

Supplemental Quality Assurance Requirements

Purpose

The following Supplemental Quality Assurance Requirements (SQARs) clauses become requirement(s) *when specified by number* within the Purchase Order. If these clauses are referenced on a Request for Quotation (RFQ) they shall apply to any Purchase Order for the items placed as a result of the RFQ. Any conflict or perceived conflict between the SQARs and any other Purchase Order requirements shall be resolved in writing through the GD-OTS Garland Buyer. For ease of access, SQAR clauses are also available online at <https://www.gd-ots.com/suppliers/quality-clauses/>. It is the supplier's responsibility to check the systems to assure the latest revision is being used.

Flowdown of identified SQARs to sub-tier suppliers is required to ensure final product compliance.

Definitions

SQAR-1. QMS Compliant

The Seller shall provide and maintain a Quality Management System that is compliant to ISO 9001, Quality Management Systems – Requirements. Compliance with the provisions of this clause in no way relieves the seller of the final responsibility to furnish acceptable supplies or services as specified herein. The Seller shall make available for review by GD-OTS Garland and the Government, quality system manuals, procedures, planning and all other documentation that compromise the Seller's quality system for both hardware and software. GD-OTS Garland and the Government may review the quality system documentation and may perform any necessary inspections, evaluations, or audits to confirm conformance to requirements and adequacy of the quality system.

SQAR-2. QMS Certified

The Seller shall provide and maintain a Quality Management System that is registered to ISO 9001, Quality Management Systems – Requirements. The registration body shall be accredited by a recognized accreditation body such as the ANSI-ASQ National Accreditation Board (ANAB). System registration to a higher level Quality Management System such as AS9100 shall be an acceptable alternate. Compliance with the provisions of this clause does not relieve the Seller of final responsibility to furnish acceptable supplies or services as specified herein. The Seller shall make available for review to GD-OTS Garland and the Government, quality system manuals procedures, planning and all other documentation that comprise the Seller's Quality Management

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System for both hardware and software. GD-OTS Garland and the Government may review the quality system documentation and may perform any necessary inspections, evaluations, or audits to confirm conformance to requirements and adequacy of the quality system.

SQAR-3. Approved Inspection System

The Seller shall plan, develop, implement, control and maintain an overall product acceptance system that demonstrates compliance to all technical and contractual requirements. Where a QAPP has been required (reference clause Q609), the Product Acceptance System shall be documented in the QAPP. The Product Acceptance System shall address system, subsystem, and component requirement verification, raw material inspection, receiving inspection, in-process inspection, source inspection, and final acceptance testing at all levels, including lower tier suppliers.

Seller shall flow the substance of this clause to its subcontractors, including this sentence, changing the relationship of the parties as appropriate to preserve the intent of the words.

SQAR-4. Certification of Conformance – Supplier

Seller shall provide the following lot documentation with each shipment (may be delivered via hardcopy with shipment or electronic media to buyer).

1) Seller Certificate of Conformance (CoC)

A CoC shall be provided by the Seller for each supplier used in the supply chain

This CoC shall list and contain:

- Sellers name and address
- Purchase order (PO) number
- [- Line Item]
- [- Cage Code, if applicable]
- Quantity of shipment
- Drawing number with drawing revision, specification number with revision, and any GD-OTS Garland CN(s) listed in the Letter of Transmittal (LOT)
- Seller lot identification (e.g. lot number)
- Material and process lot identification (e.g. material heat number or lot identifier, material finish and treatment lot identifier) representing the all materials and processes, including special processes, required by technical documentation.

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- The CoC must include printed name, title, and signature of official signing the CoC.
- Statement attesting to compliance with all technical documents listed in the LOT for the item produced.
- Signature, title, and date of authorized seller quality assurance representative.

For any certifications on which the Seller was not the manufacturer of an item, certifications must be traceable to and contain a copy of a certification from the manufacturer.

2) Materials and Process Lot Certification

Seller shall provide certification documentation and/ or objective evidence, at all levels of the supply chain, for all required materials and processes, as listed in the TDP Status Report documentation, used in producing the item. The documents should contain an authorized signature and date.

