Quality Guideline for Production Materials, Operating Materials, Tools, Equipment and Testing and Measuring Instruments

Vers. 3.0

Last updated: 29/04/2021

Contents

1 Foreword

Gira, an international manufacturer of intelligent system solutions for electro-technical and networked digital building control, is entering into a clear and cooperative relationship with the supplier.

This quality guideline is therefore intended to clearly present the binding framework conditions for deliveries and services to Gira even before the initial order is placed. Acceptance of the following minimum quality requirements is a prerequisite for approval to supply. Within the framework of ongoing business relations, these quality requirements will be supplemented by project-specific and product-specific requirements that take precedence.

The quality guideline applies to new orders and changes to existing products from the time of signing.

As an integral part of the supplier agreement, framework agreements and individual orders, the quality guideline is binding upon suppliers.

As a supplier and partner, you are required to meet the requirements of our **Gira quality guideline**, which is standardized for suppliers, so that together we can develop and successfully produce our products to meet the highest demands.

2 Requirements in relation to the management system

2.1 Quality management

The supplier must have introduced a quality management system (hereinafter: QM system) that meets or exceeds the requirements of ISO 9001, as amended, and must ensure that this QM system is maintained.

If ISO certification is suspended or revoked, Gira must be informed of this in writing without undue delay.

The contractual items shall be manufactured and tested in accordance with the rules of this QM system. The supplier may only deliver contractual items to Gira that have undergone the QM system measures required under this agreement.

The supplier shall provide Gira with the corresponding QM certificates and shall inform Gira of the status of the certification.

After successful completion of the Gira approval process and, if necessary, after an audit by Gira, the supplier shall receive approval as a supplier.

If the supplier does not have a demonstrably certified QM system, an audit (system or process audit) by Gira is mandatory.

Within the scope of the ongoing business relationship, the supplier shall grant Gira the right to carry out audits on its premises and to participate in production inspections. After appropriate notification and coordination, Gira employees or a third party authorised by Gira shall be given access to the respective production facilities of the supplier.

2.2 Supplier selection

Gira endeavours to use only reliable and approved suppliers for Gira products and services.

As part of the initiation of a business relationship, an initial check of quality capability is carried out using the Supplier Check form. It must be completed in full by the potential supplier, signed with a legally binding signature, and returned to Gira.

In addition to a positive audit result, the fully completed Supplier Check is the basis for being approved as a supplier for a business relationship with Gira.

2.3 Producibility analysis

Before submitting an offer, the supplier must carry out a producibility analysis on the basis of CAD models, drawings and other applicable documents. Gira will provide the producibility analysis form to the supplier in the course of the offer phase.

The producibility analysis includes a feasibility assessment, in which the supplier must contribute its expertise and establish the producibility, whether the specifications can be met and the quality.

The supplier thereby guarantees that, taking into account its existing production equipment and capacity, the product to be supplied is to be manufactured and, if necessary, assembled and/or packaged with a high degree of process reliability and capability and delivered in compliance with the specifications and quality requirements in accordance with the request from Gira.

When submitting the offer, the result must be confirmed to Gira on the producibility analysis form containing the required analysis results. All the points queried within the producibility analysis must be formulated in writing in the attachment.

2.4 Supplier evaluation

Gira carries out supplier evaluations within the scope of the ongoing business relationship. In this process, each supplier is assessed according to defined criteria. The individual criteria are defined as follows:

Quality

A material group-dependent ppm target value is stored in the master data of the supplier evaluation for each production material supplier. All justified complaints from Goods Inward and Production are taken into account in connection with this criterion.

Adherence to delivery dates

To calculate adherence to delivery dates, the difference between the delivery date specified on the purchase order and the actual date of delivery is determined.

Quantity accuracy

To calculate the quantity accuracy, the difference between the order quantity (target) and the quantity delivered (actual) is determined for each inbound delivery.

2.5 Supplier rating and evaluation

The ABC rating of suppliers is based on the total key figure determined for the evaluation period. Precise details of how this is calculated can be found in the current version of the document "**Bewertungskatalog-Evaluation Catalog LBW**". The aim of every supplier should be to achieve or maintain an A rating.

Rating	Meaning
A	**The requirements are met in full.** The supplier is considered preferred for the evaluation period under consideration.
B	**The requirements are not met in full.** The supplier must initiate suitable improvement measures and report on the progress of implementation (responsibility lies with the supplier's quality management team) to Gira Supplier Quality Management.
C	**The requirements are not met.** The supplier must initiate suitable improvement measures and report on the progress of implementation (responsibility lies with the supplier's quality management team) to Gira Supplier Quality Management. Depending on the circumstances, Gira reserves the right to verify the implementation of the measures on site (audit).

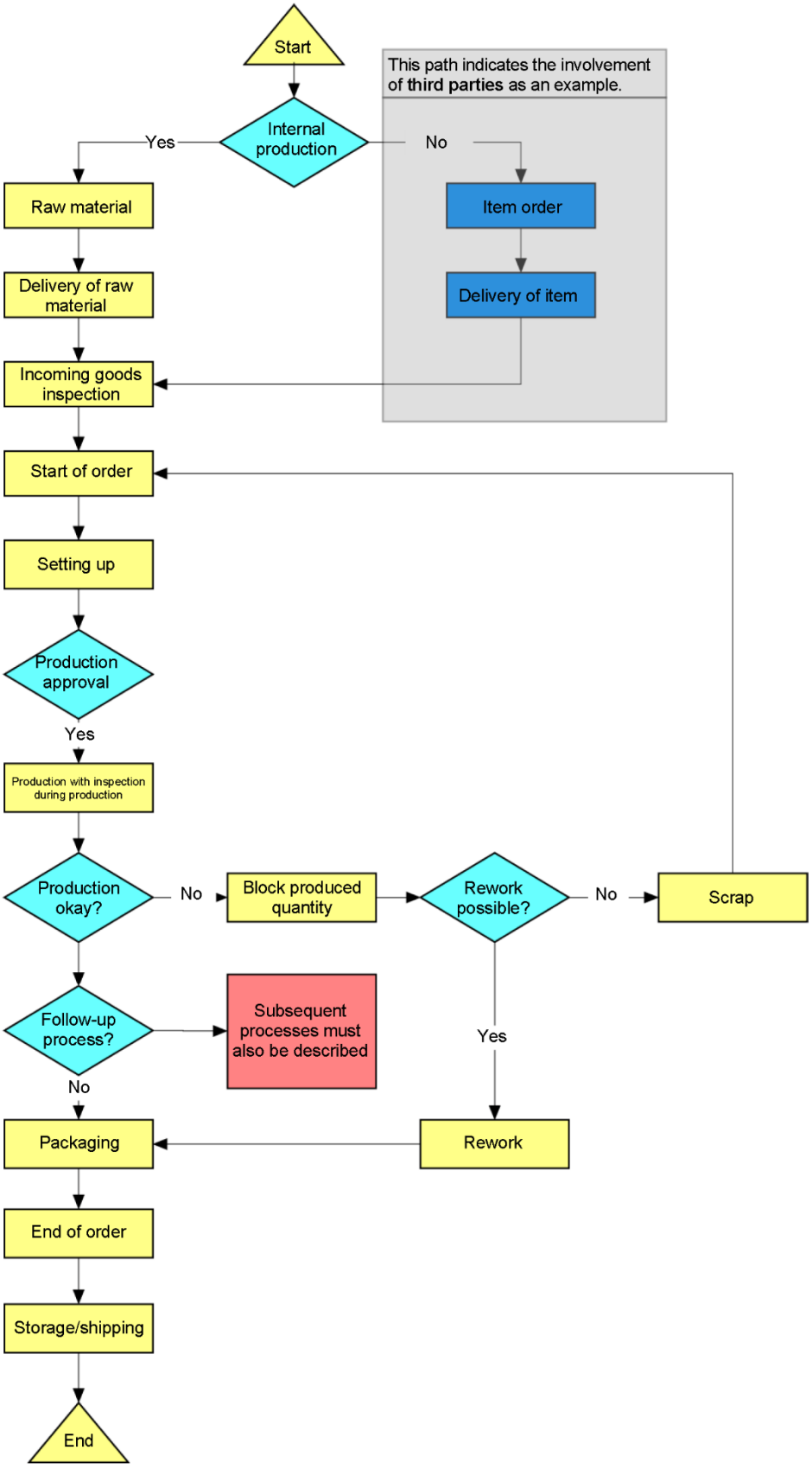
2.6 Supply by third parties (sub-suppliers)

