



North America

Technology Solutions Group

**QUALITY ASSURANCE FORM**

<b>Number:</b> QAF 742.002	<b>Rev:</b> 6	<b>DCN No.:</b> 566	<b>Author:</b> T. Venuto	<b>Date:</b> 07/16/10
<b>Title:</b> Supplier Quality Clauses				<b>Page:</b> 1 of 9

**Revision History Table**

Revision	DCN No.	Date	Change Author
0	71	6/27/2005	A. Venuto
1	175	6/8/2006	A. Venuto
2	272	10/10/2007	A. Venuto
3	346	Void	Void
4	354	06/23/08	D. Sukeforth
5	384	09/30/08	D. Sukeforth

**Document Change Summary Table**

**Revision 6 Change Summary:**

- Rewrite to QNA-TSG branding
- Added Clauses A3 and D7
- 

In case of any conflict with this document and any other requirements, the order of precedence is as follows:

1. QNA-TSG Purchase Order
2. Drawings, Specifications, and or Electronic Files
3. This document

**General Clauses – These apply to all Purchase Orders**

The following clauses are incorporated into all QinetiQ North America Technology Solutions Group (hereafter QNA-TSG) Purchase Orders: This also applies to all Purchase Orders issued under QNA-TSG legacy names, i.e. Foster Miller, LAST Armor, Automatika, PSI, etc.

**A1.** All suppliers shall be qualified according to the QNA-TSG’s supplier qualification process defined in our AS9100 Quality Management System. Suppliers may be asked to complete a Supplier Quality Survey Questionnaire and/or successfully pass an on-site survey. The Supplier shall allow QNA-TSG personnel access to perform an on-site survey for qualification with the understanding that sensitive and proprietary information is reserved by the Supplier.

**A2. Customer / Government Access** - The supplier shall provide, if required, access to any of the subcontractor’s facilities where any of the work is being performed. This access shall be granted to the U.S. Government, Foreign Government, Commercial Customer, or QNA-TSG Quality Assurance Representative (QAR) as appropriate for the specific contract. The QAR shall be afforded unrestricted opportunity to evaluate and verify subcontractor’s compliance to this Purchase Order (PO). The subcontractor shall make available for reasonable use by the QAR the equipment necessary for validation purposes. Subcontractor personnel shall be made available for operation of such equipment as required.



North America

Technology Solutions Group

**QUALITY ASSURANCE FORM**

<b>Number:</b> QAF 742.002	<b>Rev:</b> 6	<b>DCN No.:</b> 566	<b>Author:</b> T. Venuto	<b>Date:</b> 07/16/10
<b>Title:</b> Supplier Quality Clauses				<b>Page:</b> 2 of 9

**A3. ITAR Registration** – Unless otherwise specified, custom product, parts and components, and the related technical data and information or services related to QNA-TSG’s military programs are controlled for export purposes pursuant to the International Traffic in Arms Regulations (“ITAR”). It is a violation of the ITAR to export or re-export these products, any of their parts or components, or technical data related to them without first receiving authorization to do so from the U.S. Department of State. (Rev. 6 addition)

**B1. ISO 9000:2008 or AS9100B QMS** -- Supplier compliance and/or certification to AS9100B, ISO9000:2008, or equivalent are preferred, but not mandatory. At a minimum there shall be adequate process controls to ensure the Supplier can meet the Purchase Order requirements.

**B2. Quality System** - Evidence of unacceptable Quality Procedures may result in suspension of contract deliveries pending demonstration of appropriate corrective actions.

**B3. Record Retention** -- The Supplier shall maintain records that provide objective evidence of compliance to the PO requirements. The records shall be maintained for a period of at least three years from completion of purchase order. The Supplier may send records to QNA-TSG to be maintained.

Note: Clause K1 takes precedence over this requirement if it is defined on the purchase order.