The Material Certification shall list and contain:

- Applicable drawings and specification and the drawing / specification revision.
- Lot test data (e.g. chemical, physical, and mechanical properties) required by drawings or applicable specifications.
- All material and process lot identification shall be listed on the CoC and be traceable to the CoC

3) Special Process Certification

Seller shall provide a CoC, in compliance with section 1) above for all special processes (e.g. plating, coatings, cleaning, chemical treatments, heat treatment, non-destructive testing) performed in accordance with listed drawings and specifications. Test data and other associated data is not required to be provided with the lot documentation but shall be kept on file for review by GD-OTS Garland upon request.

4) Commercial/COTS Items

Commercial Off the Shelf (COTS) items are those that meet the requirements of the definitions of commercial items and COTS items as defined in FAR 2.101. Suppliers of COTS items are expected to supply a Certificate of Analysis with the first shipment against this contract and a Certificate of Conformance for all subsequent shipments.

A Certificate of Analysis (COA) will contain:

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- test/inspection results demonstrating conformance to any requirements in the governing specifications (e.g. chemistry, strength, plating, etc.)
- the revision of the governing specification to which the part conforms
- the purchaser's purchase order number
- quantity and lot number(s) supplied
- a statement of conformance to the requirements on the purchaser's purchase order signed by an authorized official of the company.

Both Certificates of Analysis and Certificates of Conformance shall be traceable to similar certificates from the original manufacturer.

When the TDP drawing for a commercial/COTS item contains dimensional information, the purchaser of the commercial/COTS item is responsible for the ongoing conformance of the item throughout the life of this contract. The purchaser of the commercial/COTS item shall provide a copy of their receiving inspection documentation for the part number demonstrating conformance to the dimensional requirements with the first shipment against this contract.

For suppliers to GD-OTS Garland that purchase commercial/COTS items in support of their GD-OTS Garland purchase order, the contents of this section shall be flowed to the commercial/COTS supplier as well as clause Q624 (Lot Numbering – MIL-STD-1168), when required.

SQAR-5. Raw Material Certification or Test Report (Metals, Chemicals, Polymers, etc.)

Laboratory certificate of actual chemical analysis and mechanical of physical property test results as specified by the governing material specification with each shipment. A mill analysis or certificate of compliance traceable to the mill heat number is acceptable for metallic wrought products only. Reference the GD-OTS Garland purchase order number on the certification.

SQAR-6. Certification of Conformance – Distributor

Manufactured lots, presented for acceptance, shall be accompanied by a lot report which shall contain the certification and test data sufficient to assure full compliance to all requirements of the technical data package (TDP). All documents in the lot report shall be complete, legible, and traceable, and copies must be forwarded with each lot shipment.

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1) Each lot report shall contain a Certificate Of Conformance, attesting to the lot's compliance to a specific drawing or specification revision level, including any applicable CN or NOR numbers. The COC shall also reference applicable material lot number(s) or heat numbers that are traceable to this manufactured component or assembly lot(s). COC must include printed name, title, and signature of official signing the COC.

2) Each lot report shall also contain material certification(s) for material lots, referenced on the COC (noted above). Material certification shall include actual test data sufficient to assure conformance to material, process or preservation specifications including the chemical, physical, and mechanical properties required by applicable drawings or specifications. For some commercial and military off-the-shelf items, the supplier may present (with prior written General Dynamics approval) alternate Objective Quality Evidence (OQE) of compliance such as manufacturer's specification sheets with typical conforming data.

3) as applicable to the requirements of the technical data package, any item requiring special processes, such as painting, plating, heat treat, magnetic particle inspection, x-ray, etc., shall be accompanied by a certificate of conformance attesting to compliance of the presented lot for that process. Actual test data for the process need not be included in the lot report (only the process coc) but the data must be kept on file and available for review upon request by general dynamics or customer representatives.

SQAR-7. Item Serialization

The seller shall serialize components, subsystems, and assemblies, as required by drawings, specifications, and the purchase contract. Serialization shall be such that duplication of serial numbers will be precluded. The seller's quality control system shall provide traceability of all serialized supplies to the source. When two or more serialized parts are joined in assembly, a list for each assembly serial number with part numbers, change letters, and component serial numbers must accompany each shipment.

SQAR-8. Lot Control and Traceability – Raw Materials

When the GD-OTS Garland drawing and/or specification includes a material call-out, the supplier shall include a legible Material Certification with each production shipment. At a minimum, the Material Certification shall include the complete material call-out, country of origin (for specialty metals subject to DFARS 252.225-7009 only) and the GD-OTS Garland purchase order number. When the material call-out includes a Durometer or Hardness specification, the Material Certification shall include both the specification and actual test results.