The supplier is responsible for passing on these quality assurance requirements to its sub-suppliers, to the extent that is relevant to the order, and for ensuring that these sub-suppliers comply with the requirements. Gira can demand proof from the supplier of how the latter is ensuring the effectiveness of its sub-suppliers' quality management systems.

The integration and control of relevant sub-suppliers must be documented in the supplier's manufacturing concept *(see example in figure 2.4.1)*. All manufacturing and process steps of the supplier and relevant sub-suppliers shall be evident from the supplier's manufacturing concept.

The final manufacturing concept must be submitted to Gira for joint discussion prior to the initial sampling at the latest.

Figure 2.4.1 Example of a manufacturing concept with third-party involvement



2.7 Requirements in relation to personnel

For all manufacturing processes, the persons deployed must provide evidence of recognised or internal training to ensure state-of-the-art production, test planning and testing. This must be ensured in a qualification matrix of the staff involved in the order, and evidence must be provided to Gira if necessary. The same applies to any subcontracting to third parties.

3 Suppliers' responsibility for quality

The supplier must ensure, by means of suitable advance quality planning, that the required and expected **zero defect philosophy** is pursued at all times. The measures taken must ensure that the quality requirements are specified and met in all phases of manufacture, including material procurement.

The supplier must comply with the order specifications, all requirements and specifications pertaining to the order from other applicable documents and the statutory provisions. All ambiguities regarding the order must be clarified by the supplier with Gira before the start of production. Any resulting binding commitments on the part of Gira shall be issued in writing and documented by the supplier in its project documentation and in the official accompanying document, e.g. when providing samples or initial samples in the sample or initial sample test report.

If applicable to the scope of services, the supplier shall assume manufacturer responsibility. In this case, the supplier will carry out a conformity assessment of the delivered components for its scope of services and/or parts thereof and demonstrate conformity to the EU directives to the purchaser by means of a suitable document. Gira will be granted the right to view or request internal manufacturer documentation, including the risk analysis (in so far as the EU directives require this for the scope of services) at any time. The supplier will hand over the technical documentation required for the purchaser to Gira.

If the documents referred to in an order or contract contain contradictory or ambiguous specifications regarding a requirement, this must be promptly clarified with Gira.

If it is necessary to deviate from the quality guideline, the supplier must give reasons for this in writing and obtain written approval from Gira for the deviation concerned.

The supplier is obliged to check all necessary specification documents (specifications, drawings, parts lists, CAD data, producibility analysis, factory standards and the like) upon receipt for completeness and consistency in general and in relation to the contractual item. Gira must be promptly informed in writing of any defects, omissions or ambiguities. The national and international standards specified in the Gira documents must be procured by the supplier. Unless expressly stated otherwise, the most recently issued agreed version shall apply. The supplier must maintain a system that ensures that it always has the latest version available. Gira will inform the supplier of any changes to the project-specific specification documents.

Regardless of whether a visit or audit is carried out by Gira, the supplier is responsible for state-of-the-art execution in accordance with the order and the respective regulations. This applies in particular to the fulfilment of legal requirements. The supplier shall therefore take all necessary quality assurance measures with regard to the scope of services ordered. Production inspections must be planned, performed and documented. Any components/parts that deviate from the specification or are faulty must be excluded from delivery.

Storage and packaging must guarantee the protection of the components, satisfy transport requirements and ensure that the guaranteed product properties are maintained.

Please refer to our delivery guidelines in our download area: https://www.einkauf.gira.de/de/download.html

Depending on the requirements for the product and based on its own analyses, the supplier shall draw up test specifications and/or test instructions or test plans with information on test characteristics, tolerances, test scopes etc. In addition, the test instructions must contain information on the test methods, test environment and test conditions. The afore-mentioned documents must be presented to Gira for inspection upon request.

Any quality requirements that go beyond this will be agreed with the supplier on a project-specific or product-specific basis. They are not part of the quality guideline.

4 Quality requirements in relation to production technologies

4.1 Suppliers of plastic compounds

General

Gira expects suppliers of plastic compounds to operate their own test laboratory or be able to provide evidence of access to an accredited test laboratory. In addition, support for problem cases (e.g. process engineering, material analysis) must be available. The individual plastic components must be mixed by means of automatic weighing or manually using verifiably calibrated scales.

Sample compounds

Sample compounds must be produced in a series or near-series production process and described by means of an initial sample test report (ISTR). Production under near-series conditions must be confirmed in writing.

Material and colour sample plates and material and safety data sheets must be enclosed with the ISTR.

You can find the Gira ISTR template in our download area under the following link:

https://www.einkauf.gira.de/de/download.html

Test methods/criteria

Sample compounds and series compounds must be tested for quality within the scope of production by means of the following test methods, among others:

- Solvent viscosity
- MVR measurement
- Colorimetric testing
- Tensile bar test
- DSC analysis
- Bulk density measurement

Documents required:

- Technical data sheet (material specification)
- Safety data sheet
- Acceptance test certificate 3.1 according to EN 10204
- Colour measurement protocol

4.2 Suppliers of plastic parts

General

Non-series plastic parts, regardless of whether they are purely purchased parts or originate from tools provided by Gira, must always be supplied on the basis of the

- Valid product drawing and
- Supplementary test criteria and factory standards (see 4.7).

