair on nonconforming product.

5.1.10. Control of Monitoring and Measuring Devices

The supplier shall control monitoring and measuring devices used to provide evidence of conformity to design requirements. Supplier's control process shall include the identification of the measuring devices and their calibration status. Calibrations shall be traceable to national or international standards. The supplier's monitoring and measuring devices shall be controlled within a system compliant to ANSI/NCSL Z540 and ISO 17025.

5.1.11. Change Notification

The supplier is required to notify Absolute Manufacturing of changes in product and/or process, changes of suppliers, and changes of manufacturing facility location. When indicated on the PO or contract, Absolute Manufacturing approval must be obtained prior to implementation.

5.1.12. Disposition of Nonconforming Product

The supplier shall not perform rework/repair operations without prior written approval from Absolute Manufacturing Quality. Failure to comply with this requirement will result in the supplier bearing full responsibility and the associated costs for resulting nonconformities.

To request approval for rework, complete the supplier portion of a Supplier Nonconformance Notification (F-740-019) form and e-mail it to purchasing@absolutemfg.com. Blank forms are available for download at www.absolutemfg.com and via the FTP portal for suppliers with Absolute FTP accounts. A response including the disposition and instructions will be provided by Absolute Manufacturing.

Requests for repair and use-as-is dispositions may not be considered due to restrictions imposed by the design authority.

The supplier shall carry out the actions described in the disposition and instructions. Product affected by the Supplier Nonconformance Notification shall ship with a copy of the dispositioned form and be segregated during shipment.

NOTE: Approval to ship nonconforming product does not absolve the supplier of responsibility for the nonconforming condition.

5.2. **SQR-1 Quality Management System AS9100**

The supplier shall maintain accredited 3rd party certification to the requirements of AS9100 or equivalent aerospace standard (e.g. EN9100, AS9120, etc.). This system is subject to review by Absolute Manufacturing. The supplier shall provide written notification to Absolute Manufacturing upon loss or suspension of certification.

5.3. **SQR-2 Quality Management System ISO 9001**

The supplier shall maintain accredited 3rd party certification to the requirements of ISO 9001 or equivalent/superior quality system standard (e.g. ISO/TS16949, ISO13485). This system is subject to review by Absolute Manufacturing. The supplier shall provide written notification to Absolute Manufacturing upon loss or suspension of certification.

5.4. **SQR-3 Quality Management System (Without 3rd Party Registration)**

As a minimum, the supplier shall establish business processes to manage the following subjects. Guidelines regarding these processes are found in AS/EN9100.

1. Contract/Purchase Order Review
2. Identification and Traceability
3. Control of Customer Property
4. Control of Nonconforming Material
5. Process Control
6. Preservation of Product
7. Measurement & Monitoring of Product
8. Control of Quality Records

5.5. **SQR-4 Obsolete**

- 5.6. **SQR-5** **Pre-production Part Approval**
Prior to production start-up, the supplier shall produce a limited quantity (as specified on the purchase order) of pieces to confirm consistency of quality.
- 5.7. **SQR-6** **Process Locked**
Upon submittal of the first article, the supplier shall make no changes to the manufacturing process without written approval from Absolute Manufacturing Quality. Changes requiring approval include all those which would result in a new requirement for full or partial FAI per AS9102. To request approval for a planned change, the supplier shall contact the Absolute Manufacturing buyer.
- 5.8. **SQR-7** **Obsolete**
- 5.9. **SQR-8** **Subcontracting**
When contracted to perform work against customer design requirements, the supplier shall obtain written Absolute Manufacturing approval prior to subcontracting all or part of the order. Written approval is also required when making changes to existing sub-tier sources.
- 5.10. **SQR-9** **Obsolete**
- 5.11. **SQR-10** **Obsolete**
- 5.12. **SQR-10A** **Raw Material Requirements**
All shipments of raw materials shall include legible copies of the material certification as furnished by the raw material supplier or an independent test laboratory. Material certifications must agree in all aspects with the raw material requirements of their applicable specifications. Unless otherwise specified, all certifications shall state as a minimum, the latest revision of the specification being certified to. Traceability provided shall include raw material, lot and batch or melt number on the certification test report or/as required by controlling specification including origin of manufacture.
- 5.13. **SQR-11** **Quality Management System AC7004 (NADCAP)**
The supplier shall maintain NADCAP certification to the requirements of AC7004. This system is subject to review by Absolute Manufacturing. The supplier shall provide written notification to Absolute Manufacturing upon loss or suspension of certification.
- 5.14. **SQR-12** **Calibration and Testing Laboratories**
The supplier shall maintain accredited 3rd party certification to ANSI ISO/IEC 17025 or ANSI/NCSL Z540. This system is subject to review by Absolute Manufacturing. The supplier shall provide written notification to Absolute Manufacturing upon loss or suspension of certification.

5.15. **SQR-13** **Obsolete**

5.16. **SQR-14** **Obsolete**

5.17. **SQR-15** **Obsolete – SQR-15 has been moved to SQR-GEN**

5.18. **SQR-16** **Shelf Life**

The manufacturing and applicable expiration dates must be noted on each individual container and / or certification.

