ZKL GROUP
SUPPLIER QUALITY MANUAL

Revision: 00
Effective from: 1.9.2020

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1. INTRODUCTION

1.1 Scope and validity

This Manual defines the basic requirements for the quality, safety and reliability of products (hereinafter „Product Quality“) supplied to ZKL Group companies, which for the purposes of this Manual are only:

- ZKL Brno, a.s.
- ZKL Klášterec nad Ohří, akciová společnost
- ZKL Bearings CZ, akciová společnost
- And other ZKL Group companies referring to this document in the contract / order.

The aim of this Manual is to define and transfer onto all ZKL Group suppliers all the specific requirements of ZKL Group, the EN ISO 9001 standard in respect of the quality management system, and if applicable the requirements of the ISO/TS 22163 standard. Suppliers are required to assure proper compliance with the Manual requirements by all their subcontractors in full scope. ZKL Group is authorised to review compliance with the rules and requirements arising from the Manual under the conditions agreed (see article 3 and 9).

1.2 Partnership with Suppliers

One of the main goals of the ZKL Group is to assure the quality, safety, and reliability of the manufactured products for its customers, and the relating continuous improvement. This goal can only be achieved by a coordinated approach in all processes within the entire supplier chain.

The ZKL Group believes that applying the requirements specified below is the only way to meet its goals, and therefore the procedures defined in this Manual are mandatory for all ZKL Group suppliers. The ZKL Group expects its suppliers to co-operate in all areas of quality assurance in respect of the products they supply. Failure to comply with the requirements set out herein may (among others) result in the termination of the existing and/or future cooperation with the ZKL Group companies.

1.3 Supplier´s Responsibility for Quality

All ZKL Group suppliers assure that the products supplied to the ZKL Group are free of any defect and comply with the agreed requirements, technical specifications, and technical documents and meet the product quality requirements. The suppliers assume full responsibility for the:

- quality of their products;
- suitability of their products for the purpose set out by the ZKL Group;
- quality of products and processes of their subcontractors;
- assurance of product compliance with the technical specifications defined;
- assurance of documents required by the ZKL Group.

2. QUALITY SYSTEM

ZKL Group companies require their suppliers to have a valid quality system certification to EN ISO 9001, and/or ISO/TS 22163 if applicable, granted by an accredited company. A supplier that is not certified shall submit to the relevant ZKL Group company its plan to obtain certification within one year as maximum of the commencement of its cooperation with the ZKL Group, or to provide evidence that the requirements set out in this Manual have been met, or else to present a plan to implement basic ZKL Group requirements for the quality management system – see the requirements indicated herein.

2.1 Document Control

Every supplier is required to observe the internal effective controlled documents. All documented information relating to the proving of compliance with the ZKL Group requirements shall be controlled in conformity with the standard EN ISO 9001, and/or ISO/TS 22163 if applicable. The documented information must be:

- legible;
- easy to identify;
- available and suitable for usage;
- protected (such as against loss of confidentiality, unauthorised usage, against unauthorised changes, etc.);
- easy to trace;
- internally controlled, reviewed, approved, and updated;
- archived and destroyed (in conformity with the statutory, contractual, or other requirements).

Suppliers are required to have a document change control system in place, i.e. a system of activities for the drafting, discussing and approving or disapproving proposals for a change of the effective technical documents.

2.2 Identification and Traceability

Suppliers shall keep a system in place enabling product identification in every stage of the work in progress, including identification of input materials, tools and personnel involved in the product manufacture.

Suppliers shall assure in a proper way that no material, raw material, semi-product or finished product is interchanged during manufacture. If there is a doubt about the proper marking, materials, raw materials, semi-products or finished products may not be used.

2.3 Control of Monitoring and Measuring Instruments

Suppliers shall assure that the control, measuring, monitoring and testing instruments are suitable and able to continuously ensure compliance with the measuring requirements specified, in a way to always take the right decision for the product quality control and acceptance, i.e. at least:

- identification of measuring instruments;
- records about measuring instruments;
- calibration plan for measuring instruments;
- procedure for the inspection of measuring instruments;
- protection against damaging, changes of setting, deterioration of measuring instruments;
- archiving of documented information about the calibration/inspection of measuring instruments.

2.4 Control of Non-Compliant Products

Suppliers undertake to have in place a procedure for the detection, identification, marking, storing, and keeping of documented information about products non-compliant with the ZKL Group requirements. This procedure shall:

- prevent any unintended or inadequate usage of the product;
- ensure removal of any non-compliant product from the manufacturing process;
- prevent delivery of any non-compliant product;
- make an analysis of the product defect or non-compliance with the ZKL Group requirements;
- initiate measures ensuring that the defect will not occur again.