Test methods/criteria, among others:

- Dimensions and tolerances
- Colorimetry
- Compliance with the material specification
- Function
- Gloss level

Documents required:

- Acceptance test certificate 3.1 according to EN 10204
- Gira acceptance test certificate
- ppm proofs on an order-related basis
- Documents accompanying goods, batch-related
- Documents accompanying goods for external process steps by third parties

Test certificates as part of deliveries are agreed individually between Gira and the supplier.

Sampling procedures for plastic parts are described in chapter 5.

4.3 Suppliers of stamped and bent parts, screws, springs, turned parts, milled parts, deep-drawn parts, aluminium extrusion parts, zinc die-cast parts, and glass blanks

General

Non-series stamped and bent parts, screws, springs, turned parts, milled parts, deep-drawn parts, aluminium extrusion parts, zinc die-cast parts, and glass blanks, regardless of whether they are purely purchased parts or originate from tools provided by Gira, must always be supplied on the basis of the

- Valid product drawings and
- Supplementary test plans and criteria.

Test methods/criteria, among others:

- Dimensions and tolerances
- Material and colour
- Function
- Surface quality (roughness, layer thickness, gloss level etc.)

Documents required:

- Acceptance test certificate 3.1 according to EN 10204
- Gira acceptance test certificate
- ppm proofs on an order-related basis
- Evidence of coating thickness
- Documents accompanying goods, batch-related
- Documents accompanying goods for external process steps by third parties (sub-suppliers)

Test certificates as part of deliveries are agreed individually between Gira and the supplier.

Sampling procedures for stamped and bent parts, screws, springs, turned parts, milled parts, deep-drawn parts, aluminium extrusion parts, zinc die-cast parts, and glass blanks are described in chapter 5.

4.4 Suppliers of tools

General

Suppliers of tools (tools for plastic parts) must comply with the Gira tool standard; the tool specification for stamping tools must be completed for tools for stamped/bent parts. Both documents are only valid in their current version. All other tools commissioned by Gira, such as extruded or zinc die-cast parts, must be produced according to the current state of the art at the time of the order.

This applies both to new and replacement tools and to repairs to tools.

The works standard or specification will be provided by Gira in the course of the offer phase.

- Technical specifications and tool standard for the production of thermoplastic and thermoset injection moulding tools and single parts (001.000.02070.0000.XX)
- Tool specification for punching tools

Tools that are the **property of Gira** or the **property of our customers** must be marked as Gira property by means of an ID number and have a tool accompanying folder (in paper or electronic form) from which it is possible to see at all times what maintenance, servicing processes and output (pieces per cavity) have been or are to be carried out throughout its service life.

Test basis, among others:

- CAD data record
- Initial sample test
- Cmk, Ppk evidence

Documents required:

- Initial sample test report (Gira template)
- Certificate of competence (Cmk, Ppk)

Sampling procedures for tools are described in chapter 5.

4.5 Suppliers of electronic sub-assemblies

General

Electronic sub-assemblies must always be manufactured in a safe ESD production environment (floor, workstations, wrist earthing, clothing, packaging, access control, training and instruction of employees). In line with IEC/DIN EN 61340-5-1, the environment must be permanently monitored by a named ESD officer.

The rules of IPC class 2 apply as a minimum requirement for the production and testing of sub-assemblies.

Sampling

The supplier will receive the following documents and information in the course of the enquiry:

- BOM
- Article drawings
- Assembly data
- Number of test samples

Electronic sub-assemblies must be produced in a series or near-series production process and described by means of an initial sample test report (ISTR). Production under near-series conditions must be confirmed in writing.

All product documentation required in accordance with the enquiry documents must be enclosed with the ISTR (BOM, assembly data, article drawings etc.).

The initial samples must be described in such a way that a reference to the ISTR is possible

without any doubt.

The complete initial sample test report including all documents and initial samples must be sent to the responsible Gira quality planner in the case of new products, to the responsible purchaser in the case of changes to series products ,and to the responsible supplier quality manager (SQM) in the case of relocations.

You can find the Gira ISTR template in our download area under the following link:

https://www.einkauf.gira.de/de/download.html

4.6 Suppliers of commercial goods (catalogue articles)

The technical specifications and properties listed in the technical documents, descriptions and operating instructions, and standards and catalogues of the supplier, are the basis for ordering and are therefore binding.

Sampling procedures as described in chapter 5 are not required.

4.7 Suppliers of external sales articles

For externally produced sales articles, the supplier guarantees conformity, as far as applicable, with technical documents, descriptions and operating instructions, and standards and catalogues related to its scope of services.

Any further requirements must be agreed between Gira and the supplier.

Sampling procedures are described in chapter 5.

4.8 Suppliers of packaging

In the course of the enquiry, the supplier will receive a product sample (prototype) from Gira, on the basis of which the supplier must create key data for the packaging design and the packaging concept.

Packaging samples, produced on a sample plotter from the planned series material, must be sent to the responsible Gira purchaser or the designated Gira specialist department as the result of a packaging concept (B sample).

Any necessary changes and/or adjustments to the packaging sample are coordinated directly between the responsible Gira purchaser and the supplier.

After the packaging sample has been internally approved, a small series is commissioned with C sample status (production on sample plotter) for quality control by Gira.

After approval of the C sample, the supplier provides the punched drawing without print data (PDF and/or STP format) to the responsible Gira purchaser.

The print data are inserted by Gira and transmitted to the supplier for the creation of the final printing plate.

The supplier provides the final layout of the printing plate to the responsible Gira purchaser for final approval.

Once the initial order quantity has been commissioned, the supplier produces the tools.

The supplier presents five samples with ISTR according to the punched drawing to the responsible Gira quality planner with the initial order quantity for final approval and, in the case of changes, to the named Gira employee and, in the case of relocations, to the responsible SQM.

You can find the Gira ISTR template in our download area under the following link:

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5 Sampling procedures

5.1 Prototypes and samples (C sample)

Prototypes and samples are components that have not yet been produced under series or series-like conditions. The prototypes and samples must be subjected to 100% testing of all specified test dimensions and relevant features. These must be coordinated with Gira. The test results must be documented with the aid of the Gira ISTR template and made available to Gira. The use of the prescribed material must be expressly confirmed. These parts must be clearly identified as prototypes and samples upon delivery. The material data sheet and/or factory test certificate must also be included with the delivery.

Labelling must be carried out as follows:

- Material designation (for raw materials the exact type designation)
- Material number
- Drawing no. and index
- Supplier's batch number
- Date of manufacture

If it is not possible to label the product due to its size, this must be indicated on the outer packaging.

