



G & W Products Supplier Quality Assurance Manual

Table of Contents

Section	Title
1	Introduction/Purpose
2	Part Nomenclature
3	Supplier Approval
4	Supplier Portal
5	Sub-Tier Management
6	Contingency Planning
7	Order of Precedence
8	Requests for Change
9	ITAR
10	Commercial Off the Shelf (COTS) Parts
11	Special Processes
12	Inspection
13	Quality Records
14	Measuring and Test Equipment
15	Counterfeit Parts
16	Conflict Minerals
17	Data Submission Instructions
18	Packaging, Shipping and Receiving Requirements
19	Non-conforming Material
20	Supplier Corrective Actions Request
21	Quality Clauses
Q1	Material Certifications
Q2	Certification of Conformance
Q3	Special Process Certification
Q4	Material/Process Sample
Q5	Shelf Life
Q6	Traceability
Q8	Non-Destructive Testing (NDT)
Q9	Mercury Contamination
Q10	Dimensional Inspection Data
Q11	Production Part Approval Process (PPAP)
Q12	DFAR
22	Record Submission Instructions



G & W Products Supplier Quality Assurance Manual

1.0 Introduction / Quality Requirements

This manual is applicable to all PO, Contracts, Subcontracts, and Statements of Work in which it is referenced. This manual defines the requirements and expectations of all suppliers and sub suppliers who are providing material and/or services to G & W Products. **Acceptance of a G&W Purchase Order constitutes acceptance of all requirements contained herein.**

G&W expects 100% defect free product at receipt from our suppliers. All shipments are subject to receiving inspection; this inspection does not alleviate the responsibility of the supplier to provide parts to G&W requirements with zero defects.

Even after acceptance of a shipment at receipt, G&W reserves the right to return material that proves to be defective for full credit.

2.0 Part Nomenclature

The G&W part nomenclature is as follows: Part Suffix “_” Rev. The Part Number and Revision Level for that part number are separated by a “_” on all system generated paperwork (i.e. Purchase Orders, OSP shippers, etc.) Examples are as follows:

- ABC_ A (Part ABC Rev A)
- ABC_- (Part ABC Rev -)
- ABC (Part ABC Rev “blank”)

3.0 Supplier Approval

An onsite audit may be conducted for new suppliers to determine the performance and effectiveness of the supplier’s Quality Management System. An onsite audit may also be scheduled as a result of chronic quality or delivery issues for an existing Supplier.

Suppliers will be monitored based on performance in the following areas:

- Delivery
- Quality
- Occurrences



G & W Products Supplier Quality Assurance Manual

4.0 Supplier Portal

Key Suppliers may be given access to the G&W Supplier Portal. Through this portal, you will have access to the following supplier applicable items:

- Open and Closed PO's/Releases
- Prints
- Quarterly Supplier Scorecard
- Supplier PPAP's
- Supplier Corrective Actions

5.0 Sub-Tier Management

G&W's suppliers assume responsibility for the purchased item and documentation. If a sub-tier supplier is used to help fulfill this purchasing agreement, the supplier is responsible for:

- Managing the sub-tier supplier
- Flow down requirements of this Supplier Quality Manual and purchasing agreement requirements

6.0 Contingency Planning

G&W requires suppliers to establish a contingency plan to identify and evaluate risk that may impact G&W production.

7.0 Order of Precedence

The following is the order of precedence for all contractual communication between G & W Products and the supplier:

1. Authorized changes to the purchase order
2. Purchase order
3. Supplier Quality Manual
4. Engineering drawing
5. Specifications and standards listed on the engineering drawing

8.0 Requests for Change

The supplier is not authorized to incorporate any changes (including similar material) until formal written approval is received via G&W e-mail and/or purchase order.



G & W Products Supplier Quality Assurance Manual

Suppliers may propose process changes to help reduce cost, improve quality, increase reliability, and process capability of the product. All proposed modifications as listed below, whether permanent or temporary, must be reviewed and approved with written authorization by G&W Quality.