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Objective evidence of conformance to the material call-out (e.g., material type, grade, formulation, color, etc.) shall be maintained by the supplier and made available to GD-OTS Garland upon request.

When the material call-out includes a GD-OTS Garland or industry standard material specification that includes chemical composition and/or mechanical property requirements (e.g., A10527, A10528, A10529, ASTM A480, A484, B209, B248, etc.), a legible Mill Test Report containing actual chemical and mechanical test results shall accompany the Material Certification.

For metallic wrought products only, a Mill Test Report with actual chemical composition test results is not required if heat identity was not maintained throughout all operations. In such cases, a Material Certification accompanied by actual mechanical test results is acceptable.

SQAR-9. Lot Control and Traceability – COTS, CFM, Items

The Seller shall ensure that each end item and sub-component is traceable to the product batch/lot number, the date of manufacture, the configuration revision level, and the process revision level. Seller shall ensure that this requirement is followed by and flowed to their supply base and sub-tier supply base. A batch/lot is defined as product that has been blended, mixed, or fabricated during an uninterrupted manufacturing run using the same tools, process, and material. Components in an end item assembly lot shall be traceable to supplier lots and base material lots.

SQAR-10. Container Lot Numbering

Parts shall be marked per the applicable drawing or specification. Unless otherwise specified, the marking shall be accomplished in accordance with MIL-STD-130. Marking shall be applied in the approximate area and using the same method as depicted on the drawing.

If marking requirements are not provided by the drawing/specification or purchase order, then Bag & Tag marking shall be required. DO NOT apply the part marking directly to the part. The part number shall be applied either to a tag attached to the part or on a label affixed to a bag or other suitable container.

The Manufacturing authority will be considered GD-OTS Garland (Cage code 3LCX2) unless otherwise specified on the drawing or Purchased Order.

SQAR-11. Calibration Report

Acceptance Inspection Equipment (AIE) the supplier is responsible for acquiring and assuring all inspection and test equipment is appropriate and capable of the required accuracy and precision for determining conformance to design, performance or process during its use on contract production. All test and inspection equipment shall be calibrated with accuracy traceable to the national institute of standards and technology (NIST) or equivalent international standards. The supplier shall validate and assure that all product measurements using non-standard inspection equipment are the same as measurements using standard measuring equipment. The validation shall be based on results of actual measurements of samples representing production parts. Objective data providing this assurance shall be included in the calibration records, and in any event, shall be verified prior to use of non-standard measuring equipment for production acceptance. Subsequent revalidation is required for instances where changes in product features or wear in the equipment may influence measurement accuracy or precisions. The supplier is responsible for providing all AIE unless otherwise specified, and for the proper storage, handling, and use of all AIE necessary to assure conformance of components and end items to contract requirements. Supplier furnished AIE shall be made (i) in accordance with the equipment drawings specified in the contract, or (ii) in accordance with any other design, provided that General Dynamics and the government approve the design documentation. The designs for all supplier-provided AIE shall be submitted for approval IAW the applicable CDRL item or as directed by General Dynamics quality engineering. When required, conceptual designs, for supplier provided AIE, shall be submitted 30 days before the submission of final designs. Final designs for all supplier-provided AIE shall be submitted for approval not less than 45 days before FAT. All submissions must contain sufficient design and application data to permit evaluation of the design's ability to test or measure the characteristic or parameter with the required accuracy and repeatability. The government has reserved the right to disapprove, at any time during performance of this contract, use of any AIE not meeting the requirements. Resubmission of AIE design documentation for approval on follow-on contract is not required provided inspection characteristic parameters specified in the current technical data package and the previously approved AIE design documentation remains unchanged. The supplier shall provide the contract number and identify previously approved AIE documentation that meets the above prerequisites. All AIE shall be available for use prior to first article submission or prior to initiation of production under this contract.

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SQAR-12. Source Inspection Required

GD-OTS Garland Source Inspection is required prior to shipment from your plant. Unless otherwise directed by the purchase order, supplier is to schedule GD-OTS Garland Source Inspection at least two weeks prior to service need date by contacting your assigned Supplier Quality Engineer. Scheduling issues that are not adequately addressed by your SQE may be resolved by contacting your buyer directly. Supplier is responsible for the following:

- Providing the source inspector with a clean, well-lit work area conducive to performing source inspection
- Providing the source inspector with all necessary inspection and test equipment
- Providing the source inspector with a complete and legible copy of the relevant TDP
- Providing the source inspector with full access to all necessary documents, records, materials and processes necessary to complete the source inspection

SQAR-13. Source Surveillance Required

Supplier shall grant GD-OTS Garland, authorized GD-OTS Garland customer/government representatives and regulatory authorities right of access to all applicable records and areas of all facilities, at any level of the supply chain, involved with the products and/or services delivered under this purchase order.