**C1. Non-Conforming Material** - QNA-TSG retains all Material Review Board (MRB) authority for any non-conforming material shipped to QNA-TSG. If the material is found to be non-conforming prior to shipment, do not ship non-conforming material without prior written approval of QNA-TSG.

**C2. Non-Conforming Material** - The Supplier shall report any nonconformance that may affect already delivered product.

- Notification shall include a clear description of the discrepancy, identification of suspect parts (mfg. dates, serial numbers, qty, etc.), and dates delivered.
- A containment plan and interim corrective action shall be provided to assure no further defective product will be received at QNA-TSG.

**C3. Customer Furnished Material**

- If this PO includes the use of material provided by QNA-TSG as Customer Furnished Material (CFM), then the following Quality Clause is applicable.
  1. All CFM must be handled with care and appropriately stored.
  2. Whenever CFM is determined to be non-conforming, follow your company’s normal procedure for handling non-conforming material. In addition, promptly notify QNA-TSG that the material is nonconforming. Send a copy of your non-conformance/defect report via e-mail to the Buyer or Materials Department contact, QNA-TSG’s Supplier Quality Engineer and to the QA Department. These e-mail addresses are available from QNA-TSG’s Buyer.
  3. The notification report must include:
    - Part number of the CFM that was furnished by QNA-TSG.



North America

Technology Solutions Group

**QUALITY ASSURANCE FORM**

<b>Number:</b> QAF 742.002	<b>Rev:</b> 6	<b>DCN No.:</b> 566	<b>Author:</b> T. Venuto	<b>Date:</b> 07/16/10
<b>Title:</b> Supplier Quality Clauses				<b>Page:</b> 3 of 9

- If your firm has altered the material so that it is now a new part number, use the original part number of the item that was received as CFM from QNA-TSG for your report to QNA-TSG.
- Include unique serial number(s), if applicable
- Quantity of the material that is non-conforming or suspected of being non-conforming
- Brief explanation of why the material is non-conforming
  - Be as specific as possible in the description of the problem. “Doesn’t work” or “Bad” is inadequate. “Camera does not zoom”, for example, provides more useful information.
- Was this caused by your firm?
- While the CFM was in your care:
  - Was the item dropped?
  - Wired incorrectly and powered up?
  - Did someone on your staff scratch or otherwise damage the item?

4. Returning the non-conforming material:

- After receipt of the notification report, the individual who placed the order with you will provide you with details about where to ship the material. You may be directed to ship the material to the manufacturer or to QNA-TSG.
- Only return the CFM that was furnished by QNA-TSG.
- If your firm has added cables or other attachments to the CFM, please remove the attachments if possible and only return the CFM. Do not send the CFM with additional appendages to QNA-TSG.
- In situations where you have applied a coating which can not be removed without creating additional damage, then return the material with the coating in place.
- All items must be packaged in such a manner as to prevent damage during shipment. Even if the item is presumed to be unsalvageable, it is important to package the material appropriately to prevent additional damage from occurring. Additional damage could make it difficult or impossible to determine a root cause for the initial problem.
- Enclose the Packing Slip and a copy of the Non-conformance/defect report in the box.
- Return the material via the usual shipping method for delivery to QNA-TSG unless otherwise directed by the Buyer or Materials Department.
- When the material has shipped, send an e-mail to the Buyer or to the Materials Department contact with a copy of the Packing Slip and the Nonconformance Report advising of the date that the material shipped and the method of shipment.

**D1. Packaging** – (Rev. 6) -- The supplier shall:

- Package all items in such a manner as to prevent damage during shipment and subsequent storage at QNA-TSG.
- Assure that shipping containers intended to be carried by an individual must not exceed 35 pounds total.



North America

Technology Solutions Group

**QUALITY ASSURANCE FORM**

<b>Number:</b> QAF 742.002	<b>Rev:</b> 6	<b>DCN No.:</b> 566	<b>Author:</b> T. Venuto	<b>Date:</b> 07/16/10
<b>Title:</b> Supplier Quality Clauses				<b>Page:</b> 4 of 9

- Work with the appropriate QNA-TSG site to establish packaging configuration.