5.2 Initial sample and proof of machine capability (D sample)

Initial samples are samples that have been produced with the tools and processes intended for series production under series production conditions or conditions close to series production.

The final manufacturing concept must be submitted to Gira for joint discussion prior to the initial sampling at the latest.

The supplier must ensure that the initial sample tests are performed in the following test environment:

- ISO 17025 or DIN 291
- Alternatively as a minimum requirement: Temperature: 23 °C ± 3 °C
  Humidity: 50% ± 20%

The initial samples and Cmk samples must be conditioned in the specified test environment for at least 24 hours before the measurement.

An MSA 1 must be carried out for the ISTR and Cmk measuring equipment.

Initial samples are ordered in writing, including the quantity, number of pieces per tool and cavity, delivery date and documentation requirement (Gira ISTR template). Unless otherwise commissioned by Gira, five samples per cavity and/or tool insert or production line are always measured.

The supplier is obliged to produce and test initial samples and to prove their capability:

- Machine capability is achieved when the following parameters are fulfilled:

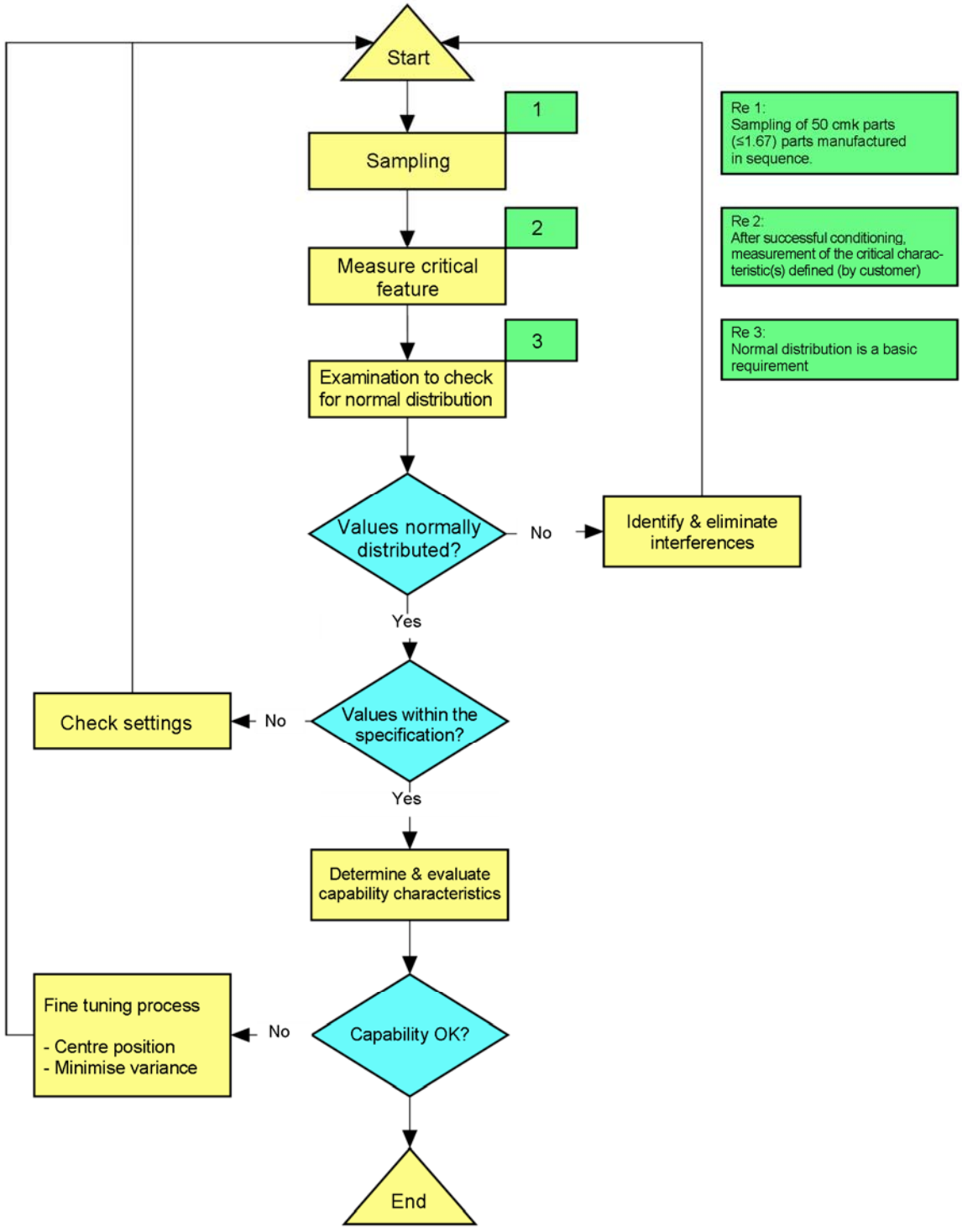
  Cmk ≥ 1.67 with n = 50 parts or
  Cmk ≥ 2.0 with n = 25 parts

Unless otherwise specified and agreed, the dimensions marked SC and CC in Cmk are measured and evaluated with five parts each. No capability is explicitly required.

For zero-limited dimensions, only the location and dispersion are checked. The measured values must be within the specified tolerances.

