

TYPE: QUALITY ASSURANCE	PAGE NO. 1 OF 4
	SPECIFICATION NO. Q-023
TITLE: FLOW DOWN OF CUSTOMER QUALITY SYSTEM REQUIREMENTS	DATE ISSUED: 11/17/2003
	DATE REVISED: 08/18/2011

1.0 PURPOSE:

This procedure provides a method for flowing RTI International Metals, Inc. (RTI) and/or customer requirements to suppliers.

2.0 APPLICATION:

Purchase orders/Conversion releases issued to all RTI suppliers shall contain Code 01, where applicable. Class V suppliers are exempt from this requirement. These may contain additional codes listing other requirements that apply.

3.0 RESPONSIBILITY:

- * 3.1 The Quality system requirements for the supplier will be identified in Code 01 for that supplier on the Q-023 Matrix.
- 3.2 Quality Assurance is responsible for the flow down of RTI and/or customer requirements defined by this procedure. At the time of issuance of the purchase order/conversion release the applicable codes and descriptions shall be added.
- 3.3 By accepting the purchase order, the supplier/contractor shall also be indicating that they accept all identified flow downs.
- 3.4 The supplier is responsible for meeting the Quality Management System requirements identified by Code 01 and all other requirements of Code 1. The supplier shall also be responsible for meeting any additional requirements identified by code on the purchase order.

4.0 FLOWDOWN:

4.1 Characteristic Flow down

Where a critical characteristic is to be flowed down to a Subcontractor, the characteristic shall be documented on the Conversion Release/Purchase Order. A complete description of the characteristic and what is expected from the subcontractor shall be detailed.

4.2 System Flow downs

In addition to "Code 01", RTI shall also flow down Quality System Requirements to the extent necessary to ensure that characteristics not verifiable upon receipt are adequately controlled by the subcontractor. Again this shall be done via the Conversion Release/Purchase Order.

4.3 Responsibility


Purchasing, Conversion, and Quality Assurance will be responsible for the administration.

5.0 CODES:

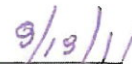
The "Supplier Requirements Matrix" details codes, which may be flowed down.

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Approved by:



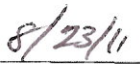
 J. W. Bennett, Director
 Quality Assurance



 Date



 S. R. Giangiordano, Executive Vice President
 Technology & Innovation



 Date



 Jim McCarley, Executive Vice President Operations



 Date

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TITLE: FLOW DOWN OF CUSTOMER QUALITY SYSTEM REQUIREMENTS	DATE ISSUED: 11/17/2003
	DATE REVISED: 08/18/2011

CHANGE HISTORY:

RMI documented history

Revision dated 09/18/2000, originated by R. E. Ivory.

Minor changes in wording in Sect. 1 & 2

Section 3.0 new

Section 5.0 new

Format of attachment changed to spreadsheet matrix.

Matrix additions & changes:

Code 1 – Removed RR DWC 105 & MIL I 45208A, added AS-9001

Code 2 – Replaced MIL-STD 45662A with ISO-10012

Code 3 – Added date of revision to Quality Manual - 9/1999

Code 6 – Changed Quality Control to Quality Assurance in “Note”

Code 14 – Added “C” – All records must be maintained for ____ years.

Code 18 – Added “C” – Where SPC is required, copies of control charts, the control plan, and supporting documentation shall be available upon request.

Code 20 – Replaced MIL-STD 45662 with ISO-10012

Code 33 – Removed MIL-STD 45662

Code 40 – New addition: Where acceptance sampling is performed and the customer prior approval of the sampling plan, the plan shall be submitted to RMI for customer approval

Revision dated 06/19/2002, originated by R. E. Ivory.

Code 1 – Removed reference to Boeing D1-9000 & GE S-1000, upgraded ISO to 9001, corrected AS 9100.

Code 6 – Added: RMI disposition shall be obtained.

New additions:

Code 41 – Personnel Qualification

Code 42 – Changes

Code 43 – Right of Access

Code 44 – Audit

Revision dated 10/21/2003, originated by B. Newman.

Updated to include conversion release and Subcontractor

RTI Documented History

This is a newly issued RTI specification dated 11/17/2003, originated by B. Newman.