**D2. Lot Date Codes** -- shall not exceed three years from date of receipt at QNA-TSG. Lot Date Codes for individual piece parts used as part of an assembly for QNA-TSG shall not exceed three years from date of assembly.

**D3. Electrostatic Discharge (ESD)** – (Rev. 6) -- Appropriate handling and packaging is required. The supplier shall:

- Have an ESD program in accordance with MIL-STD-1686, MIL-HDBK-263, ANSI/ESD-20-20, or QNA-TSG approved equivalent that provides protection of ESD sensitive devices during all phases of manufacture, test, storage and shipment.
- Package ESD sensitive items in packaging materials specifically designed for use with ESD sensitive materials.
- Label each package as “ESD SENSITIVE”.

**D4. Hazardous Materials** -- For any hazardous material, a material safety data sheet (MSDS) will be required.

**D5. Adhesives, Paints, Compounds, Raw Materials, Liquids, Thermal Insulating Fabrics** -- For adhesives, paint, compounds, raw materials, liquids, thermal insulating fabrics, date of manufacture, shelf life, expiration date, Material Safety Data Sheets and Certificate of Conformance are required.

**D6. Foreign Object Control** (e.g. items not intended to be part of the product such as solder splashes, wire stripping shavings, screwdriver, paperclip, etc.): The Supplier shall have sufficient Foreign Object controls within their facilities/operations to prevent Foreign Objects from entering into the product.

**D7. IPC Certification**

- Printed circuit/wiring boards, assemblies, and cables shall be built using J-STD and IPC **certified** personnel.
- Unless otherwise stated on the drawing or purchase order:
  - Soldering shall be performed by personnel certified to J-STD-001
  - Printed wiring boards shall be certified to IPC 600, class 2 – Acceptability of Printed Boards
  - Printed Wiring Assemblies shall be certified to IPC 610, class 2 – Acceptability of Electronic Assemblies
  - Cable Assemblies shall be certified to IPC 620, class 2 – Requirements and Acceptance for Cable and Wire Harness Assemblies

**E1. Receiving Inspection** -- Material shipped against this Purchase Order is subject to Receiving Inspection.

**F1. Workmanship** -- Unless otherwise specified, material shipped against this Purchase Order shall be free of pits, cracks, dents, scratches, burrs, sharp edges, foreign matter, or any other evidence of poor workmanship that



North America

Technology Solutions Group

**QUALITY ASSURANCE FORM**

<b>Number:</b> QAF 742.002	<b>Rev:</b> 6	<b>DCN No.:</b> 566	<b>Author:</b> T. Venuto	<b>Date:</b> 07/16/10
<b>Title:</b> Supplier Quality Clauses				<b>Page:</b> 5 of 9

shall render the unit unsuitable for its intended use. Additional requirements are defined in terms and conditions.

**G1. Purchase Order Changes**

- Once the PO is accepted, any supplier initiated change requests shall be initiated via e-mail to the buyer. QNA-TSG initiated changes should be communicated to the Supplier via a purchase order revision.

**G2. Product and Manufacturing Change Control**

- No change in specification, materials or manufacturing process that may affect fit, form and function is allowed to items on this order without written approval from QNA-TSG.

**Specific Clauses – These apply when referenced and incorporated into the PO or PO line item as indicated by the clause number(s) located on the face of the Purchase Order.**

**H1. QNA-TSG Source Inspection / Shipment Pre-Approval** is required prior to shipment from your plant.

This may be an on-site source inspection or may involve a review of all supporting quality documentation prior to shipment.

- QNA-TSG shall be notified a minimum of one week in advance of the time the materials are ready for review.
- In addition to material submittal, supplier shall submit all supporting inspection dimensional data, material certification, and test data to source inspector.