- Supplier driven engineering change;
- Tooling transfer, replacement or refurbishment
- Correction of a discrepancy
- Changing to optional material
- Sub-supplier or material source change
- Change in part processing
- Parts produced at a different location
- Change of ownership
- Significant production rate changes

9.0 ITAR

Technical data packages may include ITAR-controlled drawings, which are subject to export control laws.

10.0 Commercial Off the Shelf (COTS) Parts

Commercial off the Shelf (COTS) parts are commercially available items by design to be procured and utilized without modification (e.g. common electronic components). The Supplier shall provide a certificate of conformance and/or a packing slip as the objective quality evidence where no other objective evidence is available.

11.0 Special Processes

Special processes include, but may not be limited to, any of the following:

- Bonding
- Casting
- Destructive/non-destructive testing
- Heat treating
- Painting/coating
- Plating
- Soldering
- Welding/brazing



G & W Products Supplier Quality Assurance Manual

General Special Process Requirements for suppliers providing items that require special processing shall:

- Maintain training/certification documentation for operators and inspectors in support of the special process being performed and make those records available to G&W upon request
- Operators/inspectors performing NDE, soldering, and/or welding/brazing shall be certified to the proper level as identified in the specifications called out in the TDP of the purchase agreement
- Maintain special process procedures/work instructions with revision control
- Maintain objective evidence of product compliance to the relevant specification(s) governing that special process. Additional requirements for certain special processes may be applicable through the purchasing agreement

12.0 Inspection

The Supplier will inspect, at a minimum, the first piece manufactured for this purchasing agreement to all drawing characteristics, drawing notes and purchasing agreement requirements and will maintain on file a report which includes the following elements:

- Supplier's name and the manufacturing address
- Purchasing agreement number
- Part number, description, and revision as they appear on the purchasing agreement
- Quantity
- Certificate of conformance for the delivered item
- Material certificates/ballistic firing records (where applicable)
- Special process certifications (where applicable)
- Date of last control test and next control test, and, if a control test was performed on the current lot, a copy of the control test report (where applicable)
- Verification of all drawing notes, dimensions, and associated specification requirements, with the requirement and measured values recorded. Variable data shall be recorded with actual values measured for each sample. The supplier shall provide traceability from the measured value to the drawing characteristic (Ex. ballooned drawing of all characteristics, including drawing notes, numbered)
- For assemblies, verification of all component-level (those components identified on the top-level drawing or are identified in the BOM listed on the top level drawing) drawing notes, dimensions, and associated specification requirements, with the requirement and measured values recorded. Variable data shall be recorded with actual values measured for each sample
- Inspector's name, signature, and date (electronic or digital signatures are acceptable)



G & W Products Supplier Quality Assurance Manual

The first piece/first article inspection report will be submitted to G&W as required by the purchasing agreement. G&W reserves the right to request additional copies of first piece/first article and in-process inspection records at any time.

It is recommended where lot sampling is utilized, that 100% of drawing characteristics are inspected in accordance with the C=0 sampling plan below:

	0.010	0.015	0.025	0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5	10.0
LOT SIZE	SAMPLE SIZE															
2 to 8	*	*	*	*	*	*	*	*	*	*	*	*	5	3	2	2
9 to 15	*	*	*	*	*	*	*	*	*	*	13	8	5	3	2	2
16 to 25	*	*	*	*	*	*	*	*	*	20	13	8	5	3	3	2
26 to 50	*	*	*	*	*	*	*	*	32	20	13	8	5	5	5	3
51 to 90	*	*	*	*	*	*	80	50	32	20	13	8	7	6	5	4
91 to 150	*	*	*	*	*	125	80	50	32	20	13	12	11	7	6	5
151 to 280	*	*	*	*	200	125	80	50	32	20	20	19	13	10	7	6
281 to 500	*	*	*	315	200	125	80	50	48	47	29	21	16	11	9	7
501 to 1200	*	800	500	315	200	125	80	75	73	47	34	27	19	15	11	8
1201 to 3200	1250	800	500	315	200	125	120	116	73	53	42	35	23	18	13	9
3201 to 10,000	1250	800	500	315	200	192	189	116	86	68	50	38	29	22	15	9
10,001 to 35,000	1250	800	500	315	300	294	189	135	108	77	60	46	35	29	15	9
35,001 to 150,000	1250	800	500	490	476	294	218	170	123	96	74	56	40	29	15	9
150,001 to 500,000	1250	800	750	715	476	345	270	200	156	119	90	64	40	29	15	9
500,001 and over	1250	1200	1112	715	556	435	303	244	189	143	102	64	40	29	15	9
Indicates entire lot must be inspected																
NOTE: No defects allowed																