5.19. **SQR-17** **Obsolete – SQR-17 has been moved to SQR-GEN**

5.20. **SQR-18** **Obsolete**

5.21. **SQR-19** **NADCAP**

When performing the following processes, the supplier must be NADCAP certified. The certification scope must include the process to be performed. The supplier shall provide written notification to Absolute Manufacturing upon loss or suspension of certification.

- Heat Treating (AC 7102)
- Welding (AC 7110)
- Chemical Processing (AC 7108)
- Non-Destructive Testing (AC 7114)
- Surface Enhancement (AC 7117)
- Composites (AC 7118)
- Material Testing (AC 7101)

5.22. **SQR-20** **Obsolete**

5.23. **SQR-21** **Revision Control**

Unless otherwise specified, latest revision applies on all engineering and specifications used in product manufacture. Documents may be provided to you by Absolute Manufacturing Purchasing.

5.24. **SQR-22** **ITAR/EAR Requirement**

This PO (and any drawings and/or attachments accompanying it) may contain technical data, including information controlled by United States government regulations. The supplier is responsible for the protection of any controlled technical data or defense article provided to them by Absolute Manufacturing to assist in the manufacture of a defense article or provision of a defense service. The release of this data by the supplier to a Foreign Person employee or its transfer to another Foreign Person for the purpose of Off-Shore Procurement is defined as an export (ITAR 22 CFR Parts 120.17 and 124.13 and EAR 15 CFR Part 734.2(b)(2)(ii) and Supplements 1 and 2 or Part 774) and is subject to the licensing requirements of the ITAR and EAR as applicable. Diversion or export contrary to US law is prohibited.

5.25. **SQR-23** **Sampling Inspection**

Written, part specific, approval from Absolute Manufacturing Quality is required prior to implementing sampling methods. The supplier shall submit proposed sampling plans through the Absolute Manufacturing Buyer. Guidance regarding the development of sampling methods can be found within ARP9013.

Prior to receiving approval, the supplier shall perform 100% inspection of all design characteristics unless otherwise indicated in the design or invoked specifications.

5.26. **SQR-24** **Absolute Manufacturing Supplied Drawings**

All engineering drawings provided by Absolute Manufacturing and derivatives thereof are the property of Absolute Manufacturing and must be controlled in compliance with NDA, ITAR, EAR and record retention policies. Disposal of such documents shall render all data unrecoverable.

5.27. **SQR-25** **Obsolete**

5.28. **SQR-26** **Obsolete**

5.29. **SQR-27** **Counterfeit Parts**

Supplier shall put into place a documented program to avoid, detect, mitigate and disposition counterfeit parts and materials.

Suppliers should utilize and reference AS-5553 and AS-6174 for guidance. Suppliers shall also flow down counterfeit parts program requirements to their sub-tiers.

5.30. **SQR-28** **Foreign Material Requirements**

When DFARS is specified on the purchase order, the supplier is required to comply with the applicable clauses. This includes but is not limited to 252.225-7008, 252.225-7009, 252.225-7002, etc (or superseding clauses). Suppliers are required to flow down these requirements to sub-tiers.

5.31. **SQR-29** **First Article Requirements**

The supplier shall provide First Article Inspection in accordance with SAE AS9102 on all supplied product. A First Article is required for first runs, process/programming changes, machine changes, machine moves, and as required by AS9102 and the purchase order. AS9102 first article inspection forms are available from Absolute Manufacturing upon request. Parts used for First Article Inspections shall be identified within the shipment to Absolute Manufacturing.

5.32. **SQR-30 Prohibited Suppliers**

Absolute Manufacturing has been advised that the following organizations have historically provided nonconforming material. Therefore, any raw material or product originating or flowing through these organizations is prohibited:

- Western Titanium
- Mach 2 Metals
- A & P Alloys
- Sapa Extrusions (headquartered in Portland, OR)

5.33. **SQR-31 ROHS Compliance**

If ROHS2 compliance is specified within the purchase order or design data, the supplier is required to provide a statement of conformance as part-of or in addition to the certificate of conformance.

5.34. **SQR-32 Boeing D1-4426 Approval**

For processes controlled by Boeing D1-4426, the supplier shall maintain D1-4426 approval through the Boeing Company. The supplier shall provide written notification to Absolute Manufacturing upon loss or suspension of said approval.

6. Revision History

REV.	DATE	DESCRIPTION OF CHANGE	AUTHORIZED BY
NC - L		A full revision history is available upon request.	
M	9/16/2016	DCR 0536 Updates to section 5.1.7 to clarify CoC requirements. Section 5.1.8 completely re-written. Minor editorial change to SQR-22.	Brian Lewis Quality Manager
N	6/15/2017	DCR 0593 SQR-15 has been moved to section 5.1.12 (within SQR-GEN) SQR-17 has been moved to section 5.1.11 (within SQR-GEN) SQR-GEN 5.1.11 revised content to align with AS9100 reqs Requirement clarification to section 5.1.6 Added SQR-32	Jeff Eckley Quality Manager