**H2. QNA-TSG Pre-Encapsulation Inspection** is required on this PO prior to shipment from your plant.

- QNA-TSG shall be notified a minimum of one week in advance of the time materials are ready for review.
- In addition to material submittal, supplier shall submit all supporting inspection dimensional data, material certification, and test data to source inspector.

**H3. Government Source Inspection** is required prior to shipment from your plant. Upon receipt of this PO, promptly notify the Government representative who normally services your plant. Furnish a copy of the PO to the Government representative, or if none, to the nearest Air Force, Army, Navy or Defense Supply Agent.

**J1. Certification of Conformance** – Supplier shall

- Furnish certification that product shipped complies with all requirements of the PO, drawings, and specifications.
- Include the following: QNA-TSG purchase order number, part number, revision, and quantity shipped.
- Serialized articles shall be identified by serial number
- Lot controlled articles shall be identified by lot number.

**J2. Certification of Calibration** - For instruments, gauges and measuring standards, electronic or mechanical, a Certificate of Conformance to ANSI/ASQ Z540.1 or ISO 10012 is required.



North America

Technology Solutions Group

**QUALITY ASSURANCE FORM**

<b>Number:</b> QAF 742.002	<b>Rev:</b> 6	<b>DCN No.:</b> 566	<b>Author:</b> T. Venuto	<b>Date:</b> 07/16/10
<b>Title:</b> Supplier Quality Clauses				<b>Page:</b> 6 of 9

**J3. Certification of Chemical/Physical Test** – Supplier shall

- Furnish results of chemical/physical tests conducted on materials submitted.
- Test reports shall identify applicable material specification, test results, and material lot control number.

**J4. Certified Manufacturing Date** – Materials furnished on this PO are age-sensitive. Supplier shall

- Furnish certification identifying the material cure date/date of manufacture
- Note any special storage and handling requirements, if applicable on package or container
- Age-sensitive material shall have 80% of the shelf life remaining upon receipt at QNA-TSG.

**J5. Certification of Special Processes** – Articles on this PO require special processes such as, but not limited to: soldering, painting, welding, heat-treating, electroplating, anodizing, chemical films, or nondestructive testing.

- Supplier shall furnish certification to the processes (include process specification number, type, class, color, etc.).

**J6. Certification of printed circuit/wiring boards or printed circuit/wiring assemblies** -- Unless otherwise stated on the drawing or purchase order: Printed wiring boards shall be certified to IPC 600, class 3. Printed Wiring Assemblies shall be certified to IPC 610, class 3.

**J7.** Vendor shall provide Material Certification for all parts ordered.

**K1. Record Retention** -- The supplier shall maintain records in accordance with the applicable Quality System Standard. The records shall be maintained for a period of not less than 7 years from completion of purchase order.

**K2. Test Reports** – Articles on this PO require electrical, mechanical, environmental, functional, or other tests in accordance with Supplier, QNA-TSG and/or Government specifications. Supplier shall furnish test reports containing as a minimum:

- a. QNA-TSG Purchase Order Number
- b. Item name, drawing number and revision
- c. Test specification number and revision as applicable
- d. Number of units tested
- e. Serial numbers of units tested as applicable
- f. Test parameters
- g. Test results

**K3. Acceptance Test Procedures Approval** – Supplier must obtain QNA-TSG approval of supplier acceptance test procedure prior to conducting tests on items to be delivered on this P.O.



North America

Technology Solutions Group

**QUALITY ASSURANCE FORM**

<b>Number:</b> QAF 742.002	<b>Rev:</b> 6	<b>DCN No.:</b> 566	<b>Author:</b> T. Venuto	<b>Date:</b> 07/16/10
<b>Title:</b> Supplier Quality Clauses				<b>Page:</b> 7 of 9

**K4. Ballistic Test Reports** -- Supplier shall

- Provide Quality Assurance Ballistic Test Reports for each lot of armor tile used in the production of armor panels for each shipment.