SQAR-14. Government/End User Source Inspection Required

Government inspection requirements. Government inspection is required prior to shipment from your facility. Upon receipt of this order, promptly notify the government representative who normally services your facility so that appropriate planning for government inspection can be accomplished. In the event the representative or office cannot be located, the General Dynamics buyer should be notified immediately.

SQAR-15. Copy of Purchase Order to be Provided to the Government/End User

The Supplier is responsible for performing or having performed all inspections and tests necessary to substantiate that the supplies or services furnished under this contract conform to contract requirements, including any applicable technical requirements for specified manufacturer's parts. By delivery of the item(s) of this order, the Supplier certifies compliance to all requirements of the applicable drawings and specifications of the revision current at the time of shipment, unless otherwise specified in the purchase order. Upon request, the Supplier will make available, at no additional cost to the buyer, all records necessary to support evidence of such compliance.

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SQAR-16. Government/End User Source Surveillance

Supplier shall grant GD-OTS Garland, authorized GD-OTS Garland customer/government representatives and regulatory authorities right of access to all applicable records and areas of all facilities, at any level of the supply chain, involved with the products and/or services delivered under this purchase order.

SQAR-17. Inspection Report

The Supplier is responsible for performing or having performed all inspections and tests necessary to substantiate that the supplies or services furnished under this contract conform to contract requirements, including any applicable technical requirements for specified manufacturer's parts. By delivery of the item(s) of this order, the Supplier certifies compliance to all requirements of the applicable drawings and specifications of the revision current at the time of shipment, unless otherwise specified in the purchase order. Upon request, the Supplier will make available, at no additional cost to the buyer, all records necessary to support evidence of such compliance.

SQAR-18. Inspection Report – GD-OTS Garland Format

Quality inspection/test data submittal required. Each shipment must be accompanied by supplier data relative to operational/functional parametric measurements/tests from the suppliers' standard quality procedures. Where specific data is required per the part drawing/specification the data must be certified by the supplier's quality assurance personnel. When source inspection is imposed, data shall be reviewed by the source inspector. Supplier shall maintain data on file for established record retention period.

SQAR-19. Control Plan Required

The Supplier shall prepare and maintain written instructions for tests and inspections performed on this contract. If no test requirements are flowed with the TDP, the Supplier shall contact the Buyer to receive those requirements. The instructions shall include identification of the item to be tested or inspected, all test and inspection characteristics and conformance criteria, test equipment and gauging to be used, including a schematic (if applicable), level of test or inspections, and method of recording results. The Supplier shall submit copies of all test and inspection instructions to General Dynamics for review and approval prior to implementation. Quality instructions, previously approved on another General Dynamics contract, need not be resubmitted unless significant changes have been made whenever: 1) methods or processes used to manufacture the part have changed; 2) the part is manufactured at a different facility; 3) there has been more than a two-year lapse in production; 4) there has been a change in sub-tier suppliers.

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Electrical Test Documentation and Marking

The following information is provided as clarification of the test requirements for all electrical/electronic parts/assemblies supplied under GD-OTS Garland Purchase Orders:

A) Testing is to be performed on 100% of the parts/assemblies according to requirements provided in the Purchase Order and/or Technical Data package (TDP). (Suppliers must notify GD-OTS Garland, through the GD-OTS Garland buyer, if test requirements for electric/electronic assemblies/parts are not specified on the purchase order or TDP.)

B) The following applies where QSIs are specified as the source of test requirements. When testing is performed according to the requirements from other sources, such as drawings, imbedded text in the P.O., GD-OTS Garland specifications, or some other source required by the P.O., the requirements of I. and II. below shall apply.

I. When tests are performed to QSIs where a Test Data Sheet is part of the QSI, and the parts are serialized or identified with a sub-number, a copy of the completed data sheet and Test Certification shall accompany the part. The part/assembly and the Test Data Sheet shall be stamped with a test stamp indicating acceptance of the part/assembly to the test.

