

DDQRS

Diehl Defence Quality Requirements for Suppliers

English Version

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Dieses Dokument wurde elektronisch erstellt und freigegeben, wird daher nicht unterschrieben.

1 Introduction

These "Quality Requirements for Suppliers" apply to production material supplied by the Contractor, "extended workbench" services (e.g., heat treatment, coating) and development services.

The respective valid version is available on the Principal's website:

<https://www.diehl.com/defence/de/presse-und-medien/downloadcenter/#einkaufsdokumente>

This document was prepared by the Principal's internal departments, "Supplier Quality Management", in coordination with the purchasing department. In the event of questions or ambiguities, the responsible purchaser shall be at the Contractor's disposal. Quality issues, also related to this document, can also be clarified directly with "Supplier Quality Management".

2 Validity ranking

This document applies to all locations of Diehl Defence GmbH & Co. KG. In the event of conflicting requirements between this and other documents, the latter shall apply in the following descending order of precedence, unless otherwise contractually agreed:

- Product-related documents, which include
 - Order
 - Delivery specification
 - Specification
 - Drawing
 - Material specification
- SOW (Statement of Works)
- Quality requirements for suppliers (DDQRS)

General quality requirements for suppliers (DDQRS)

3 Quality management system of the Contractor

The Contractor shall, at a minimum, have, operate and maintain a certified quality management system in accordance with ISO 9001, as amended from time to time.

The Contractor's quality management system certificate must be issued by a certification company supervised by a national accreditation body.

In the event that his quality management system certificate is suspended or has expired, the Contractor undertakes to inform the Principal of this within 14 days. After renewal of his quality management system certificate, the Contractor shall promptly and without being requested upload the certificate to the Principal's supplier portal or send a copy to the responsible purchaser of the Principal.

If required by contract, the Contractor shall observe and comply with NATO standards AQAP 2110 and 2210.

4 Subcontractor

If the Contractor awards contracts to Subcontractors, he shall ensure that the requirements of this document are also complied with by the Subcontractor. In the case of non-certified Subcontractors, the Contractor shall ensure quality based on his system responsibility.

If official quality testing is required in the order, the requirements of NATO standard AQAP 2110 applicable to this shall be observed and also forwarded to Subcontractors.

5 Quality audit

The Contractor shall allow the Principal to determine by means of audits whether his quality processes and quality assurance measures meet the requirements of the Principal. In exceptional cases, the Principal also reserves the right to audit Subcontractors. The Contractor shall grant the Principal and – to the extent necessary – his customers access to all operating sites, testing facilities, warehouses and adjacent areas, as well as inspection of documents relevant to quality. In this context, necessary and reasonable restrictions by the Contractor to safeguard his trade secrets are accepted. The Principal shall inform the Contractor of the result of these audits. If, in the view of the Principal, measures are necessary, the Contractor undertakes to draw up an action plan, to implement it in due time, and to inform the Principal thereof. The Principal reserves the right to verify the measures introduced by the Contractor on site as part of a post-audit.

6 Document verification

Upon receipt of the order, the Contractor shall check all documents and data provided by the Principal for their completeness, validity and applicability, thereby ensuring that any further use of documents and data that have become invalid is excluded. Missing or contradictory information must be made known to the Principal without delay. The Contractor must ensure that documents and data are respected by all concerned parties. In accordance with this procedure, Subcontractors must also be included.

7 Manufacturability Analysis

In the course of reviewing a request from the Principal, the Contractor shall, upon receipt of all technical documents, such as specifications, drawings, parts lists and CAD data, review the feasibility on the basis of a manufacturability analysis. The manufacturability analysis shall include the following aspects:

- Manufacturability and testability of the product, taking into account the intended manufacturing processes or production and test equipment
- Suitability of parts and materials used in the product
- Prevention, detection and removal of foreign bodies
- Handling, packaging and preservation

The Contractor shall inform the Principal without delay of any defects and risks identified in the process, as well as of any opportunities for improvement.

8 First article inspection

The Contractor shall conduct a first article inspection (FAI) on parts of the first delivery order.

Following provisions shall apply for the first article inspection report:

Case 1 first article inspection to be included:

The Principal requests a first article inspection report from the Contractor with the order. The Contractor carries out the first article inspection in accordance with EN 9102 and inserts the first article inspection report in the first article delivery.

Case 2 first article inspection supplier internal:

The order does not contain a requirement for the delivery of a first article inspection report. The Contractor carries out the first article inspection on his own responsibility and documents it in a first article inspection report. Supplier's own forms are allowed for this purpose. The Principal has the right to request the Contractor to issue the first article inspection report.

From an interruption period of production of 24 months, the Contractor has to carry out a repeated first inspection. In this regard, aforementioned provisions of this section shall apply (Case 1/Case 2).

First article parts shall be clearly marked and numbered (only in Case 1) to ensure assignment of the parts to the first article inspection report and to the test results. The marking must be made either on the packaging or be easily removable from the first article parts without leaving any residues or causing any damage.

The Principal reserves the right to accompany the first article inspection at the Contractor's place of business. The Contractor shall assure the provision of timely information regarding the date.