This document was originally written for RMI and its history is carried over for continuity. The original RMI Q-023 will become obsolete upon issue of the RTI document.

“RMI” is replaced by “RTI” throughout the document.

Para. 4.0 Where conversion release is mentioned, purchase order is added

Removed “Note” in Sect. 4

Added #45 “Flowdown” to Matrix

Revision dated 7/12/2004, originated by B. Newman.

Additions & updates to Supplier Requirements Matrix

Code 01 – Removed references to P&W, Sikorsky and Snecma

Code 02 & 20 – Added ISO/IEC 17025

Code 05 – Simplified statement to read in accordance with latest rev. of AS 9102

Code 08 – Updated referenced documentation & added required Nadcap certification

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CHANGE HISTORY

Revision dated 7/12/04 continued
 Code 14-C – Rewritten... to meet RTI approval
 Code 19 – Rewritten... Vendor lab must be Nadcap approved
 Code 27 – Corporate (RTI) replaces RMI in subject line
 Code 41 - Rewritten for detail
 Code 46 – New: Domestically Melted Material
 Code 47 – New: GE Lab Approval
 Code 48 – Foreign Object Debris/Damage (FOD) Prevention

Revision dated 2/6/2008, originated by J. W. Bennett.
 Sections 1, 2, 3 &5 have been rewritten to reflect corporate level procedures to be implemented
 Supplier Requirements Matrix replaces Attachment A, including additional changes & deletions.

Revision dated 6/24/2008, originated by J. W. Bennett.
 Change made to Supplier Matrix
 Code 1 addition: Supplier must meet all applicable requirements of RTI Spec Q-107.4SQR
 Code 1 deletion: Removed ISO/AS references

Revision dated 11/18/2008, originated by J. Kocher.
 3.1 Addition of document’s availability for viewing on Public portion of RTI International Metals web site.

Revision dated 3/18/2011, originated by J. W. Bennett.
 Change made to Supplier Matrix - Updated RTI Location information

Revision dated 8/18/2011, originated by J. W. Bennett.
 Deleted section 3.1 & renumbered subsequent sections

RTI INTERNATIONAL METALS, INC. - SUPPLIER REQUIREMENTS MATRIX

Specification No. Q-023

CODE	SUBJECT	REQUIREMENT
*01	Quality System Requirements	1) The supplier must meet all applicable requirements of RTI Specification Q-107.4SQR. 2) The supplier is responsible for meeting all requirements of specifications, drawings, and other purchase order instructions relating to the following: - Requirements for approval of product or process - Personnel qualifications - Requirements for inspection, testing and certification 3) Supplier procedure shall include what production records, test records and test samples are kept, and where the records and test samples are stored for final retention. Supplier procedure shall include the minimum time each record and test sample are kept. Procedures for record retention must be approved by RTI. 4) The supplier shall notify RTI of any change in product and/or process definition. If fixed practices are in place approval of any product and/or process changes must be granted in writing by RTI prior to making the change. 5) All requirements of Q-023 and the purchase order must be flowed down to any sub-tier supplier. 6) If, in the event that during the P.O. review the Sub-tier determines that the requirements of the P.O. or specification cannot be met, the Sub-tier must: (1) notify RTI and, (2) prior to processing obtain revised P.O. and/or instructions, in writing, stating services to be performed that are within capabilities of the Sub-tier. 7) The supplier shall notify RTI of any nonconforming material. 8) For purchased products RTI must issue in writing approval to ship any nonconforming material. 9) The supplier shall allow right of access by RTI, its customers, and all appropriate regulatory or governmental authorities shall have the right to enter supplier's facility at reasonable times to inspect the facility, goods, materials, applicable records, and any property of Purchaser covered by this order.
02	Gage & Instrument Calibration	A. Gage and instrument calibration procedures and system must conform to ISO-10012 & ISO/IEC 17025. B. The Vendor shall have a calibration procedure system that meets ISO-10012 specification for all process control equipment and recording instruments.
03	Raw Material Certification	Certifications shall state "This material was produced by the process approved by RTI.
04	100% Dimensional Inspection	100% dimensional inspection required unless your sampling plan has been approved, in writing, by RTI Quality Assurance. Copies of the inspection reports shall be submitted with each shipment.
05	First Article Inspection	First Article Inspection shall be performed in accordance with the latest revision of AS 9102.
06	Nonconformances	If at any time the Sub-tier detects a process violation, purchase order noncompliance, raw material nonconformance or part nonconformance, RTI shall be informed as soon as practicable. Nonconforming material or parts shall be segregated and tagged as nonconforming. Tags shall indicate the nature of the nonconformance. Root cause & corrective action shall be determined and submitted within 10 working days of detection of the nonconformance unless otherwise agreed upon by RTI Quality Assurance. NOTE: Critical nonconformance must be addressed within 48 hours when so directed by RTI Quality Assurance. RTI disposition shall be obtained prior to release.
07	Software Quality Assurance	Subcontractor's Software Quality Assurance System shall have approval of the RTI Quality Assurance
08	Heat Treatment/Instrumentation	Titanium subcontractor must comply with and certify to the current revision of AMS H-81200 and AMS 2750. The heat treatment suppliers must be NADCAP certified.
09	Customer Source Inspection	RTI inspection/witness is required on this purchase order. Contact RTI five (5) working days prior to performing services as required by the purchase order to arrange for source inspection/witness of operations or as required by P.O. or conversion release.
10	RTI Customer Source Insp.	RTI's customer source inspection/witness is required on this P.O. Contact five (5) working days prior to performing services as required by this P.O. to arrange for source inspection/witness of operations or as required by P.O. or conversion release.
11	Obsolete	
12	Raw Material Inspection	100% inspection required unless your inspection sampling plan has been approved by RTI Quality Assurance. Copies of the inspection reports shall be submitted with each shipment.
13	Approving & Implementing Specs. & Operating Procedures	A. Supplier procedure for approving and implementing specifications and operating procedures shall include how all changes or additions are documented and controlled. B. Supplier procedure shall include how old specifications and operating procedures are removed from service and how new ones are put in service. C. Supplier procedure shall include how RTI is notified of all significant changes in the processing of the material.
14	Obsolete	