II. When tests are performed to QSIs where a Test Data Sheet is not part of the QSI, and the parts are serialized or identified with a sub-number, a completed Test Certification shall accompany the part. The part/assembly and the Test Certification shall be stamped with a test stamp indicating acceptance of the part/assembly to the test.

Test Certifications shall be labeled as "Test Certification" and must include, as a minimum:

1. Part Number and Revision
2. Purchase Order number
3. Test reference and revision level, i.e., the source of the test, for example:
 - a. QSI (Number, Title)

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- b. Drawing (Number and Note(s))
 - c. P.O. embedded instructions
 - d. Approved Supplier test procedure (Number, Title)
4. Itemized list of included Serial Numbers or Sub-numbers
5. A part quantity
6. Statement that all Parts listed have been tested to (referenced document) and have passed the test requirements and that the documentation (objective evidence) of the production and test of these parts/assemblies is on file with the supplier.
7. Tester's name or initials
8. Test stamp
9. Date

III. When tests are performed to QSIs where a Test Data Sheet is not part of the QSI, and the parts are not serialized or identified with a sub-number, a completed Test Certification shall accompany the part. The part/assembly and the Test Certification shall be stamped with a test stamp indicating acceptance of the part/assembly to the test.

Test Certifications shall be labeled as "Test Certification" and must include, as a minimum:

- 1. Part Number and Revision
- 2. Purchase Order number
- 3. Test reference and revision level, i.e., the source of the test, for example
 - a. QSI (Number, Title)
 - b. Drawing (Number and Note(s))
 - c. P.O. embedded instructions
 - d. Approved Supplier test procedure (Number, Title)
- 4. A part quantity

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5. Statement that all Parts listed have been tested to (referenced document) and have passed the test requirements and that the documentation (objective evidence) of the production and test of these parts/assemblies is on file with the supplier.

6. Tester's name or initials

7. Test stamp

8. Date

TEST CERTIFICATION

For Part Number:

Revision:

Purchase Order:

Test Procedure Reference:

Revision:

Serial/Sub- Number(s):

Quantity:

Part Numbers have been tested to (referenced document) and have passed the test requirements. Documentation (objective evidence) of the production and test of these parts/assemblies is on file with Supplier: (name)

Tested By:

Stamp:

Date:

SQAR-20. First Article Inspection Required/Maintained – AS9102 Required

AS9102 - First Article Inspection is required in accordance with AS9102 found at www.sae.org. Forms provided in the AS9102 or equivalent shall be used to document the results of the first article inspection as required in the specification. These forms may be generated by any media, but must contain all the information required by AS9102 and be documented using the same unit of measure as specified in the technical data package. A copy of the AS9102 F.A.I. report specification shall be submitted to GD-OTS Garland location where the purchase order originated with or before shipment of the product and retained at the supplier.

SQAR-21. First Article Inspection Plan Required

Upon completion of the first article test, the Supplier shall compile and submit a complete report to General Dynamics in accordance with the applicable contract CDRL item or as directed by General Dynamics Quality. The report shall contain the actual results of all inspections and tests required by the approved first article test plan. It shall include all measurements, recorded test data, and certification including sub-tier Supplier's inspection records and certifications.

If receipt and approval of First Article package is contractually required before shipping material, and part marking is required per drawing, a photo of the part marking as applied on the part must be included with First Article package. Photo must clearly depict marking content and location.

The report shall contain component and assembly inspections and test as necessary to assure conformance. All test/inspection results and certifications shall be traceable to the sample/lot. The completed test report shall be provided to General Dynamics Quality Engineering within 10 days of first article test completion and must be approved in writing, prior to commencement of production. Subsequent first articles are required per procedures or as a minimum whenever:

- 1) configuration changes have occurred (first article inspection applies only to the configuration changes);
- 2) Methods or processes used to manufacture the part have changed;
- 3) the part is manufactured at a different facility;
- 4) there has been more than one-year lapse in production;
- 5) there has been a change in sub-tier Suppliers.

SQAR-22. As-Built Record or Log

Manufactured lots, presented for acceptance, shall be accompanied by a lot report which shall contain the certification and test data sufficient to assure full compliance to all requirements of the technical data package (TDP). All documents in the lot report shall be complete, legible, and traceable, and copies must be forwarded with each lot shipment.

- 1) Each lot report shall contain a Certificate Of Conformance, attesting to the lot's compliance to a specific drawing or specification revision level, including any applicable CN or NOR numbers. The COC shall also

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reference applicable material lot number(s) or heat numbers that are traceable to this manufactured component or assembly lot(s). COC must include printed name, title, and signature of official signing the COC.