**K5. Textiles** – Supplier shall

- Identify defects in textiles and other yard-goods by use of a flagging system.
- In addition, a map of defects for each roll shipped shall provide information on the nature and location of defects.
- An estimate of the square footage of defects in each roll shall be provided and an adjustment to the invoiced quantity made to reflect unusable material.

**K6. First production lot qualification with ballistic testing is required**

- Lot sampling and testing shall be in general philosophical accordance with QNA-TSG Quality Assurance Procedure Q-0013 for physical properties and Q-0003, 0016 0024 or 0058, as appropriate to the end item for ballistics.
- Unless otherwise stated on the purchase documents, the tile vendor will provide the qualification sample parts and QNA-TSG will provide target preparation, transshipment to the test range, test services and will supply (or cause to be supplied) the test results back to the tile vendor on a timely basis (maximum 7 days for land vehicle tile or 14 days for aircraft panels).

**K7. Production lot qualification with ballistic validation testing is required.**

- Lot sampling will consist of 1%, or 12 tiles, whichever is smaller. Whole tiles must meet the performance requirements of QNA-TSG (FMI) Quality Assurance Procedure Q-0003

**K8. Production lot qualification with ballistic validation testing is required.**

- Lot sampling will consist of 1%, or 12 tiles, whichever is smaller.
- Whole tiles must meet a minimum V50 of 3000 ft/sec when tested per LANL Ceramic Armor Specification.
- 

**L1. ESD Handling and Packaging** -- Electrostatic Discharge (ESD) handling and package control is required by the specification or drawing on this P.O. The supplier shall have procedures for protection of ESD sensitive devices during all phases of handling, packaging, storage, and testing, and storage. The supplier's ESD program shall be in accordance with MIL-STD-1686, MIL-HDBK-263, ANSI/ESD-20-20, or QNA-TSG approved equivalent. An ESD identification label shall be affixed to each package noting "ESD SENSITIVE."

**L2. Electronic Components Packaging** -- All electronic components parts shall be packaged such that they are kept from detrimental physical contact with any other component. In the case of axial lead components weighing less than 5 grams, they may be packaged in a primary container with lead contact, providing leads are not bent twisted, or otherwise damaged. No more than 100 components may reside within the container.



North America

Technology Solutions Group

**QUALITY ASSURANCE FORM**

<b>Number:</b> QAF 742.002	<b>Rev:</b> 6	<b>DCN No.:</b> 566	<b>Author:</b> T. Venuto	<b>Date:</b> 07/16/10
<b>Title:</b> Supplier Quality Clauses				<b>Page:</b> 8 of 9

**L3. Lot Date Code Identification** -- Electrical and electronic components that have manufacturer lot date code identification shall be packaged to provide segregation of manufacturers and lot date code by quantity to assure traceability can be maintained.

**M1. First Article Inspection** – The supplier shall

- Perform a first article inspection and provide supporting data to verify 100% of the product drawing requirements, specifications, and notes.
  - The first article unit(s) will be taken from the first production run with production tooling after the process is stabilized.
  - The first article submission shall include all records and inspection / test data related to build history, failures, repairs, acceptance test results, and other pertinent configuration documentation.
  - QNA-TSG reserves the right to witness the first article inspection at the supplier’s facility.
- Revisions to a drawing will require a partial first article submission for dimensions / tests that were revised.

**M2. First Piece Inspection:** When this clause is cited on a purchase order, the supplier shall provide first piece dimensional inspection data. The first piece shall be from the initial lot, batch, or run. 100% of the dimensions shall be measured as part of the first piece inspection. Data sheet shall depict dimension, tolerance, and actual measurement, and be traceable to the QNA-TSG part number and revision. First piece inspection data shall be sent to QNA-TSG at least once for each purchase order. Subsequent purchase orders shall require another first piece inspection datasheet. Any revision changes to a drawing that affect any dimensions shall necessitate additional first piece inspection data for an open purchase order.