- A. AQL 4.0 is recommended, unless otherwise specified, for all characteristics that are used to validate the control of the process.
- B. A single defect shall cause the rejection and 100% inspection of a lot when using sampling plans for final characteristic acceptance.



G & W Products Supplier Quality Assurance Manual

- C. Sampling plans must meet all requirements imposed in applicable specifications, such as those addressing special processes. In such cases the use of standard sampling plans does not apply (e.g., weld visual inspection, nondestructive testing and examination, fastener applications).

13.0 Quality Records

The supplier is responsible for maintaining quality records of inspections and outgoing product quality for all lots of material shipped to G&W Products. These records include, but are not limited to, inspection records, certificates of conformance and control test reports. The supplier is required to maintain these records for a minimum of ten (10) years after completion of the order unless otherwise agreed in writing by G&W. The supplier shall advise G&W in advance of any intended disposition of such records. The supplier is responsible for ensuring all sub-suppliers comply with this requirement.

14.0 Measuring and Test Equipment

The Supplier shall establish and maintain a documented calibration system to verify conformity of all measuring and test equipment (M&TE) such as gages, tools, jigs, fixtures and dies used to verify conformity to requirements. This system shall be compliant with ISO 9001:2015 (or latest version), AS 9100, IATF 16949, or approved by G&W Products. Outside calibration and inspection/test services used shall maintain a system in accordance with a recognized standard such as ISO 10012, ANSI/NCSL Z540, or ISO 17025 and shall address the criteria described in the selected standard.

15.0 Counterfeit parts

Suppliers must have provisions and controls to prevent the purchase and shipment of counterfeit parts to G&W Products

16.0 Conflict Minerals

Suppliers shall report usage of conflict minerals in products and services provided to G&W Products

17.0 Data Submission Instructions

CUI

Classified Uncontrolled Information-requires safeguarding or dissemination controls pursuant to and consistent with applicable law, regulations, and government-wide policies but is not classified under Executive Order 13526 or the Atomic Energy Act, as amended.



G & W Products Supplier Quality Assurance Manual

All CUI data submissions, unless otherwise specified, shall be submitted electronically via G&W's FTP. An email notification should include, in the subject line, the relevant purchasing agreement number and part number. Documentation should not be shipped with the product. The supplier is required to use FTP or Supplier Portal for any and all CUI technical data being submitted. Drawings, performance, and test data, etc. are considered technical data and need to be protected at all times. If you need assistance with creating or using the G&W FTP, please contact your Program Manager.

Non-CUI

Non-CUI documentation is to be sent to the following e-mail address:

Certs@gandwproducts.com or Supplier Portal, as applicable

18.0 Packaging, Shipping and Receiving Requirements

Packaging and shipping to G&W

The supplier shall package and ship product in a manner that provides protection against damage, rust, corrosion and contamination. The use of commercial carriers does not relieve the supplier of the responsibility for properly packaging products to ensure acceptance at the point of delivery.

Pallets being used to ship material to G&W shall be in good working condition and shall not have broken supports or running boards.

Product should be packaged so that the product weight or size does not adversely impact the type of transportation chosen (i.e. Parts may not over-hang skid, no metal to metal contact for painted parts). G&W strongly encourages that suppliers use "Do not stack cones."