2) Each lot report shall also contain material certification(s) for material lots, referenced on the COC (noted above). Material certification shall include actual test data sufficient to assure conformance to material, process or preservation specifications including the chemical, physical, and mechanical properties required by applicable drawings or specifications. For some commercial and military off-the-shelf items, the supplier may present (with prior written General Dynamics approval) alternate Objective Quality Evidence (OQE) of compliance such as manufacturer's specification sheets with typical conforming data.

3) as applicable to the requirements of the technical data package, any item requiring special processes, such as painting, plating, heat treat, magnetic particle inspection, x-ray, etc., shall be accompanied by a certificate of conformance attesting to compliance of the presented lot for that process. Actual test data for the process need not be included in the lot report (only the process CoC) but the data must be kept on file and available for review upon request by general dynamics or customer representatives.

SQAR-23. Supplying Controlled Shelf Life Material

Age controlled material must have 2/3 of its shelf life remaining at the time of shipment. Each shipment is to be identified with the date of manufacture/date of expiration. The container(s) shall not be damaged.

Furnish electrical connectors with dust caps.

For bearings, Supplier to individually wrap and box parts and identify with the part number as specified on the purchase order. Supply a certification for grease if bearing contains grease.

SQAR-24. Removed

Removed

SQAR-25. Raw Material Approval Prior to Manufacturing of Product

The supplier shall submit to GD-OTS Garland a CTR for each lot of parts, assemblies, subsystems and systems with each delivery. This report shall be submitted with the FAI package prior to shipment and with all subsequent lots.

The report shall contain the following:

1. Name of the company
2. Date

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3. Purchase order number, National Stock number, and drawing number
4. Quantity in each lot or shipment
5. Part description and lot number
6. All inspection and tests required by contract (i.e. material, process, performance, functional, etc) shall be recorded in test reports. These reports shall identify each lot submitted for acceptance by lot number. The specified characteristics and requirements and actual results obtained.
7. Reports or Raw Material Producer's chemical, mechanical and physical analyses.
8. A statement as follows certifying that the material meets all requirements of the contract: "The undersigned, individually, and as the authorized representative of the contractor, warrants and represents that all the information supplied above is true and accurate. The material covered by this certificate conforms to all contract requirements (including but not limited to the drawing specifications): The inspection test results and the analyses appearing herein are true and accurate; and this certificate is made for the purpose of inducing payment and with the knowledge that the information and certification may be used as a basis for payment."
9. Signature and Title of certifying official.

SQAR-26. Control of 3rd Party Independent Inspection/Testing

Laboratory certificate of actual chemical analysis and mechanical of physical property test results as specified by the governing material specification with each shipment. A mill analysis or certificate of compliance traceable to the mill heat number is acceptable for metallic wrought products only. Reference the GD-OTS Garland purchase order number on the certification.

SQAR-27. Control of Special Processes and Certification

Manufactured lots, presented for acceptance, shall be accompanied by a lot report which shall contain the certification and test data sufficient to assure full compliance to all requirements of the technical data package (TDP). All documents in the lot report shall be complete, legible, and traceable, and copies must be forwarded with each lot shipment.

- 1) Each lot report shall contain a Certificate Of Conformance, attesting to the lot's compliance to a specific drawing or specification revision level, including any applicable CN or NOR numbers. The COC shall also reference applicable material lot number(s) or heat numbers that are traceable to this manufactured component or assembly lot(s). COC must include printed name, title, and signature of official signing the COC.

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2) Each lot report shall also contain material certification(s) for material lots, referenced on the COC (noted above). Material certification shall include actual test data sufficient to assure conformance to material, process or preservation specifications including the chemical, physical, and mechanical properties required by applicable drawings or specifications. For some commercial and military off-the-shelf items, the supplier may present (with prior written General Dynamics approval) alternate Objective Quality Evidence (OQE) of compliance such as manufacturer's specification sheets with typical conforming data.

3) as applicable to the requirements of the technical data package, any item requiring special processes, such as painting, plating, heat treat, magnetic particle inspection, x-ray, etc., shall be accompanied by a certificate of conformance attesting to compliance of the presented lot for that process. Actual test data for the process need not be included in the lot report (only the process coc) but the data must be kept on file and available for review upon request by general dynamics or customer representatives.

