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DOCUMENT NO. P-900
SUPPLIER QUALITY ASSURANCE MANUAL

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**DOCUMENT NO. P-900
SUPPLIER QUALITY ASSURANCE MANUAL**

APPROVAL

This manual, consisting of pages 1-11, has been prepared in accordance with the policies of Chemring Energetic Devices, and contains the requirements and expectations for all suppliers and sub-tiers within the scope of this manual.

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1.0 INTRODUCTION

1.1 CED Policy and Vision

It is our policy to select suppliers based on their demonstrated commitment to the following principles:

- Prevention of defects rather than inspecting for quality
- Implementing and controlling processes capable of achieving 100% conforming product
- Thorough and effective root cause correction of problems that prevent 100% quality and on-time delivery performance
- Creating and maintaining a safe and environmentally responsible workplace

This policy establishes the framework upon which we can support Chemring Group’s vision to be the leading producer of protection systems and energetic products for the global defense market.

1.2 Scope and Purpose

This manual applies to suppliers and sub-tiers who provides products and/or services to CED.

This manual explains the requirements and expectations to ensure we receive parts and materials that meet the product and delivery requirements specified in our purchase orders.

2.0 QUALITY MANAGEMENT SYSTEM


We, as well as our customers, prefer suppliers who have demonstrated their commitment to managing quality by investing in a systematic approach that meets essential elements identified by industry. Those elements are documented in the ISO-9001 and AS9100 Quality System Management standards.

Given proven levels of quality, delivery, and acceptable pricing, order preference will be given to key suppliers in accordance with the table below.

Order Preference	QMS Registration Status
1st	Registered to AS-9100
2nd	Registered to ISO-9001
3rd	“Self-certified” to either of the above. (CED may audit Supplier)
4th	Compliant to MIL-I-45208. . (CED may audit Supplier)
5th	Neither registered nor “self-certified.” . (CED may audit Supplier)

When required, CED will specify on the purchase order to implement a quality management system.

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3.0 INTERNATIONAL TRAFFIC IN ARMS REGULATIONS (ITAR)

ITAR is a set of United States government regulations that control the export and import of defense-related articles and services on the United States Munitions List (USML).

We require suppliers that receive ITAR Restricted drawings to be ITAR registered with the United States Department of State.

4.0 BRIBERY AND CORRUPTION

CED will not transact business with any suppliers suspected of bribery, “kickbacks”, or other such unethical behaviors. See CED Document P-201 Terms and Conditions. The Supplier Code of Conduct is automatically attached to every Purchase Order.

Suppliers shall not engage in any action that may reasonably be termed “bribery” or “corruption” and shall immediately notify CED Purchasing if the supplier becomes the target of such investigations.


5.0 GOVERNING DOCUMENTS

In the course of business with CED, you may find the documents listed below to be helpful. In addition to this manual, each of these documents is located on our website on the Supplier page:

www.chemringenergeticdevices.com

Document title	Purpose
<ul style="list-style-type: none"> Q-208 Approved Processor 	<p>Lists processors approved by CED for the indicated services. If a processor is not listed in the document, the processor is not approved for use on a CED purchase order.</p> <p>As needed, our purchase orders will specify when processors approved by <i>our</i> customers (e.g. Boeing, Lockheed Martin) are required.</p>
<ul style="list-style-type: none"> Form 477 Supplier Waiver Request 	<p>This form must be used if you want CED to consider accepting nonconforming conditions.</p>
<ul style="list-style-type: none"> P-201 CED General Terms and Conditions 	<p>This document lists basic contract provisions that flow down to subcontractors and suppliers. Additional terms and provisions that may apply are defined in the document listed next.</p>
<ul style="list-style-type: none"> P-202 Additional Terms and Provisions to Purchase Orders 	<p>This document lists additional terms and provisions that CED purchasing may include on purchase orders.</p>
<ul style="list-style-type: none"> P-900 Supplier Quality Manual 	<p>This manual provides an explanation of CED’s policies regarding important issues of supplier quality.</p>

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6.0 REQUESTS FOR QUOTE (RFQ)

We may request quotes from you based on our needs, and assessment of your capability and/or quality and delivery history. If we request a quote from you, as early as practical, we will provide...

- Complete technical information in pdf drawings, and possibly 3D IGS model files
- Processing requirements
- Quantity needed and desired delivery date
- Inspection data requirements
- Flow-down requirements from our customers
- Applicable Defense Federal Acquisition Regulations (DFARs) citations
- Access to CED governing documents
- CED contact information

If you accept our RFQ, you agree to provide a timely quote of your best price and to deliver 100% on-time and 100% conforming parts.