An itemized packing list must accompany all shipments. The packing list must be clearly marked to indicate the shipping and receiving locations. A bill of lading or other carrier receipt must be provided for each shipment. The minimum requirements on the packing slip include:

- PO
- Part number(s)
- Quantity of each part shipped

Each skid/container shall be clearly marked with the following:

1. Part Number
2. Quantity
 - a. If multiple part numbers are shipped in the same container/skid, they shall be clearly separated and identified



G & W Products Supplier Quality Assurance Manual

G&W receiving

G&W's receiving hours are as follows for the locations listed below:

1. *G&W Headquarters*: 8675 Seward Road, Fairfield OH: Monday-Friday 7:00-2:30
2. *Seward North Facility*: 8655 Seward Road, Fairfield, OH: Monday-Friday: 7:00-2:30
3. *Stockton Facility*: 6500 Stockton Road, Fairfield, OH: Monday-Thursday 8:00-3:00

G&W can unload both forklift side and forklift rear. All sheets must be loaded on the forklift side. Coils can be loaded either rear or side. The max lift capacity is #6000. No appointment is necessary.

Do not deliver more than 3 days prior to the PO due date without written authorization from G&W Products.

19.0 Non-conforming Material

In the event that supplier's product is found to be (but not limited to):

- Defective (incorrect to purchase order, drawing, or specifications)
- Poor workmanship: Reference G&W's workmanship guidelines
- Damaged (due to incorrect or inadequate packaging)
- A different part received than what was on the purchase order
- Shipped without the required certification, or certification is found to not meet requirements

The supplier shall follow these steps:

1. Identify, prepare containment and sort activity for any product in transit
2. Contain all product at their facility (current in-house inventory)
3. Provide replacement stock/inventory: If replacement of returned material is required, a new invoice must be issued for this material. Replacement stock/inventory must be a 100% certified clean shipment prior to release.
4. Be responsible for expediting charges, to assure timely product delivery (when required)
5. Supplier gives disposition of parts (i.e. rework, scrap)
6. If re-work and/or sorting is required on-site at G&W, the supplier may be charged with the associated costs
7. Supplier to issue credit within five (5) business days of disposition, or G&W will issue a debit within five (5) business days of disposition.



G & W Products Supplier Quality Assurance Manual

Where non-conforming items pose a risk to G&W's production schedule, G&W reserves the right to request the supplier to provide on-site support to screen and/or correct the issue. Upon request, the supplier shall arrange for on-site support within 24 hours of receipt of the request. Failure to provide on-site support authorizes G&W to contract a third-party support at the supplier's expense.

All costs associated with non-conforming material found at G&W, including freight, handling, material replacement, line down-time, inspection, rework, etc., may be charged back to the supplier.

20.0 Supplier Corrective Actions Request

A SCAR (supplier corrective action request) may be issued when deemed necessary for the following occurrences (not limited to): quality non-conformance, repeated early or late delivery, repeated over/under shipments, incorrect items sent, lack of shipping and/or certification paperwork, etc

If a SCAR is issued, the supplier shall complete the G&W provided supplier corrective action (SCAR) form.

A copy of the SCAR will be e-mailed to the supplier, and must be completed and returned within ten (10) working days unless G&W requests a different response time or the supplier requests and is granted an extension. All SCAR's are subject to the review and approval of G&W's QA department representative. In the event a response is not found to be acceptable, the supplier will be notified, and additional information will be requested.

If there is a notification only of a non-conformance, but does not require a formal corrective action, the supplier is responsible in correcting the non-conformance in their process and document the actions taken in accordance with their internal corrective action procedures.

Right of Access

G&W and its customer(s) reserve the right to perform inspection of product, witness testing, and/or review manufacturing and inspection processes/procedures at the supplier's facility or their sub-tier supplier's facility at any point during the execution of this purchasing agreement at no additional cost. In support of these on-site activities, the supplier shall make available any area of the facility or any individual relevant to the subject of the on-site visit. The supplier shall also make available any required inspection equipment, records, drawings/technical data, and/or process documentation.

21.0 Quality Clauses

G&W will identify which of the following clauses to flow down to Suppliers. The applicable clauses will appear on the PO.



G & W Products Supplier Quality Assurance Manual

(Q1) Material Certifications

Each shipment shall include material certifications that indicate the material conforms to the specifications listed on the PO and/or engineering drawing. The certification must contain the manufacturer's name, heat/lot number, measurement test data, method of inspection and country of origin. Certifications should be included with each shipment and e-mailed to certs@gandwproducts.com.