SQAR-28. Inspection Equipment – Supplier Furnished

Acceptance Inspection Equipment (AIE) the supplier is responsible for acquiring and assuring all inspection and test equipment is appropriate and capable of the required accuracy and precision for determining conformance to design, performance or process during its use on contract production. All test and inspection equipment shall be calibrated with accuracy traceable to the national institute of standards and technology (NIST) or equivalent international standards. The supplier shall validate and assure that all product measurements using non-standard inspection equipment are the same as measurements using standard measuring equipment. The validation shall be based on results of actual measurements of samples representing production parts. Objective data providing this assurance shall be included in the calibration records, and in any event, shall be verified prior to use of non-standard measuring equipment for production acceptance. Subsequent revalidation is required for instances where changes in product features or wear in the equipment may influence measurement accuracy or precisions. The supplier is responsible for providing all AIE unless otherwise specified, and for the proper storage, handling, and use of all AIE necessary to assure conformance of components and end items to contract requirements. Supplier furnished AIE shall be made (i) in accordance with the equipment drawings specified in the contract, or (ii) in accordance with any other design, provided that General Dynamics and the government approve the design documentation. The designs for all supplier-provided AIE shall be submitted for approval IAW the applicable CDRL item or as directed by General Dynamics quality engineering. When required, conceptual designs, for supplier provided AIE, shall be submitted 30 days before the submission of final designs.

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Final designs for all supplier-provided AIE shall be submitted for approval not less than 45 days before FAT. All submissions must contain sufficient design and application data to permit evaluation of the design's ability to test or measure the characteristic or parameter with the required accuracy and repeatability. The government has reserved the right to disapprove, at any time during performance of this contract, use of any AIE not meeting the requirements. Resubmission of AIE design documentation for approval on follow-on contract is not required provided inspection characteristic parameters specified in the current technical data package and the previously approved AIE design documentation remains unchanged. The supplier shall provide the contract number and identify previously approved AIE documentation that meets the above prerequisites. All AIE shall be available for use prior to first article submission or prior to initiation of production under this contract.

SQAR-29. Inspection Equipment – Buyer Designated

This contract involves customer property (which could be GD-OTS Garland owned tooling/equipment, customer owned tooling/equipment, and government owned tooling/equipment). Supplier shall establish and maintain a documented system to ensure the control, maintenance and calibration of tooling, jigs, inspection and test equipment on loan from GD-OTS Garland. Supplier shall not modify, add-on, or replace any customer property without Buyer's written authorization. Supplier shall immediately report to the Buyer the loss of any customer property or any customer property found damaged, malfunctioning, or otherwise unsuitable for use.

SQAR-30. Statistical Process Control / Capability Analysis

An SPC plan must be submitted for this part. This plan should include a listing of the characteristics you plan to put under SPC control and SPC techniques you will use for each characteristic. The goal of this plan should be to obtain a cpk of 1.33 for the first lot for each characteristic chosen and a long term goal of a cpk of at least 2.0. This plan should be submitted to the SQA SPC coordinator, prior to the shipment of the first lot of material.

SQAR-31. Special Quality Requirements

The imposition of this SQAR is to alert the Supplier that there are additional Quality Requirements that are detailed under this heading in the PO or other document.

SQAR-32. MIL-STD-1916 Sampling Plan

If sampling is used in place of 100% inspection to accept product, the supplier must use a sampling plan in accordance with Mil-Std 1916, unless a different sampling plan is required by the drawing or the purchase order.

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If the drawing or the purchase order requires a different sampling plan, the drawing or purchase order requirement shall take precedence.

SQAR-33. D1-8007 Sampling Plan

The Supplier shall perform lot sample inspection on items to be delivered under the Purchase Order, in accordance with D1-8007 and the associated appropriate statistical product acceptance requirements. If the inspection reports are required to be submitted, the data shall be reported for each unit requiring inspection in accordance with the sampling plan herein D1-8007.

A mitigation plan is required for those features not meeting requirements. Sample inspection is to be performed as defined in the Purchase Order, supplier technical requirements, and any other documents approved by GD-OTS Garland. GD-OTS Garland reserves the right to disapprove any change to the previously accepted documents.

SQAR-34. Inspection Sampling Plan C=0

Where the drawing purchase order requires a specific sampling plan, the plan specified on the drawing or in the purchase order shall be followed.