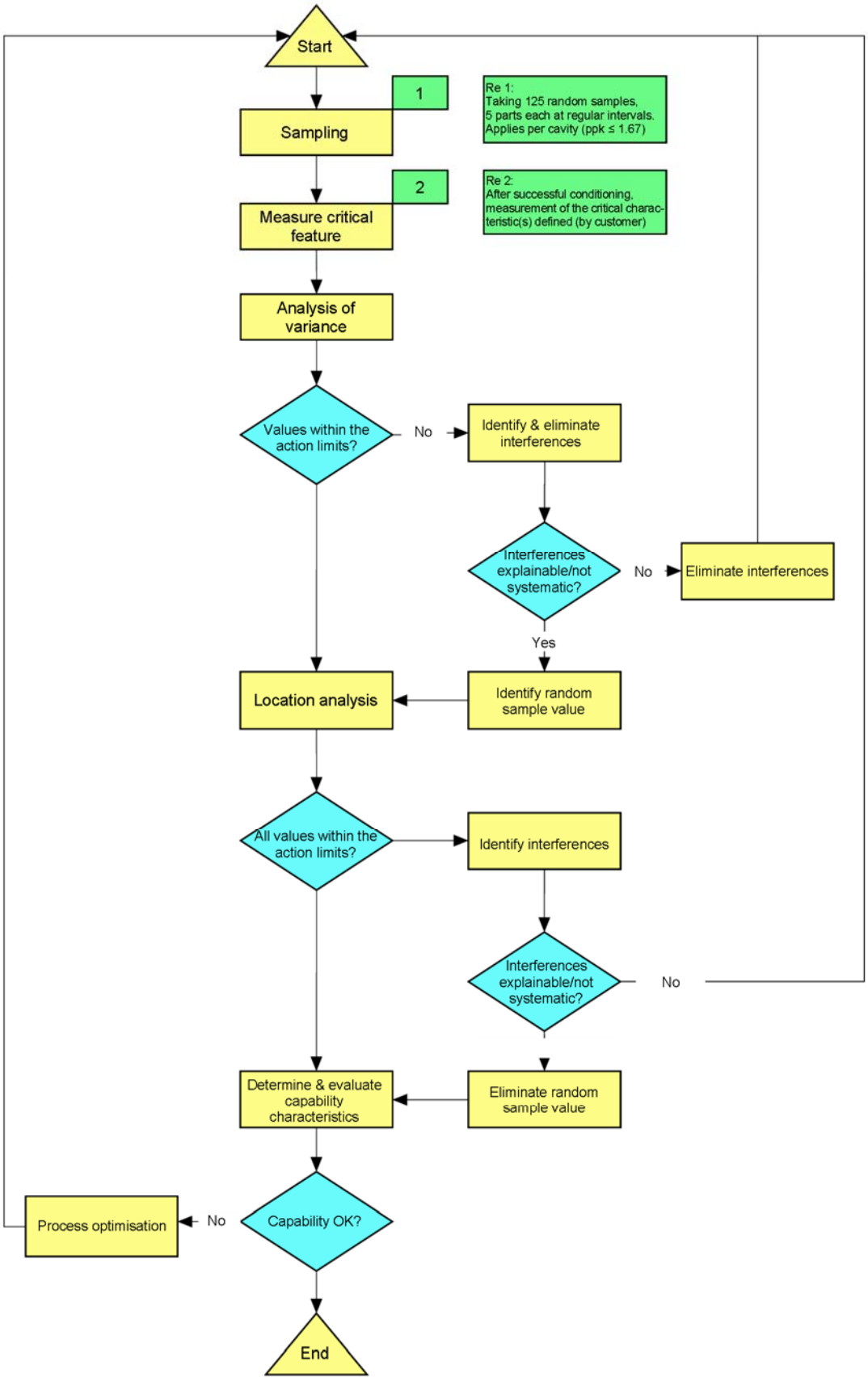
Theoretical dimensions without any tolerance are measured but not taken into account

5.2.1 Example of process sequence for machine capability audit (Cmk)



5.3 Preliminary proof of processing capability

5.3.1 Process sequence for preliminary processing capability analysis (Ppk)



- The provisional process capability on the basis of pre-production is achieved when the probable processing capability parameters (Pp > 1.67, n = 125) and the probable processing capability indicator (Ppk > 1.67, n = 125 parts) are met. These parameters must be documented and evidence provided by the supplier during the course of process validation.

- If the parameters of the preliminary processing capability are not achieved, the supplier must optimise the process in order to achieve the set quality target (Ppk > 1.67, n = 125 parts).

5.4 Test planning

The supplier must draw up test plans for the incoming goods inspection, parts production, assembly, output and material testing.

The test plans should include all important features from the drawings and technical documents, as well as the function of the parts (if applicable). If part-specific test equipment/measuring devices are required, the supplier must make them available and use them at its own responsibility.

5.5 Pre-series and pilot series (pre-series – D sample)

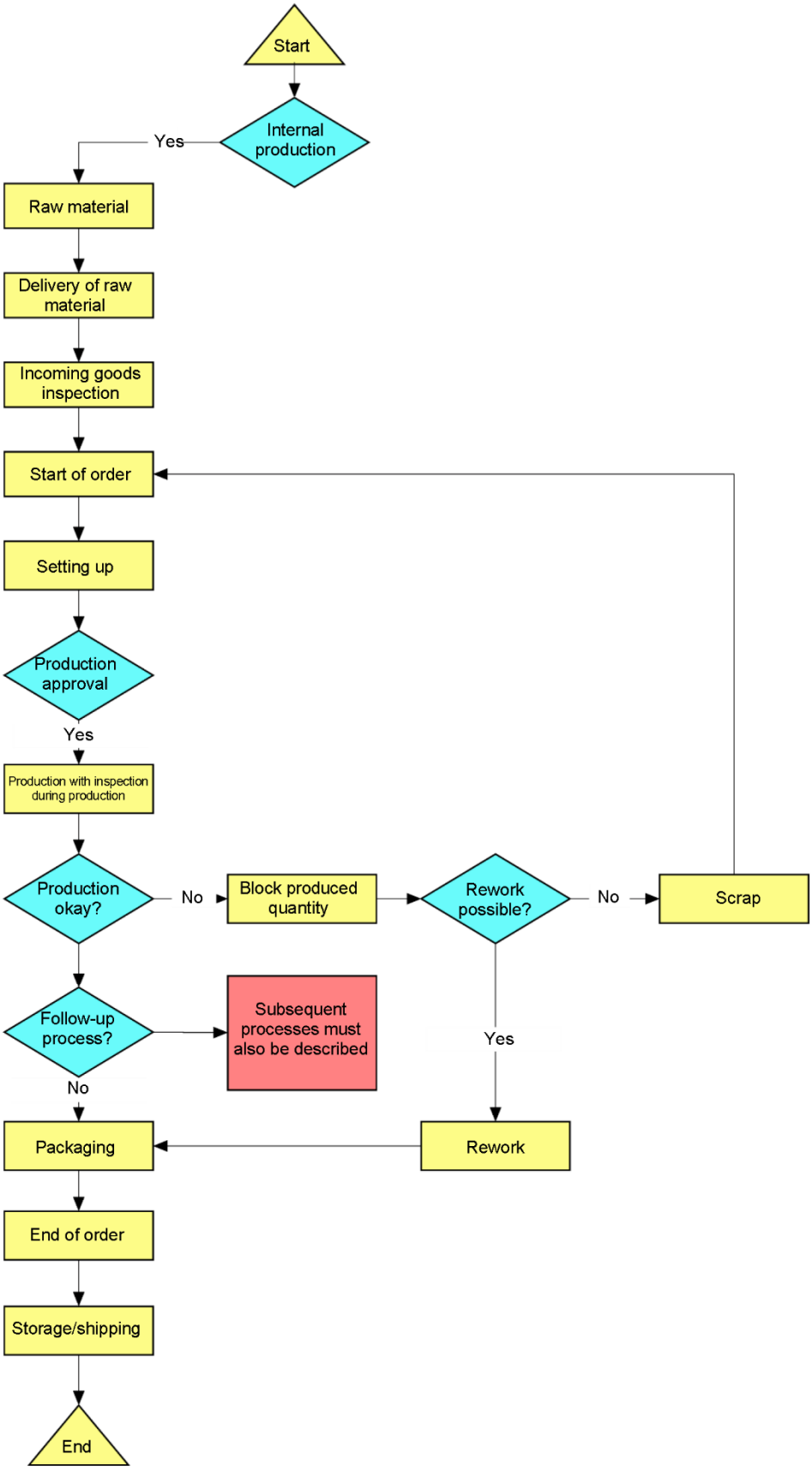
Pre-series and pilot series for new placements and changes to non-series articles are ordered in writing from the supplier by Gira. The basis for an order is, among other things, the manufacturing concept created by the supplier *(figure 2.4.2 Example of internal manufacturing concept),* the process control plan (PCP) based on this and a positive initial sample (see section 5.2).