7.0 AWARD OF PURCHASE ORDERS


We understand that often there is a high correlation between the best quality and delivery and the highest unit price. We also understand that the lowest unit price often results in significant additional costs of poor quality. We will issue purchase orders based on a combination of the following:

- Our assessment of one supplier's capability compared to others
- Best quality and delivery history
- Best price and/or delivery
- Regulatory requirements from our customers

Your acceptance of our purchase order is your explicit agreement to:

- To use a competent staff to deliver 100% conforming parts on the agreed date for the agreed price,
- Deliver product that is able to perform to its designed or intended purpose without causing unacceptable risk of harm to persons or damage to property,
- Ensure that persons / employees are aware of their contribution to product or service conformity, their contribution to product safety, and the importance of ethical behavior,
- To flow down to sub-tier supplier the applicable requirements in the purchasing documents, including key characteristics,
- Be responsible for lost or damaged product,
- Prevent the use of counterfeit parts.

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8.0 CHANGES TO PURCHASE ORDERS

If we need to change our purchase order, we will immediately contact you. We understand changes may require us to pay more and/or accept a later delivery date. When accepted by you, our revised purchase order becomes the requirements against which your performance will be measured.

If you want to make a change to our purchase order, we request that you immediately contact us. Depending on the reason, you are requesting the change, we reserve the right to 1) accept the change outright with no financial penalty or negative metric or 2) to assess a financial penalty and/or record a negative metric.

9.0 RIGHT OF ACCESS

We reserve the right to...

- Send to your facility a source inspector to verify that our order meets our criteria to be released for shipment. Release by our source inspector does not limit our right to return parts determined to be nonconforming by our receiving inspectors.
- Perform audits of your quality management system, especially those processes and procedures related to our purchase orders.

We will notify you of our intention to perform source inspection or an audit and work with you to make mutually acceptable arrangements.


All orders are subject to be reviewed by CED and/or authorized customer and/or government representatives and Regulatory Authorities. Unless you are otherwise notified, inspection or release of product prior to shipment from your company is not required. A copy of the purchase order will be furnished to your Government representative upon their request.

The supplier and sub-tiers shall allow the Government and Regulatory Authorities access to their facilities, personnel and safety program documentation. The supplier and sub-tiers shall allow authorized Government representatives to evaluate safety programs, implementation, and facilities.

10.0 APPROVAL OF PROCESSES

Unless otherwise specified on the purchase order, all processing shall be performed by CED approved processors as listed in the current revision of CED Document Q-208.

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11.0 CERTIFICATE OF CONFORMANCE

A Certification of Compliance with applicable specifications shall be submitted with shipment of all orders. Separate certifications are required for each lot. The certificate of conformance shall include the following information:

1. Name and address of manufacture
2. Name and address of customer
3. Purchase order number
4. Packing list number
5. Contractors lot/job number
6. Complete part number and quantity
7. Drawing number and revision
8. Specification and revision
9. Manufacture's lot, heat batch, date code, and/or serial number (if applicable)
10. Indicate if goods are customer furnished
11. Sub-tier certification/lot/batch number
12. Signature
13. Title
14. Date

Each shipment must be accompanied by one legible and reproducible copy of a material certification that the items were produced: (1) from materials furnished by CED for the production of such items, or (2) from materials for which the supplier has available for examination specific data or other objective evidences of conformance to applicable specifications, or (3) materials produced meet the specifications applicable to CED's order. The certificate must contain the signature and title of an authorized representative of the supplier and be traceable to the manufacturer and production lot or date code.


Certification as to physical and actual chemical properties from the mill or independent laboratory shall be submitted with all orders. Separate certifications are required for each lot and must be traceable to origin and lot or date code.

All parts requiring radiographic certifications shall be submitted to a Government and CED-approved X-ray laboratory and processed in accordance with applicable CED and Government standards. Findings shall be reported on an appropriate form, including the name of the reader and the signature and title of an authorized laboratory representative. The X-ray film and two (2) legible and reproducible copies of the report must accompany the material.

12.0 FIRST ARTICLE INSPECTION REPORTS

Contractor shall provide a first article inspection report in accordance with AS9102 current revision. For production breaks greater than two years, the seller shall conduct a full first article. If the deliverable is an assembly, this inspection shall include all piece parts that makes the up the assembly. Contractor shall include a copy of the first article inspection (FAI) with the shipment of the item. The contractor shall submit a delta first article when there are changes to the contractors tooling, facilities, or processes.

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13.0 NONCONFORMING PRODUCT

Seller shall immediately notify the buyer with the pertinent facts if seller becomes aware or suspects that items delivered to CED were nonconforming. Seller shall segregate and positively control suspect nonconforming material until properly dispositioned.

CED approval is required for dispositions of use-as-is or repair for acceptance of nonconforming products. The seller is required to fill out form 477 (Request or Deviation or Wavier), and must be approved by CED prior to shipping product that does not meet CED's requirements. Any deviation is your responsibility and the high costs associated with a "Use-As-Is" or "Repair" will be borne by you. Under exceptional circumstances and on a case-by-case basis, CED will consider a waiver request, but is under no obligation to approve the request or to accept nonconforming conditions. All approved waivers must be shipped along with the shipment. The supplier score card may be impacted. Typically, CED does not have MRB authority.

When nonconformances are identified, the supplier or sub-tier may be required to respond to an external corrective action when requested. Initial containment action at the supplier or sub-tier location is required upon notification.