Where there is no requirement to use a specific sampling plan and the supplier wishes to use sampling to accept product in place of 100% inspection, the plan used must be statistically valid and must reject the lot when one defect is found (e.g., C=0 plans or Mil-Std 1916). Rejected lots must be 100% inspected prior to release. ANSI ASQ Z 1.4 may be used if the lot in question is rejected on 1 defect regardless of the accept/reject number listed. Any sampling plan that meets the above requirements may be used.

Statistically valid plans are available as existing industry, military or Government standards (e.g., ANSI/ASQ Z1.4, or MIL-STD-1916, etc.).

SQAR-35. Supplier Record Retention – 10 years

Quality records pertinent to acceptance of raw materials, components or end item assembly lots shall be retained ten (10) years after GD-OTS Garland acceptance of the associated end item lots. This includes quality acceptance records for all components and assemblies contained in the end item assembly lot.

Quality in-process records shall be retained for five (5) years after production or as long as residual production inventory is retained in storage, whichever is longer.

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The records shall be readily retrievable and stored in an environment that prevents damage, deterioration, or loss.

Seller shall flow the substance of this clause to its subcontractors, including this sentence, changing the relationship of the parties as appropriate to preserve the intent of the words.

SQAR-36. Ammunition Data Cards

The supplier shall deliver with every shipment an ammunition data card prepared in accordance with MIL-STD-1168, latest revision.

SQAR-37. 100% Inspection Required

The Supplier shall provide 100% inspection data of all features shown on drawings, specification documents, or contained in the Purchase Order for 100% of the items supplied under the Purchase Order. This shall include all applicable notes shown on the drawing. The Supplier shall identify each item individually so that the item can be traced to the inspection data. Where 100% inspection is inappropriate (i.e. destructive testing, plating compliance, painting, etc.) the Supplier shall coordinate with the Buyer the means utilized to provide the required test/inspection data such as using surrogate items (coupons) in lieu of the actual item.

SQAR-38. Process Procedures and Documentation

The Seller shall provide to GD-OTS Garland a Quality Assurance Program Plan (QAPP) in Seller format. The QAPP shall contain the information required to identify how the contractor shall satisfy the specific quality tasks within the Master Subcontract Agreement (MSA)/Purchase Order (PO) and describe the Seller's understanding of all documentation tasks for meeting the contractual requirements.

The QAPP shall include the technical and manufacturing aspects of production, raw materials, facilities involved, and personnel required.

The QAPP shall provide the organizational structure and responsibilities that will influence the quality of the products. Elements which shall be addressed include quality planning, implementation, control and monitoring; significant interfaces that affect products, contracts/contract review, problem reporting and resolution; evaluation of audit results; authorization for deviation to quality policy; control of corrective and preventive actions and supplier quality management.

The QAPP shall be submitted within ninety (90) calendar days after MSA/PO issue and is subject to GD-OTS Garland approval.

SQAR-39. Foreign Object Damage or Debris Prevention (FOD)

Seller shall apply adequate measures to ensure that product is free from burrs, loose items and foreign objects.
Seller shall have an established FOD Plan available for review.

SQAR-40. Purchase Order Review

Upon receipt of the Purchase Order, the Supplier shall contact the Buyer and set up a review of the Purchase Order to assess the quality requirements and other pertinent details with GD-OTS Garland.

SQAR-41. Material Safety Data Sheet (MSDS or SDS)

Subcontractors, suppliers and their sub-tier suppliers that provide Future Combat System Manned Ground Vehicles (FCS MGV) design, fabrication, assembly, test, or manufacturing activities shall meet the requirements of the FCS MGV Environmental Design Guide Document MGV-ENV-003. These requirements apply to Commercial-Off-The-Shelf (COTS) items as well as legacy items and new designs. The subcontractor, supplier or sub-tier shall:

- Certify in writing that they are in compliance with all applicable reporting requirements of the Emergency Planning and Community Right-to-Know Act of 1986 and the Pollution Prevention Act of 1990.
- Submit their annual Toxic Release Inventory reports for review.
- Submit a list of all materials by part used in the design or required for maintenance and repair including, but not limited to, base materials, plating materials, coatings, adhesives and lubricants. Material data shall be submitted electronically using the Subcontractor/Supplier HMMP Data Sheet (MGV-ENV-DAT).
- Submit applicable Material Safety Data Sheets and the required additional information in accordance with FED-STD-313D.

All required data delineated in this requirement shall be presented to the GD-OTS Garland Subcontracts Manager along with First Article Test or First Piece Inspection data.