The process control plan (PCP) maps the manufacturing process, process steps, and test steps for a product or product group. The PCP also includes a reaction plan that determines what action is needed if any non-compliant parts are discovered either during or at the end of the process.

The process control plan always includes:

- Date of issue and any changes
- Customer master data (company address)
- Name of the supplier, with production site
- Material number(s), material designation/name
- Design modification status
- Phase to be applied (pre-series, series)
- Main contact person of the supplier/manufacturer to whom factual questions may be directed
- Construction stage or operation number, process designation/description of the task
- Product-related and process-related characteristics, whereby particular characteristics (CC, SC) must be explicitly marked and highlighted
- Specifications, tolerances, forces and process parameters
- Machines, devices, workpiece carriers, tools, test equipment for production
- Methods in the form of applicable test instructions, inspection/measurement methods, sample sizes, control by means of SPC control/error collection cards, reaction plans and documented corrective measures

Figure 2.4.2 Example of an internal manufacturing concept



5.6 Series releases

Series releases are communicated to the supplier exclusively by Gira in the form of a released initial sample test report in writing or in electronic form.

Note:
The basis for a series release is a successful ISTR with Cmk and Ppk proof on the basis of the first production batch.

Any deviating separate agreements must be made in writing.

5.7 Testing and measuring equipment

Testing and measuring equipment comprises all measuring devices, measuring elements, display devices, gauges and test benches, including testing software, used in the operational process in production, quality assurance, testing laboratories, development and, whenever appropriate, also in customer service.

The supplier guarantees that the following requirements are met within the framework of its testing and measuring equipment monitoring system:

- Calibration certificates
- Accredited internal/external service providers
- Evidence of measuring equipment capability (MSA)
- Qualified test personnel
- ISO or DAkkS traceability
- Test equipment number
- CAD construction data for constructed measuring devices and special gauges

5.8 Quality requirements and assessment standards for decorative and design surfaces

In order to ensure the required surface quality, the existing Gira factory standards must be adhered to. Gira will provide the supplier with the latest version of the relevant company standards during the enquiry phase.

6 Acceptance tests

Plastic compounds are delivered with an acceptance test certificate 3.1 according to EN 10204 or equivalent. Standard and catalogue parts and auxiliary, operating and additional tools are delivered with a works certificate 2.1 in accordance with EN 10204 or equivalent.

For retailers, both a certificate 3.1 in accordance with EN 10204 from the distributor and a copy of the certificate of origin 3.1 in accordance with EN 10204 from the manufacturer must be supplied.

Drawing items, e.g. screws, contacts, support rings, springs, metal sheets, catalogue items and other metal parts must also be delivered with an acceptance certificate 3.1 in accordance with EN 10204 or equivalent. In addition to an identity check, Gira also reserves the right to randomly check the quality of all deliveries.

Individual acceptance tests such as ship to stock will be agreed separately in writing between Gira and the supplier in separate contracts.

7 Complaints

7.1 Complaints to suppliers about Gira production material

Faulty deliveries will be rejected, regardless of whether Gira recognises them upon receipt of goods, during processing, during the final inspection, during commissioning or within the warranty. Gira will lodge a complaint and request an initial response within one working day after receipt of the notification of complaint (lieferantenreklamation@gira.de). An action plan in the form of an 8D report will be submitted within ten working days at the latest. The efficacy test must then be submitted in the form of the fully completed 8D report provided by Gira after completion of all measures (lieferantenreklamation@gira.de).

7.2 Complaints to suppliers about Gira tools and testing and measuring equipment

Faulty tools and their components as well as testing and measuring equipment shall be notified to the supplier by means of a notice of defect immediately after becoming aware of the defect. The supplier must submit a statement to Gira within one working day after receipt of the notice of defects and corrective measures/remedial action must be named.

7.3 Complaint from the supplier to Gira

Faulty deliveries (materials and services provided by Gira) as well as under-deliveries and over-deliveries (quantity) must be reported to Gira (lieferantenreklamation@gira.de) in the form of an 8D report. An initial response from Gira will be issued within one working day. Gira will submit the fully completed 8D report to the supplier after ten working days at the latest.

8 Special releases

All deviations from the requirements set by Gira (drawings, specifications, test specifications etc.) must be applied for in writing or electronic form from Gira's quality management before delivery by means of a special release request.

A delivery may be made only after approval of the special release has been given by Gira's quality management. The special release request must be submitted in good time so that no promised delivery dates are affected. A special release that is issued will always refer to a fixed period or a fixed number of pieces.

The transport containers (packaging) for such deliveries shall be marked with a copy of the approved special release that is clearly visible and undetachable from the outside.

The supplier is obliged to archive raw material samples, single samples (min. 2 pieces), two samples per cavity over the lifetime of the product in the case of multiple cavities, including the corresponding documentation, in such a way that the samples are undamaged and can be retrieved at any time. As a legal safeguard, the supplier will make the affected raw material samples, individual samples (min. 2 pieces) or, in the case of multiple cavities, two samples per cavity available to Gira for approval when a special release request is made. These will then also be archived at Gira. If the product is discontinued or relocated, the documentation must be made available to Gira without undue delay.

The documentation includes:

- A fully completed 8D report from the supplier
- The approved special release by Gira
- Samples that are labelled and belong to the special release

9 Risk management

Risk management describes the potential hazards and the safety precautions introduced for this purpose for all operational, production, and delivery areas at suppliers. The supplier shall, on its own responsibility, define a concept for emergencies, in order to exclude the risks of interrupted availability or unavailability. In particular, protection against fire and theft, data backup, and machine capacity must be ensured at all production sites and at third party premises. If required, for example in the context of audits or supplier visits, Gira must be granted access.

9.1 Design FMEA (D-FMEA)

Within the scope of new placements or product changes for which the supplier bears development responsibility on behalf of Gira, a design failure mode and effects analysis (D-FMEA) must be performed whenever necessary for the specific project and agreed between the contracting parties.

The result of the design FMEA are identified critical and significant features for manufacturing and assembly that cannot be influenced in terms of the design/electronics/SW.