Any product the condition of which cannot be identified or assessed with certainty as compliant shall be treated by the supplier as non-compliant.

3. APPROVAL OF THE FIRST ARTICLE

For certain products supplied the ZKL Group requires an inspection of the product quality and release of a production batch in the form of take-over, or a delivery of the first article with the required documents - FAI (First Article Inspection). The ZKL Group may perform the first article inspection at the supplier´s premises upon agreement with the supplier.

3.1. First Article Inspection - FAI

The supplier shall be informed about the required FAI by an order, or a contract/agreement, sent by the relevant ZKL Group company for a specified product. Subsequently, the supplier shall perform an internal verification of preparedness, such as in the form of an internal take-over of the first article. In the preparation and during the take-over, the supplier is required to provide maximum synergy. The basic requirements of the ZKL Group for FAI are given in the order, or a contract/agreement, and usually include the following:

- to present general documents for the product (technical and manufacturing documents, etc.);
- to present documents for the materials used (certificates 3.1 to EN 10204) and test reports;
- to present qualification of inspectors for NDT tests;
- to present protocols for special processes (heat processing, surface finish, etc.);
- to present documents for the product (dimension protocol, type test, control plan, etc.).

Further, the FAI includes:

- an inspection of the product and verification of the product identification;
- an inspection of the process.

4. CONTROL PLAN

The supplier shall have a Control Plan, or else a Control Plan as part of the Technological Procedure for the products, defining the method of control and/or testing of the product in the different stages of manufacture, and present it upon request of the ZKL Group company. The Control Plan and/or Technological Procedure must include an inspection and/or testing of all significant characteristics of the product to the technical specification, standards and ZKL Group requirements. The Control Plan and/or Technological Procedure must include but is not limited to the following:

- the inspected feature;
- specification and tolerance;
- method of inspection;
- inspection frequency;
- number of articles to be inspected;
- persons responsible for the inspection;
- instructions of the inspection recording;
- a plan of actions and corrective measures in case the specification is not met.

5. DEVIATION AND CHANGE CONTROL

Suppliers to the ZKL Group may not deliver a product that does not comply with the requirements for quality of the delivered product.

5.1. Deviation

In cases where the supplied product shows a deviation from the ZKL Group requirements, or where the supplier knows in advance that the product will not reach the required quality, the supplier shall ask the relevant ZKL Group company for an approval with a deviation from the valid documentation in a sufficient advance before the planned date of delivery and in writing. In the request, the supplier shall describe the reasons for the deviation and its scope and give the following information:

- date of the deviation occurrence (from – to) and /or the number of pieces;
- order number;
- number of the production batch or product serial number;
- information about all the risks relating to the deviation;
- description of the cause, corrective measures, and/or if applicable a risk analysis including the supporting documents.

The decision about the approval or disapproval of the request, along with any other conditions of the deviation, shall be sent by the procurement person of the relevant ZKL Group company to the supplier in writing.

5.2. Change

The supplier shall inform in sufficient advance and in writing the relevant ZKL Group company about any substantial change of the manufacturing process, including the following information:

- the use of a different design and/or another production material;
- production using equipment transferred to another production facility or another manufacturing process;
- manufacture by using a different technology;
- any change of suppliers of components, materials and/or services (such as heat treatment),

meaning anything that could have a similar effect, primarily in terms of the product safety and functioning. The supplier shall describe the reasons for the change in detail and provide a risk analysis including the necessary documents. The relevant ZKL Group company is authorised to refuse any such change, or to request a new FAI in a reasonable time after delivery of the notification. Should the supplier fail to meet the requirements, the changed product shall be considered non-compliant.

6. COMPLAINT MANAGEMENT

Where the relevant ZKL Group company finds out that a delivered product fails to comply with the specified requirements, they shall notify this fact to the supplier in writing – as a complaint. Following the notification of a product defect, the Supplier shall proceed as agreed with the ZKL Group.

The defect notification includes a 8D Report of Corrective and Preventive Actions (hereinafter referred to as the „Report“). The Supplier shall analyse the defect, set out and duly implement corrective measures to prevent any recurring occurrence of the non-compliance and remedy the root cause. The ZKL Group recommends recording the problem remedy into the Report form of the relevant ZKL Group company. 8D reports in the Suppliers´ forms are accepted.