14.0 EXTERNAL CORRECTIVE ACTION REQUESTS (ECARs)

It is vital to remember that, while corrective actions are not wholly unexpected, they are a large source of poor quality costs. As such, it is crucial to take full advantage of the time and effort expended to correct a problem.

Normally, we request corrective action for:

- Repetitive nonconformities for the same issue,
- Expensive, single occurrence nonconformities
- Nonconformities that suggest serious flaws in the supplier's quality management system

Upon receipt of an ECAR, we expect the supplier to:

- Implement immediate containment actions to prevent further escapes or migration of the problem,
- Thoughtful investigation and analysis into the root cause(s) of the problem, using tools such as 5-Why, 8-D, or Fishbone diagrams.
- Within thirty days, implement a plan to eliminate the root cause(s). Legitimate extensions will be granted if requested well within the thirty day period.

When done properly, corrective action decreases the likelihood of future problems and provides insight that may be leveraged on other processes or products to *prevent* problems.

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15.0 RECORD RETENTION

Records shall be maintain verifiable objective evidence of all inspections and test performed, results obtained and dispositions of non-conforming articles. These records shall be identified to associated articles, including heat and lot number of materials, unit or lot serialization and made available to customer and/or Government Representatives upon request and shall be retained in a safe, accessible location for a period of ten (10) years after date of delivery.

16.0 STATISTICAL TECHNIQUES

Unless specified on the purchase order the use of statistical techniques for products acceptance and related instructions for acceptance by the organization is not required. When statistical techniques are required, Evidence must be provided to CED that key characteristics on this purchase order be statistically controlled to a Cp_k and $Cp > 1.33$.

17.0 COUNTERFEIT PARTS OF MATERIALS AND TRACEABILITY

The supplier and sub-tiers shall prevent the use of counterfeit parts (see the AS9100D / ISO 9001 standard).

Under no circumstances shall the supplier and/or sub-tiers furnish or cause to be furnished counterfeit or suspect counterfeit parts or materials. Suppliers and/or sub-tier suppliers shall only purchase parts and materials used to satisfy the CED purchase order through the Original Component Manufacturer (OCM) or Original Equipment Manufacturer (OEM) or through an OCM/OEM Authorized Distributor chain. Parts and materials shall not be acquired from independent distributors or brokers unless approved in advance and in writing by CED. Suppliers shall flow down the contents of this requirement to sub-tier suppliers of parts and materials used to satisfy the CED purchase order.

Affidavit to manufacturer, lot and or date codes shall be maintained, as specified in this document for Certificates of Conformance, for all parts, whether electronic or mechanical, and materials.

This requirement applies whether or not the exact paragraphs are called out on the purchase order. Seller shall immediately notify the buyer with the pertinent facts if seller becomes aware or suspects that items delivered in accordance with the purchase order are or contain suspect or confirmed counterfeit items. Counterfeit, or suspect counterfeit, parts shall be controlled to prevent reentry into the supply chain.

18.0 FOREIGN OBJECT DEBRIS PROGRAM

The supplier shall assure that work is accomplished in a manner preventing foreign objects or materials from entering and remaining in deliverable items.

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19.0 NOTIFICATIONS

The supplier shall notify CED in advance if work is outsource to other manufactures to produce any line item on a P.O. The contractor shall provide in writing of any change(s) to tooling, facilities, materials, or processes at the contractor or contractor’s sub-tier that could affect CED’s contracted product. This includes, but not limited to fabrication, assembly, handling, testing, facility, or new sub-tier suppliers.

20.0 Design approval

If required, the purchase order will specify the needs of any required test specimens, coupons inspections, verifications, investigation, or auditing for design approval.

21.0 PACKAGING

All parts must be packaged and handled in a manner to prevent damage in handling and transit.

22.0 QUALITY AND DELIVERY REPORTS

Each month CED will report to each key supplier the previous month’s.

- Percentage of conforming parts/lot
- Percentage of on-time deliveries

(Key suppliers are those suppliers that together supply at least 90% of all of the machined parts we order).

We expect each supplier to track this same information and understand that there may be small differences in the results due to differences in such things as tracking tools, assumptions, and time periods. We will work with the supplier to address significant differences and, to the extent practical, establish metrics based on the same tracking tools, assumptions, and time periods.

Although supplier development actions may be taken for “Yellow” performance, if, a supplier’s quality or delivery performance is on “Red” as defined by the table below, the supplier shall be contacted by whatever means deemed best to encourage better performance, including issuing an External Corrective Action Request, a letter of warning, monthly report cards, or a reduction in the scope of business.

We expect all key suppliers to maintain, at minimal, an average of >95% for Quality rate, >85% On-Time Delivery and an overall combined performance >85%.

Color	Supplier Performance Average
Preferred	> 95% Quality and > 85% for OTD, Overall combined performance >85%
Acceptable	90% to 95% Quality and 80 to 85% for OTD, Overall combined performance 75% to 85%
Not Acceptable	<90% Quality and <80% OTD, Overall combined performance <75%

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