Customary COTS (Commercial Off The Shelf) units, standard components, design samples and experimental samples are exempt from the obligation of being subject to a first article inspection, unless otherwise contractually agreed between the Principal and the Contractor.

9 Subcontractor

The software Contractor shall translate the system requirements of the system specification into a software specification and shall demonstrate conformance to it. Software development must be carried out according to standardized methods. The Contractor shall support software audits and shall provide the Principal with insight into both constructive and analytical software quality management.

The Contractor undertakes to maintain and uphold a software configuration management system as the technical and organizational administration of all software artifacts with unique version and revision history management.

Furthermore, the Contractor shall ensure that these requirements are passed on to and complied with by his Subcontractors.

10 Marking, identification and traceability of the delivery items

The Contractor must ensure the traceability of material, as well as data and results from manufacturing and testing processes of the products supplied by him, by establishing and applying a suitable process. Serial numbers, batch codes, date codes, etc., can be used for traceability. For electronic components (components or assemblies), traceability to the original manufacturer must be ensured.

If material with a limited period of use is utilized, the Contractor shall apply an appropriate procedure for monitoring such material.

Unless otherwise agreed, quality records shall be retained for at least 10 years.

11 Monitoring of measuring and test equipment

The Contractor shall maintain an inventory of measuring and test equipment that includes the type of measuring equipment, its unique marking, location, calibration or verification method, frequency of calibration, and acceptance criteria.

Calibration of the test equipment is performed periodically and must be carried out under suitable environmental conditions.

Contractors must include the test and measuring equipment provided by Diehl Defence in their own test equipment monitoring and implement the necessary measures for monitoring and calibration.

12 Production process

Before the start of series production, the Contractor shall ensure that

- a) the employees assigned to the production of the delivery item attain and maintain the required qualification,
- b) manufacturing processes and equipment are suitable for the intended use,
- c) the manufacturing processes deliver continuously stable results,
- d) the manufacturing processes and the equipment required for them are approved,
- e) manufacturing equipment is subject to adequate maintenance and regular inspection,
- f) no entry of foreign bodies can occur during and after production,
- g) suitable means of transport for internal transport are available and in use.

The Contractor shall document the following as specified for the delivery item

- h) operations from material deliveries to shipment, including all manufacturing and inspection steps (including subassemblies, if applicable) in a process flow diagram,

i) checks and tests in a control plan following EN 9145, which shall contain at least the following information:

- Contractor's name/location designation
- part number(s)
- part name/description
- status of technical changes (e.g., revision level)
- process name/description of the operation
- work step/number of the process step
- special features/key characteristics relevant to the product or process
- specification/tolerance of the product or process
- evaluation method/measurement method
- amount of samples and frequency of sampling
- control procedure
- records

j) process steps that require specially qualified personnel.

If the Contractor is not himself the manufacturer of the delivery item, he shall ensure compliance with the above-mentioned requirements by means of suitable monitoring of the processes at the Subcontractor's place of business.

13 Construction Deviation/Special Releases

If the Contractor discovers a non-conformity in a delivery item prior to delivery and if this cannot be brought into the target condition by suitable reworking, the Contractor can apply to the Principal in writing for a special release. Therefore, the Contractor shall notify the Principal of the non-conformity at least 10 working days before the planned delivery date. The Principal shall provide the Contractor with a written request form for a special release, which the Contractor shall complete and return.

Delivery is permitted only with a special release approved in writing.

Within the scope of the special release, it shall be incumbent upon the Principal to determine whether the delivery items in question with construction deviation are

- a) temporary with an obligation on the Contractor to rework
- b) temporary with an obligation on the Contractor to subsequently deliver conforming parts
- c) permanently accepted
- d) to be rejected.

Delivery shall be deemed to have been made only upon final acceptance of the construction deviation by the Principal or upon successful replacement/reworking.

The special release must be enclosed with the delivery.

14 Fake Parts

In order to ensure that no counterfeit components are delivered, the Contractor undertakes to apply appropriate procedures and measures. At a minimum, the Contractor shall take the following measures:

- Procurement from the original manufacturer or authorized supplier
- Application of testing methods and inspection to detect counterfeit parts
- Training and instruction of personnel regarding the recognition and avoidance of counterfeit parts
- Tracking reports from external sources on counterfeit parts/providers of such parts

In addition, the Contractor must ensure that his Subcontractors also use appropriate procedures and measures to detect and prevent the distribution of counterfeit components. The regulations to prevent the delivery of counterfeit components shall also apply to parts that the Contractor installs in bigger assemblies and delivers to the Principal.

15 Obsolescence

The Contractor shall implement and use a process for the prediction, early detection and elimination of obsolescences. In particular, the Contractor shall query his Subcontractors about obsolescence status at suitable intervals, but at least every six months. In the event of discontinuations or changes to components notified by the manufacturer, the Principal's Purchasing Department shall be informed immediately with the manufacturer's letter of discontinuation.

