



# Directive on First Sample Requirement

**Expectations of PEPPERL+FUCHS in terms of first sample process for external suppliers**

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## 1. Preamble

On account of quality and profitability, the processes for starting series production of new products must run as seamlessly as possible. For this reason first samples that have already been inspected are ordered from external suppliers, before the first series-produced products are delivered. This directive describes the expectations of PEPPERL+FUCHS for a first sample process and make clear the requirements of an initial sample and support the process.

## 2. Purpose of a first sample

- To provide evidence that the supplier is able to meet the specifications required by PEPPERL+FUCHS under series production conditions
- To align measuring equipment and methods with those of PEPPERL+FUCHS
- To obtain an initial indication of the feasibility of the series production process

## 3. Definition of terms

- First samples are procured parts that have been manufactured in full and produced solely under the specific conditions that apply for series production. These specific conditions can be reproduced and their effects fully correspond to those of series production in terms of their dimensional, material, and functional characteristics
- Other samples are not subject to the first sample process

## 4. Criteria for ordering first samples

- In the case of new parts
- When changes have been made to the product
- When changes have been made to the process and require approval (e.g., use of new technology, new manufacturing process, new tools, new production location, new supplier)

Any changes made to the product/process (form, fit, function) must be revealed by the supplier prior to procurement by PEPPERL+FUCHS. Once the scheduling has been agreed, a first sample is ordered via the Procurement Department at PEPPERL+FUCHS. Without an explicit first sample order (order for first sample parts including first sample inspection report), the first sample inspection cannot take place.

## 5. First sample inspection

The first sample inspection is the dimensional, material, and functional testing of the first sample with regard to all of the specifications agreed between PEPPERL+FUCHS and the supplier (e.g., drawings, standards, technical delivery terms etc.).

Test equipment is used that enables the supplier to test the parts for compliance with the prescribed specifications. External services may need to be drawn on in this regard. The evidence must be attached to the first sample inspection report. In any case, the responsibility remains with the supplier. In the case of electrical/electromechanical parts, at least one part must undergo a first



sample inspection. In the case of purely mechanical parts, at least 5 parts must be subjected to this process. The quantity of first samples must be agreed with the Procurement department at PEPPERL+FUCHS. The inspected parts must be labelled to ensure they are clearly assigned to the relevant measured values. Measuring positions in the PEPPERL+FUCHS drawings are stamped, and the first sample parts are numbered. If additional measurement specifications are available, the supplier has to use it for measurement evaluation and to submit the result in the report.

In the case of tools with multiple mould cavities, the first sample from each mould cavity must be inspected and documented. A tool-specific part counts as approved only when the parts from all the mould cavities correspond to the specifications.

## 6. First sample inspection reports

The first sample inspection report compiles all of the target and actual data, and consists of a dimensional, material, and functional report, where appropriate. The supplier's own forms or commercially available forms such as those from the VDA (German Association of the Automotive Industry) can be used for the first sample inspection report. The report should be available in bilingual form in both German and English or in English only.

Samples to PEPPERL+FUCHS Drehgeber GmbH see Appendix.

Samples to PEPPERL+FUCHS South East Asia Group (Singapore and Vietnam) see Appendix.

The first sample inspection report contains the following information as a minimum:

- a) The PEPPERL+FUCHS specifications (drawings) with the measured variables marked (stamped) and numbered (if not already part of the drawing e.g. through marking \*No\*)
- b) Target/actual comparison for each measured variable together with the permitted tolerances.  
A range for one characteristic over all samples is not allowed
- c) Measuring equipment used
- d) Evidence or inspection reports regarding materials and/or functions
- e) Tool number (in the case of tool-specific parts)
- f) If expected, proof of machine and (preliminary) process ability  
The manufacturing process in the series should have a maximum error content of < 66ppm. This corresponds to a process capability of Cpk value > 1.33.

If an item is changed, only the altered characteristics need to be taken into account. Deliveries must not be made without prior consultation with PEPPERL+FUCHS in the case of deviations.



## 7. Crosschecking at PEPPERL+FUCHS

Once the first sample and first sample inspection report have been submitted, PEPPERL+FUCHS will retain them for crosschecking and perform additional randomized tests at its own discretion, leading to one of the following decisions:

- Approval
- Approval subject to conditions\*
- Rejection, new first sample required

\*sample checking by PEPPERL+FUCHS Drehgeber GmbH appendix is valid

The supplier will be informed of the results of the crosschecking process in writing. If a first sample is rejected, a new first sample inspection report must be created on redelivery. Once the scheduling has been agreed, a first sample is ordered via the Procurement Department at PEPPERL+FUCHS. For characteristics not tested by PEPPERL+FUCHS within the framework of the crosschecking process, the information given by the supplier in the first sample inspection report applies.

In the case of approval, the subsequent deliveries are subject to the contractually agreed or legally applicable warranty regulations.

In addition to the first sample inspection report, a declaration of conformity must also be enclosed with the delivery, provided that it concerns a safety-related component (highest respective index of applicable document 32-0028\_).

## 8. Set-up

First sample inspection reports shall generally be delivered together with the samples. Exception are deliveries to the location PEPPERL+FUCHS in Mannheim. The reports have to send here to the following email address: [wek@de.pepperl-fuchs.com](mailto:wek@de.pepperl-fuchs.com). If the manufacturer-specific first sample inspection report is missing, the submission is categorically rejected. The packaging of the first sample must be clearly labelled with a note stating the product is a first sample. All first sample parts supplied must be clearly allocated to the first sample report (via PEPPERL+FUCHS item number and PEPPERL+FUCHS drawing number).

## 9. Settlement of costs

Should resampling be required due to failure to meet the specifications, all costs incurred by PEPPERL+FUCHS will be charged to the supplier from the second resampling onwards. The standard hourly rates will apply for invoicing the costs. The precondition is that no technical changes were introduced by PEPPERL+FUCHS between the first sample being delivered and the second resampling process.



## 10. Appendix

Considering characteristics regarding PEPPERL+FUCHS Drehgeber GmbH:

\* In decision "Approval subject to conditions", new samples are required.

Proof of the deviating characteristics are necessary.

For the documentation of the first sample report the template FTM-0807 should be used. In general all report templates according to VDA will be accepted.

Metrologically determined measurements are:

(Necessity of concrete measured value of the measured characteristic)

- a) Dimensional + Geometrical tolerances  
(Gaussian filter, low-pass Cut-off at wave number 50, centring-circle according to DIN ISO 1218-1,2 centring-methode for geometrical tolerances MZCI [minimum radius distance], for dimensional tolerances/running tolerances:  
At outer diameter MCCI [circumscribed-circle],  
at inner diameter MICI [inscribed-circle]
- b) Fit size
- c) Length-, widths-, depths- and diameters
- d) Angel
- e) Hole circle
- f) Useable thread length
- g) Chamfer (only if additional tolerance specifications are given, except free size tolerances)
- h) Finish roughness for subsections in the drawing, valid to single characteristic

Measure with gauge: (documentation with ok/nok):

- a) Radius
- b) Thread (except depth of thread)
- c) Angle of chamfer and lead in chamfer

Correctness of execution (documentation with ok/nok):

*(And thereby the correctness of measurement/details are documented)*

- a) Design of adhesive groove
- b) Chamfer (without additional tolerance specification e.g. only free size)
- c) Transition radius
- d) Edge break/deburring
- e) Undercuts
- f) Angle of countersinking of holes
- g) Centering holes
- h) Bending edges



Considering document requirements regarding PEPPERL+FUCHS South East Asia Group:

The supplier shall submit the samples and documents according to the checklist FTM-A0D3...