These features have a decisive influence on product safety and service life as well as on manufacturing and assembly suitability.

DIN EN 60812, Ford or VDA must be used as recognized FMEA models.

The design FMEA is created at the time of the development release by the client. The specified measures must be fully implemented and brought to the attention of the responsible purchaser and Gira quality planner.

9.2 Process FMEA (P-FMEA)

The supplier shall carry out a process FMEA in the following cases with or without D-FMEA:

- New placements or product changes
- Relocations (change of address)
- Change in the originally approved manufacturing process and concept as well as the approved manufacturing technology

In all of the above cases where the supplier has development responsibility, the supplier must derive the P-FMEA from the D-FMEA that was previously performed and evaluate the critical features with regard to their significance, probability of occurrence, and possibility of detection in the manufacturing process.

In its P-FMEA, the supplier shall also evaluate the inspection dimensions named in the article drawing.

Family FMEAs are permitted for similar products if agreed by the contracting parties.

The process FMEA must have been created for the pre-series and the specified measures fully implemented and brought to the attention of the responsible purchaser and Gira quality planner.

In the event of complaints, a P-FMEA can be requested by Gira in coordination with the supplier. In this case, the responsible SQM will be the contact person for the supplier.

DIN EN 60812, Ford or VDA must be used as recognized FMEA models here too.

10 Documents and records

The results of the quality inspections must be documented in full (quality records). Gira has the right to inspect the quality records. The minimum archiving period for all quality records is 15 years, unless otherwise stated. If the company is dissolved before the end of the retention periods, all records must be made available to Gira.

11 Traceability

The supplier guarantees the traceability of the products delivered by it within the framework of a risk assessment to be carried out by it or on the basis of contractual requirements. If a defect is detected, traceability must be possible in such a way to allow the defective products to be narrowed down. All products delivered to Gira must be able to be traced back via the delivery data (order number, production date, batch number, delivery note etc.) to the processes used for their manufacture and back to the source materials.

The supplier must ensure that its sub-suppliers also ensure traceability accordingly.

12 Product safety

The EU directives define basic requirements for the safety of products. For products that fall under at least one EU directive requiring CE marking, the supplier must supply Gira with an EU

declaration of conformity together with corresponding technical documentation and an initial sample. The supplier undertakes to make available to Gira upon request the records on which the EU declaration of conformity is based, such as hazard analyses or calculations.

The supplier gives its assurance that the goods it delivers comply with the requirements of the currently valid versions of the German Electrical and Electronic Equipment Act (ElektroG) and the German Batteries Act (BattG), if and insofar as the goods delivered by the supplier fall within the scope of these laws.

The supplier guarantees that the goods it delivers comply with the limit values specified in the currently valid version of the German regulations on restricting the use of hazardous substances in electrical and electronic equipment (ElektroStoffV), i.e. the regulations implementing RoHS in Germany. **This also applies to products that do not fall within the scope of ElektroStoffV.**

Example:

Gira purchases a screw that, as such, does not fall under ElektroStoffV, but is indirectly governed by these regulations due to its use in an electrical device.

The supplier guarantees that the provisions of regulation (EC) no. 1907/2006 concerning the registration, authorisation and restriction of chemicals (REACH regulation) are complied with. The supplier also specifically guarantees that, to the extent required under the provisions of the REACH regulation, the substances contained in the goods it delivers have been registered and the information required under article 32 of the REACH regulation will be made available to Gira. If the supplier supplies products as defined by article 3 of the REACH regulation, it will guarantee that sufficient information is communicated in accordance with article 33 of the REACH regulation.

The supplier guarantees that the goods it delivers do not contain any of the materials indicated in section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 5th January 2010 (Dodd-Frank Act) that originate from the conflict region mentioned therein, and that the supplier has implemented reasonable measures to ensure this.

13 Hazardous substances and ingredients

Substances that are subject to a legal ban on their use must not be contained in production materials or used in the context of services. Any hazardous substances that are produced or released during use must be declared. Service providers must obtain written approval from Gira before using potentially risky materials.

The use of paint wetting impairment substances (PWIS) must always be reported to Gira. The use of these substances should be avoided wherever possible.

Materials containing substances of this kind include:

- Silicone
- Polytetrafluoroethylene (PTFE)
- Certain types of oil and grease
- Release agents and lubricants
- Pigments and fillers
- Clothing, gloves and shoes
- Cosmetics, perfume and hairdressing products

This list is not exhaustive.

14 Continuous improvement

The supplier has a systematic management system that aims to achieve a high degree of customer satisfaction, and to continuously improve this. A comprehensive philosophy of continuous improvement must be evident within the supplier's entire supplier organisation (quality, products, processes). For this purpose, KPIs (key performance indicators) must be recorded and evaluated. The effectiveness of the measures must be evident from the progression of the KPIs.

15 Relocations and changes

Gira must always be informed in writing about any local production and site relocations.

This includes, for example:

- Tools
- Operating materials
- Equipment
- Testing and measuring equipment
- Transport and outer packaging
- Manufacturing processes
- Rework processes
- Processes to alternative sub-suppliers

If the afore-mentioned tools, operating materials and equipment, testing and measuring equipment or transport and outer packaging are Gira property, production and site relocations always require written approval from Gira.

In the event of changes to products, including the design and use of new or modified

- Production facilities (e.g. relocation from or to production sites, use of other tools or other production equipment),

- Manufacturing processes deviating from the approved manufacturing concept (including tests, test equipment and quality assurance measures) or
- Materials (for example, raw materials and materials from upstream suppliers or a change of upstream supplier for the same raw material and material type)

The supplier must notify Gira as early as possible, at least three months before the implementation of the innovation or change. Changes will be evaluated by Gira and, if necessary from Gira's point of view, a new initial sampling procedure will be requested.

The following also applies:

Repairs, reproductions, modifications or the scrapping of Gira tools, operating materials or equipment require written approval from Gira.

In addition, the supplier shall maintain an obsolescence management system (component, discontinuation and change management). This obliges the supplier to inform Gira at an early stage (> 6 months) if raw materials, sub-assemblies, components, content and material compositions (e.g. alloys) are no longer available on the market or are no longer available due to legal and normative requirements.

16 Period of validity

This quality guideline shall enter into force upon signature by both contracting parties and is concluded for an indefinite period. It applies to all deliveries of contractual items ordered during the validity period of this guideline. Either party may terminate this guideline by giving 12 months' notice to the end of a month.

17 Final provisions

(1) Changes and additions to this guideline must be effected in writing. This also applies if this clause is amended or annulled. There are no verbal side-agreements to this quality guideline.

(2) This quality guideline is subject to German law, to the express exclusion of the UN Convention on Contracts for the International Sale of Goods (CISG).

(3) The place of jurisdiction for all claims arising from or in connection with this quality guideline shall be the city of Cologne in Germany.