16 Deliveries, packaging and shipment

Handling, packaging and preservation of the delivery item must be carried out in such a way that quality reductions due to environmental influences during transport and storage are excluded. This also includes the entry of foreign bodies. The packaging is part of the delivery item and is therefore also included in the quality assessment.

General or individual packaging specifications must be observed. The Contractor shall, if requested by the Principal, propose the packaging for approval by the Principal. Notwithstanding the foregoing, the Contractor shall remain responsible for the suitability of the packaging.

17 Deliveries with deviations, 8D process

If the Principal detects defects in a delivery item, he shall notify the Contractor thereof by means of a complaint report. The Contractor shall thereupon without delay take immediate measures and determine whether current production, stock goods or previous deliveries are also affected. The traceability must identify the delivery item or at least the affected production lots. The Principal must also check whether other material numbers could be affected by the error pattern. The Contractor shall perform a structured root cause analysis using appropriate methods such as Ishikawa or 5 Why to determine both the cause of the occurrence and the cause of the non-detection of the failure. Corrective measures must be taken and documented for the affected part numbers prior to the next delivery.

Note:

Blanket or purely organizational measures, such as "employee training", are generally not accepted by the Principal as the sole measure. The Contractor undertakes to implement poka-yoke measures if this is technically possible and economically justifiable.

If requested by the Principal, the Contractor shall prepare an 8D report. The following deadlines shall apply to the return of the 8D report:

D (Dimension) 1 - Team

D 2 - Problem description

D 3 - Immediate measure(s)

► up to D3 at the latest after three working days from the request by the Principal if one of the following cases applies:

- Further parts of the affected material number are currently in production
- Parts in the Principal's inventory could be affected by the error pattern
- Another delivery with parts of the affected material number is already on its way to the Principal or has already been delivered

D 4 - Error cause(s)

D 5 - Planned shutdown measure(s)

D 6 - Introduced shutdown measure(s)

► to D6 after ten working days at the latest

D 7 - Prevent error repetition

D 8 - Appreciate team success

► the fully completed 8D report after 20 working days at the latest

The 8D report must contain the necessary information for the identification of the defective delivery items (delivery note numbers, serial or batch numbers).

18 Information regarding changes

The Contractor undertakes, prior to

- a) Change of a Subcontractor
- b) Relocation of production sites
- c) Modification of test methods/equipment
- d) Relocation/transfer of production facilities at the site
- e) Change in manufacturing processes, procedures and materials (also at the Subcontractors' places of business)
- f) Partial or complete relocation of work/production parts to Subcontractors

to obtain approval from the Principal and to coordinate and implement with the Principal the necessary quality measures, including risk mitigation.

In the cases mentioned above, at least a partial or complete new first article inspection must be carried out in accordance with EN9102.

The Contractor must notify the Principal of any change in packaging or transport. In addition, the Contractor must immediately notify any significant changes to the ERP system (Enterprise Resource Planning System) as well as any changes in the field of shareholders or in the management.

19 Defect-free deliveries/supplier development programs

The Contractor is committed to the zero defect policy and to ensuring that all (commercially reasonable) measures are taken to ensure the zero defect target. The Contractor agrees to set the zero defect target or, if this target cannot be achieved in the short term, to establish a corresponding step-by-step plan for measurable target values with the Principal in a quality agreement.

The quality agreement defines the quality objectives, as well as the operational quality measures by the Contractor in the case of non-achievement of these objectives. In the event of inadequate delivery quality, the Principal shall require the Contractor to take further quality measures with regard to processes and tests in order to improve the delivery quality in the short term and on a sustained basis. The Contractor undertakes to identify and implement appropriate optimization potentials and improvement proposals within the scope of a joint supplier development project.

20 Management of operational risks

The Contractor undertakes to implement a process for the continuous monitoring and control of operational risks. This process includes, among other things, establishing risk assessment criteria (probability of occurrence, severity of impact), as well as defining and implementing measures to mitigate risks that exceed a defined acceptance threshold. The Contractor shall document the definition of criteria for risk assessment, the evaluation of the criteria, as well as the measures to mitigate the risks, in a suitable manner, e.g., in FMEA's (Failure Mode and Effect Analysis). The Principal reserves the right to inspect such documents at the Contractor's place of business if necessary. In the event of a complaint, the Contractor shall reassess the risks and update the relevant documentation.

21 Supplier Evaluation

The supplier rating is made up of the Contractor's measurable qualitative performance (quality score) and his measurable logistical performance (on-time delivery score), as well as other criteria, including the "soft facts" (quality performance, support/technology/innovation, purchasing/logistics and flexibility/service). The overall result of the supplier evaluation is calculated from the two key figures and the additional criteria mentioned above ("soft facts"). The Contractors are regularly informed about the evaluation result. For this purpose, the evaluation results are sent by e-mail to the supplier's central contacts.

In the event that planned results in the supplier evaluation (in particular, the quality key figure and the on-time delivery key figure) are not achieved, the Contractor shall take measures to ensure these in the future. If the failure to achieve planned results is caused by a Subcontractor's performance, the Contractor shall define an action plan with his Subcontractor and implement it.