(Q2) Certification of Conformance

The Supplier shall provide a Certificate of Conformance (COC) that shall include the following information at a minimum:

- Supplier's name
- Supplier's address
- G&W's name
- G&W PO number
- Part numbers listed on PO
- Serial / Lot / Container number as applicable
- Process specifications as applicable
- Quantity of parts being certified
- Statement assuring the conformance of the product or process being delivered
- Signature, printed name, title and date of the authorized person designated by the Supplier (electronic or digital signatures are acceptable)

(Q3) Special Process Certification

Each shipment is to include process certifications reflecting the applicable specification number with the latest revision as required by the PO and/or engineering drawing. All additional records and sample test results shall be maintained and made available for review upon request by G & W Products.

Heat Treatment

Supplier shall provide a certification that heat treatment was performed as described on the engineering print and/or PO. When a hardness range is specified, all testing procedures must follow those located on the engineering print and/or PO. The testing results, acceptance criteria, and method for testing must be identified on the certification.

Hydrogen Embrittlement Relief



G & W Products Supplier Quality Assurance Manual

Supplier shall provide a certification that hydrogen embrittlement relief was performed as described on the engineering print and/or PO. All testing procedures must follow those located on the engineering print and/or PO. The testing results, acceptance criteria, and method for testing must be identified on the certification.

CARC Painting

All CARC paint systems applied to G&W product should be free of lead and hexavalent chromium. The supplier shall maintain inspection documentation for G&W's review upon request as follows:

- Name and address of the finisher
- Part number
- Purchasing agreement number
- Signature, printed name, and title of the supplier representative
- Certification date
- List of specifications used in the processing of the paint
- Adhere to the QPL's (Qualified Products List) of each CARC specification as applicable
- Paint thickness of a sample of actual parts for the primer
- Paint thickness of a sample of actual parts for the top coat
- Material expiration date(s) and material lot/batch number(s)

Supplier shall provide a certification that CARC finish was applied per the described specification on the engineering print and/or PO. The certification shall include any testing results, acceptance criteria, and testing methods that were performed, e.g., adhesion, humidity, salt spray, etc.

The facility performing the painting shall include in this certification, unless otherwise specified, the following:

- Name and address of the finisher
- Part number
- Purchasing agreement number
- List of specifications used in the processing of the paint
- Printed name, signature, and title of Supplier's representative
- Certification date



G & W Products Supplier Quality Assurance Manual

Plating

Supplier shall provide a certification that plating was applied per the described specification on the engineering print and/or PO. The certification shall include any testing results, acceptance criteria, and testing methods that were performed, e.g., adhesion, humidity, salt spray, etc.

(Q4) Material/Process Sample

A material test sample is required. The test sample shall be of the same material lot and processed simultaneously, through all processes, with the lot of material that it represents. The size and shape of the test sample will be determined by G&W and identified on the PO (i.e. armor material test coupon).

(Q5) Shelf Life

Items that have a useful life that may expire will require that each container has a label stating the following at a minimum:

- Date of manufacture
- Date of expiration
- Lot or batch number

All lots received with a shelf life will also require a certification stating the following at a minimum:

- Name of manufacturer
- Date of Manufacture
- Date of expiration
- Lot or batch number
- Storage conditions, e.g., temperature, humidity, exposure to sunlight, etc.

Upon receipt of product, a minimum of 75% of the original shelf life must remain valid. Anything under 75% will result in the rejection of the material and the return of the material back to the Supplier.

(Q6) Traceability

Traceability will apply to the material or product being supplied under this PO. All finished product lots must be traceable to raw material heat/lots, and the supplier must maintain material traceability throughout all steps of the manufacturing process including any outside processing.

The level of traceability will follow one of the following levels:

- **Level 1:** Traceability includes a requirement to serialize each individual part being supplied. In this case, the method of serialization will be such that prevents the possibility of duplicate serial numbers.



G & W Products Supplier Quality Assurance Manual

- **Level 2:** Traceability includes a requirement to identify parts to a specific Lot. A “lot” is a group of product that was produced under the same conditions at the same time, and were submitted for inspection as a group.