RTI INTERNATIONAL METALS, INC. - SUPPLIER REQUIREMENTS MATRIX

Specification No. Q-023

CODE	SUBJECT	REQUIREMENT
15	Approving & Disqualifying Suppliers	A. The Vendor shall maintain a list of approved suppliers B. The Vendor shall have a procedure for approving all suppliers C. The Vendor shall have a procedure for disqualifying and requalifying suppliers
16	Procedure for Certification of Raw Material	A. Supplier procedure shall include how production and test records are reviewed prior to the material being shipped. B. Supplier procedure shall include how the certification is reviewed to insure all the required information is included. C. Supplier procedure shall include who is authorized to approve the material for shipment and to sign the certification.
17	First Time Raw Material Inspection	A. The First Time Raw Material Inspection Report shall contain all applicable characteristics required by the P.O. and/or the purchase specification. The report shall be dated and signed by the person performing the inspection and testing, and shall be verified by another person. The first time raw material shall be tagged, "First Time Raw Material". B. The first Raw Material Report shall be approved by a RTI representative prior to the vendor becoming an approved supplier of the raw material. A copy of the First Time Raw Material Report shall be forwarded to RTI Quality Assurance when the finished material is shipped.
18	Statistical Process Control	A. The Vendor shall have a statistical quality control procedure approved by RTI B. The object of the statistical process control procedure is to continually reduce variation in the process. A CPK of 1.33 is considered the minimum acceptable level for any key characteristic of the material. C. Where SPC is required, copies of control charts, the control plan, and supporting documentation shall be available upon request.
19	Test Laboratory Control	The Vendor shall have a test laboratory or use a test laboratory that is NADCAP approved.
20	Calibration Procedure	The Vendor shall have a calibration procedure and system that meets ISO-10012 & ISO/IEC 17025 specifications for all process control equipment and recording instruments.
21	Corrective Actions	The Vendor shall have a Corrective Action procedure and system which shall be to identify and correct out of control situations and to improve process capability.
22	In-Process Audits	A. The Vendor shall monitor the effectiveness of their process by conducting periodic audits. B. The audit procedure and schedule shall be approved by executive management to assure independence and to establish the effectiveness of the system.
23	Buyer Evaluation	RTI's customer has the right of access to Sub-tier facilities when accompanied by RTI personnel.
24	Source Verification by Customer	Where specified in the contract, RTI's customer or his representative shall be afforded the right to verify at source or upon receipt that purchased product conforms to specified requirements. Verification by the customer shall not absolve the Supplier of the responsibility to provide acceptable product nor shall it preclude subsequent rejection.
25	Customer Verification Limitation	When RTI's customer or his representative elects to carry out verification at the sub-contractor's plant, such verification shall not be used by the Supplier as evidence of effective control of quality by the sub-contractor.
26	Quality Plan	A quality plan shall be prepared and submitted for RTI approval. Once developed, any deviation from the plan must be reported immediately to RTI.
27	RTI Observation	A. RTI observation required - processing shall not take place unless observed by a qualified RTI employee. B. RTI source inspection required.
28	Lab - Rolls Royce Approval	Laboratory shall be approved by Rolls Royce before laboratory work is performed.
29	Lab - Pratt & Whitney Approval	Laboratory shall be approved by Pratt & Whitney before laboratory work is performed.
30	ASTM	All testing shall be in accordance with applicable ASTM specification
31	Tensile Test	Tensile testing must be conducted at a strain rate of .065 in./in. minimum +/- .002 in./in. through yield with target rate being .003.
32	Calibration Procedures	Written calibration procedures must be sent to RTI for all equipment or gages that are calibrated under this order. Any revision or change in procedure must be approved by RTI Quality Assurance.
33	As Found - As Left	All calibration shall be conducted in accordance with the latest revision of ISO-10012 & ISO/IEC 17025, including "As Found" and "As Left" conditions.