**M3. Critical / Key Dimensions Inspection** - The supplier shall

- Provide critical / key dimension inspection results with each shipment.
  - Critical / Key dimensions shall either be identified on the drawing, or as part of the purchase order notes.
  - Data shall be supplied on 100% of the identified dimensions
  - Sample size: 10 or the quantity ordered via the PO, whichever is less. This quantity is required unless otherwise stated on the PO.

**M4. Inspection and Test Plan** - The supplier shall

- Submit an inspection and test plan to QNA-TSG. The plan should include the following:
  - Flow chart or Control Plan that identifies the manufacturing process steps, inspection performed at each operation, and the reaction plan should a non-conformance be identified

**M5. Random sampling of production armor** by QNA-TSG or its customer may be performed for the purpose of verifying ballistic performance capability.

- Failure of the armor to demonstrate the required will be cause for rejection of the related production lot(s).



North America

Technology Solutions Group

**QUALITY ASSURANCE FORM**

<b>Number:</b> QAF 742.002	<b>Rev:</b> 6	<b>DCN No.:</b> 566	<b>Author:</b> T. Venuto	<b>Date:</b> 07/16/10
<b>Title:</b> Supplier Quality Clauses				<b>Page:</b> 9 of 9

**M6. Ballistic lot testing of ceramic tiles for ballistic qualification** will be paid for by QNA-TSG.

- Retesting re-fired samples for previously failed lots will be the financial responsibility of the supplier.

**M7. Inspection Data** -- Vendor shall supply Inspection data.

**N1. Quality Program Plan** -- When this clause is cited on the purchase order, the supplier shall submit a Quality Program Plan in accordance with requirements defined in purchase order and/or specification.

**R1. Baseline Control:** When this clause is cited on the purchase order, a QNA-TSG approved supplier manufacturing configuration baseline is required. This baseline will be presented to QNA-TSG for approval. A previously approved baseline will satisfy this requirement. QNA-TSG may allow shipment of product prior to formal approval of baseline package providing supplier is working with QNA-TSG to establish one. The baseline package requested of the supplier shall be as follows:

- A single drawing under the supplier's engineering change control system listing supplier's assembly drawing(s), component piece part drawings, material drawings, critical processing specifications and critical manufacturing operations. Each document listed will include the document name, part number/specification number, and revision level and revision date. This baseline drawing shall have its own name, number, revision level, and revision date for future change control. This drawing can either be in the form of a manufacturing flow chart (preferred) or a simple listing.
- Acceptance (in writing) by QNA-TSG of the above specified documentation shall be considered as freezing the design and forming a configuration baseline of the part being purchased. The supplier's approved baseline identification, revision level and revision date will subsequently be reflected on the purchase order, and carried forward on future purchase orders by the QNA-TSG Purchasing Department.
- All changes to the QNA-TSG-approved baseline require QNA-TSG approval; changes must be submitted on the QNA-TSG Baseline change request form with a copy of the affected drawings. The request must be sent to the QNA-TSG Purchasing Department for disposition. A copy of the approved request will be sent to the supplier, followed by an appropriate baseline revision level upgrade on the purchase order.

**P1. Lot Control and Traceability** – The supplier shall

- Assure traceability to the manufacturing process via date code, lot codes or unique job number

**P2 Panel Serialization** -- The supplier shall

- Mark or serialize the Armor panels in such a manner as to provide traceability to armor tile ballistic test reports.

**S1. Prohibited Materials** – The following materials are prohibited:

- Pure Tin (97%), Pure Cadmium (97%), Pure Zinc (97%), or unplated Brass.
- Teflon shall not be used for bolts, nuts, sleeves, bearing feed-throughs, or any other purpose.