(4) If individual provisions of this quality guideline prove invalid or the quality guideline contains a loophole, this shall not affect the validity of the remaining provisions. The contractual parties shall endeavour to replace the invalid provision with a provision that best meets the objectives of the guideline in legal and economic terms, or shall close the loophole by means of an appropriate provision.

Entry into force and release:

ppa. Martin Mader
Head of Purchasing

14.06.2021
Date

i.V.

On behalf of Norbert Ernst
Head of Quality and Management – Systems

31.05.2021
Date

18 Terms and abbreviations

Terms/abbreviations	Description
BattG	Act governing the placement on the market, return and environmentally sound disposal of batteries and accumulators
Cmk	Machine capability study (used for the evaluation and acceptance of production equipment, process pre-runs, pilot and pre-series production)
Cpk	Process capability study (the long-term process capability study is carried out under normal series conditions)
DAkkS	The German Accreditation Body GmbH (DAkkS) is the national accreditation body of the Federal Republic of Germany. Its members include the German Calibration Service (DKD).
ElektroG	In Germany, the Electrical and Electronic Equipment Act (ElektroG) implements the EU's WEEE directive for handling electronic waste. The German Electrical and Electronic Equipment Act is intended to ensure that old electrical equipment is not disposed of with household waste, but is collected and recycled separately.
ElektroStoffV	In Germany, the Electrical and Electronic Equipment Substances Ordinance implements the so-called RoHS directives on the prohibition of hazardous substances in electronic equipment.
ISTR	The initial sample test report (ISTR) provides documented evidence of suitability for series production and the reproducibility of a product (single part, sub-assembly etc.) at constant quality.
Initial sample	Initial samples are products that are manufactured for the first time under series production and realistic conditions. Any other production as well as product release of such a product must be carried out under constant conditions, based on the initial sample.
ESD	This is the abbreviation for **e**lectro**s**tatic **d**ischarge. A large potential difference results in a spark or breakdown, which generates high electrical voltage pulses on electronic devices.
Producibility analysis	The technical and economic feasibility of new products is checked and confirmed by means of the producibility analysis.
IPC class	The IPC class of the product or system is determined according to the application requirements of the end products. In this way, the actual application requirements, such as the service life, of the electronic devices and the technical effort and costs required for this are taken into account.
Cavity	In the case of a single, double or quadruple injection mould, this refers to the number of mould nests *(cavities)*. A distinction must be made here between identical and different mould cavities.
KPI	In business administration, the term key performance indicator (KPI) refers to key figures that can be used to measure and determine the progress or degree of fulfilment with regard to important objectives or critical success factors within an organisation.
PWIS	The abbreviation "PWIS" stands for paint wetting impairment substances. They can be contained in silicone, substances containing fluorine and certain types of oil and grease.

MSA	The analysis of the capability of measuring and testing equipment is called MSA (measurement system analysis). It indicates the suitability of a testing or measuring instrument for a specific measuring task. It must be taken into account that the measurement is not only dependent on the device but also on the operating personnel. For this reason, each measurement must be assessed with regard to its accuracy, linearity, stability, repeatability and traceability.
Obsolescence management	Ensuring the availability of critical and *discontinued* components
Ppk	Provisional process capability study (used for the evaluation and acceptance of production equipment, process pre-runs, pilot and pre-series production)
ppm	The abbreviation ppm stands for "parts per million" and is used to denote one millionth part of a unit. In quality management, it is therefore used to specify and report error rates or failure frequencies.
ProdSG	Product Safety Act: In Germany, the Product Safety Act regulates the safety requirements of technical work equipment and consumer products.
REACH	REACH stands for Registration, Evaluation, Authorization and Restriction of Chemicals.
RoHS	RoHS stands for Restriction of Hazardous Substances and is a directive regulating the use and placement on the market of hazardous substances in electrical appliances and electronic components
Side letter	Side letter → **Special conditions**. The **special conditions** document items such as additional or changed requirements by means of supplementary or deviating regulations.
SMD	Surface-mount device is a technical term from the electronics sector. In contrast to components installed by means of through-hole technologies (THT), namely "wired components", SMDs do not have any wire connections, but are soldered directly to a circuit board by means of solderable connecting surfaces (flat module).
WEEE	The WEEE directive*(waste electrical and electronic equipment)* serves to prevent waste electrical and electronic equipment and to reduce such waste through reuse, recycling and other forms of recovery. It lays down minimum standards for the treatment of old electrical and electronic equipment within the EU.
Manufacturing concept	The manufacturing concept covers the entire value chain, including sub-suppliers.
C sample	C samples are used for the verification and safe reproducible checking and release of all requirements (Q1 samples).
B sample	B samples are development samples based on the first implementation of requirements, manufactured from test and/or auxiliary tools
D sample	D samples correspond to pilot series parts and are manufactured from series parts using series production processes (Q2 samples).
Merchandise	External finished device with no components and/or sub-assemblies provided by Gira (catalogue goods)
External sales article	External finished device with components and/or sub-assemblies provided by Gira as well as added value from specific Gira requirements
PCP	The process control plan describes the process steps including the sequence in the manufacturing process and the product/process characteristics including the associated monitoring methods.

External sub-assembly	Product with items provided
CC dimensioning	Normative critical dimensions
SC dimensioning	Functionally critical dimensions
MVR	'Melt Volume-flow Rate' – method for measuring the melt flow index
DSC	**D**ifferential **s**canning **c**alorimetry – a method for measuring the amount of heat emitted/absorbed by a sample during isothermal operation, heating or cooling.
BOM	Bill of material

19 Change history

Date	Modified by	Change	Passage/paragraph	Page
13/01/2020	QM – Meyer	Initial creation	None	All
16/04/2020	QM – Meyer	Correction of additions	4.3, 5.2, 18, 20	9, 16, 25, 27
02/03/2021	QM - Walter	Revision	All	All

20 Side letter regarding the quality guideline

Additions to or deviations from the quality guideline agreed between Gira and the supplier by means of a side letter must be in writing and signed and dated by both parties.

In the side letter, written reference must be made to the revision status of the quality guideline, on the basis of which the side letter has been drawn up and agreed.

The side letter will be documented by Gira and the supplier on a separate sheet. Once signed by both parties, the side letter will be an integral part of the signed quality guideline and will be subject to the same period of validity and final provisions (see chapters 16 and 17) of the quality guideline.

Supplementary agreement to Gira's quality guideline (Rev. 3.0, date: 29/04/2020)

In addition to or in deviation from the quality guideline between the supplier and Gira Giersiepen GmbH & Co. KG as of today, the following is agreed:

Radevormwald, _____ _____

Place, date

_____ _____

Gira Giersiepen GmbH & Co. KG Supplier

_____ _____

Gira Giersiepen GmbH & Co. KG Supplier