The Supplier shall:

- prepare and deliver a duly filled-out 5D Report to the relevant ZKL Group company, setting out the root cause of the defect and a draft plan of corrective actions within 14 days at the latest of the day of delivery of the defect notification.
- without any delay of the date of delivery of the Report, implement all the proposed corrective and preventive actions and send a duly filled-out and updated 8D Report within 30 calendar days of the date of delivery of the complaint at the latest.
- reimburse the ZKL Group company all extra costs and damages incurred in consequence of the defect notified.
- assure an inspection of the delivered goods at its own cost.

The Customer is authorised to:

- set-off the costs and damages incurred in consequence of the defect notified.

The complaint is closed after implementing the corrective actions leading to the remedy and prevention of any recurring occurrence of the notified defect, and after verifying their efficiency.

7. SUPPLIER EVALUATION

The evaluation of the Supplier verifies the Supplier´s performance in terms of the contractual requirements mainly in the area of the product quality, level of the QMS in place, logistics and the relating costs. The Supplier evaluation is the fundamental tool for the feedback to the ZKL Group suppliers, and likewise it is used when selecting suppliers in new projects.

The evaluation is performed by using the classification set out by the ZKL Group companies and is regularly sent to all strategic suppliers. Suppliers evaluated in class „C“ are blocked for further cooperation in the list of ZKL Group suppliers, suppliers evaluated in class „B“ are invited to present system measures to improve their performance.

8. SUPPLIER ESCALATION (ESCALATION PROCESS)

In the event that serious deviations occur or for the reason of long-term failure to improve in the overal supplier evaluation, the supplier is place in an Escalation Process. The form of escalation will be chosen by the relevant ZKL Group company depending on the seriousness of the situation. The escalation may be in the form of:

- a periodical presentation of corrective actions by the supplier;
- a special process audit at the supplier´s premises performed by a representative of the relevant ZKL Group company;
- a special process audit at the supplier´s premises performed by a third party;
- Process-product surveillance at the supplier´s premises performed by a third party for the ZKL Group.

All costs incurred by the supplier in connection with the escalation shall be borne by the supplier. Likewise, the supplier shall pay all costs to the ZKL Group or to the third party authorised by the ZKL Group incurred in connection with the escalation, without any delay after receiving a written request from the ZKL Group.

9. SUPPLIER AUDIT

The ZKL Group companies and/or the third parties authorised by it are entitled to review directly the fulfilment of obligations by the supplier and its subcontractors at any time during working days and usual working hours, primarily by conducting a product, process or system audit. The supplier is required to give the ZKL Group company and/or its authorised third party/parties the opportunity to conduct at the supplier´s premises and/or at its subcontractor´s premises a review of the manufacturing (making) process of the required product and the manufacturing equipment or an evaluation of parts, processes or systems in the company seat or in the facility where the product in question is manufactured (made). The supplier shall keep a product manufacturing (making) quality management system when fulfilling its contractual obligations, at least in the scope and quality existing when the cooperation started.

When selecting or reviewing new suppliers, the ZKL Group and/or its authorised third parties make a review of compliance with the quality management system requirements.
To review the process qualification of a supplier and fulfilment of requirements, the ZKL Group and/or its authorised third parties conduct process audits that are organised based on the following facts:

- an annual plan of supplier audits, drawn up in line with the evaluation of the supplier performance in the previous period;
- if required, it may be part of the FAI – product and process review.

The manner of conducting system audits is governed by the EN ISO 19011 standard. Process audits are conducted in the form of an audit questionnaire for the ZKL Group suppliers.

The supplier is required to send the lead auditor its response to the audit report within 30 days of the delivery thereof. The response shall include the root cause of the non-compliance, the actions taken to remedy / prevent its occurrence, and evidence that the actions were completed.

10. LIST OF ABBREVIATIONS

5D report	- a tool for complaint processing up to level 5
8D report	- a tool for complaint processing up to level 8
EN ISO 9001 Quality Management System	- an international standard for quality management systems
EN ISO 19011 Audit Standard audits	- a standard specifying rules for process and system
FAI (First Article Inspection)	- take-over / release of the first article
ISO/TS 22163	- an international technical standard for quality management systems in the railway industry
Control Plan	- a list of controls for certain product/process characteristics to verify its compliance with the customer´s requirements.
Process	- a set of inter-connected or inter-acting activities that convert inputs to outputs
Product	- process, product, service
Technological procedure	- a sequence of operations connected with the conversion of a semi-product to a finished product at a given workplace
Customer	- final receiver of products

Date: Date:

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Signature (Representative of ZKL organisation) Signature (supplier)

List of appendices:

Appendix No. 1: First Article Inspection (K-06-01-01-1)

Appendix No. 2: Deviation from documentation (K-06-01-01-2)