(Q8) Non Destructive Testing (NDT)

Products that require NDT shall have the results provided on a document, certifying that the appropriate testing was completed in compliance with the standards and specifications that are documented on the engineering drawing and/or PO. The certifications shall contain the following information as a minimum:

- Supplier’s name
- Supplier’s address
- G&W’s name
- G&W PO number
- PO line item number
- Part numbers listed on PO
- Serial / Lot / Container number traceable to the part tested as applicable
- NDT Process specifications
- Applicable acceptance criteria
- Quantity of parts being certified
- Statement assuring the conformance of the product or process being delivered
- Signature, title and date of the authorized person designated by the Supplier.

All radiograph films and ultrasonic screens will be provided to G&W Products with each shipment. The films and screens will be identified so that they are traceable to the actual part tested. Unless otherwise directed on the PO or engineering print, the method of traceability is up to the discretion of the supplier.

(Q09) Mercury Contamination

Supplier shall certify that all items supplied to G & W Products do not contain mercury or its compounds in any form.

(Q10) Dimensional Inspection/Test Data

Documented dimensional inspection reports shall accompany each shipment made to G&W Products. The dimensional data shall include actual measurements, the method of inspection used, and the specification being measured.



G & W Products Supplier Quality Assurance Manual

(Q11) Production Part Approval Process (PPAP)

PPAP elements required for submission will be identified on the PPAP checklist supplied by G&W Products. All requirements, regardless of submission level of the PPAP shall be completed, retained, and made available upon request to G & W Products.

Any product, process, tool, material or supplier changes shall require the supplier to submit a new PPAP.

When required by G&W, parts may require an **AIAG** compliant and/or the most current revision of the AS9102 PPAP submission. The supplier shall maintain a Production Part Approval Process (PPAP) system to ensure parts submitted to G&W meet all requirements. All PPAP submissions are to be a Level 3 submission unless notified in writing by G&W Quality.

This system should utilize the AIAG standard documentation found in the most current Production Part Approval Process (PPAP) reference manual which can be found at www.AIAG.org.

Resubmission Reasons

- a. Process or product changes listed below will require communication with G&W; potential resubmission of PPAP for approval
 - Engineering Changes
 - Tooling transfers, replacement, refurbishment, or additional tooling purchases
 - Use of a process or material other than that used in the previously approved part.
 - Break in production or product produced has been inactive for volume production for 24 months or more.
 - Sub-supplier changes or change of material
 - Change in part processing
 - Parts produced at additional location
 - Documented revision changes to print

(Q12) DFAR

Raw material or the material used to make part(s) purchased on this PO must be DFAR compliant to the most current DFAR standard. It is mandatory that the supplier adheres to most recent revision of the DFAR clause:

DFAR 225.1103(4)



G & W Products Supplier Quality Assurance Manual

PROHIBITION ON ACQUISITION OF UNITED STATES MUNITIONS LIST ITEMS FROM COMMUNIST CHINESE MILITARY COMPANIES (SEP 2006) (a) Definitions. As used in this clause- "Communist Chinese military company" means any entity that is: (1) A part of the commercial or defense industrial base of the People's Republic of China; or (2) Owned or controlled by, or affiliated with, an element of the Government or armed forces of the People's Republic of China. "United States Munitions List" means the munitions list of the International Traffic in Arms Regulation in 22 CFR Part 121. (b) Any supplies or services covered by the United States Munitions List that are delivered under this contract may not be acquired, directly or indirectly, from a Communist Chinese military company.

All specialty metals used to produce parts for G&W Products shall be traceable to their country of origin. Objective evidence verifying the county of origin, i.e. Material certificate of analysis, shall be presented upon request. Reference DFARS 252.225-7008 and 252.225-7009 for the definitions of specialty metals and the permitted countries of origin.

22.0 Record Submission Instructions

All records, unless otherwise specified, shall be submitted to G&W electronically. Records such as material certifications, ASN's, packing slips, BOL's and certificates of conformance may be included with each shipment and shall be e-mailed to G&W prior to the shipment at certs@gandwinc.com.

For technical data, drawings, performance and test data are considered technical data and need to be protected at all times. The supplier should use G&W's FTP to upload any technical data. Please contact your G&W Representative to be set up for FTP.