RTI INTERNATIONAL METALS, INC. - SUPPLIER REQUIREMENTS MATRIX

Specification No. Q-023

CODE	SUBJECT	REQUIREMENT
34	Method of Calibration - ASTM	Method of calibration shall be in accordance with the latest revision of all applicable ASTM specifications including but not limited to, the following: _____ _____
35	Calibration Traceability	All verification devices and/or standards utilized shall be traceable to N.I.S.T. and a copy of the certification shall be provided to RTI with calibration documentation.
36	Standards Change	Changes or revisions of industry standards shall be the responsibility of the company performing the calibration.
37	Subcontracting	No work shall be subcontracted without the prior written approval of RTI.
38	Metal Assessment	Must certify that material supplied is free from radioactive contamination. Radioactivity is defined as 0.19 uSv (microsieverts) and above. Background levels in the United States range from 0.05 to 0.15 uSv.
39	Quality Manual	Quality Manual must be in English
40	Acceptance Sampling	Where acceptance sampling is performed and the customer prior approval of the sampling plan, the plan shall be submitted to RTI for customer approval.
41	Personnel Qualification	Personnel shall be qualified to Special Processes in accordance with appropriate specifications and industry standards. Evidence of qualification shall be provided.
42	Changes	RTI shall be notified in advance of changes in product/process definition and obtain written approval.
43	Right of Access	RTI, RTI's customers and Regulatory authorities shall have the right of access to all facilities involved in the order and to all applicable records.
44	Audit	Annual audit required.
45	Flowdown	Supplier must flow down to sub-tier suppliers the applicable requirements in the purchasing documents, including key characteristics where required.
46	Domestically Melted Material	Material must be melted domestically, and certification must state that material has been melted in the United States.
47	GE Lab Approval	The vendor shall have a test laboratory or use a test laboratory that is GE S400 approved.
48	Foreign Object Debris/Damage (FOD) Prevention	The vendor shall maintain a FOD prevention program that, at a minimum, contain the following elements: Design and/or Manufacturing Process Review, Performance Measurement, Training, Material Handling and Parts Protection, Housekeeping, Tool Accountability, Hardware Accountability, Lost Items, Physical Entry Control into FOD Critical Areas, and FOD Focal Point(s).

Note: *When RTI International Metals, Inc. (RTI) is referenced, it refers to one of the following companies that issued the Purchase Order/Conversion Release.*

RTI Niles RTI - St. Louis RTI Alloys RTI Fabrication RTI Tradco RTI - CT
RTI - LA RTI Pierce Spafford RTI Claro RTI Martinsville