Leaflet on Sampling

1. Contractual Basis

The drawing, 3D model, technical delivery terms and other technical specifications for the part to be supplied constitute the contractual basis for the initial sample inspection.

The initial sample inspection demonstrates that the part as “initial sample” (definition: manufactured using the final production equipment and tools under series production conditions), including all required documentation, complies with the contractual requirements.

In the event of any discrepancies between the requirements defined in the leaflet on sampling and those defined in the Process Requirements, the Process Requirements shall prevail.

2. Release as a Prerequisite for Series Delivery

The initial samples, including the documentation, must be submitted to BSH Hausgeräte GmbH and its affiliates (hereinafter referred to as “BSH”) by the agreed sample deadline. Series production and deliveries of products may only begin once the supplier has demonstrated their ability to meet the specified Process Requirements and the BSH Quality Management (hereinafter referred to as “BSH QM”) has granted the part release.

If, by way of exception, only a limited release can be granted by BSH, deliveries may only be made in accordance with the provisions outlined in the inspection report (conditions, quantity, schedule). If neither a limited nor an unlimited release has been granted, series deliveries are not permitted.

If the supplier receives a series delivery order although no release has been granted, he must request the release from BSH in a timely manner.

With the release of the submitted initial samples, the supplier undertakes to guarantee that the products in series production consistently meet the quality of the approved samples.

3. Component Qualification Planning (CQP)

With the request for quotation, criteria for the required component qualification planning (CQP, with reference to PPAP/PPF), will be provided to the supplier as part of the Process Requirements document. The aim is to ensure an early involvement of the supplier in BSH`s product development process.
The component qualification planning is intended to provide an overview of the specific BSH requirements, which are mandatory for the part and process qualification.

The part classification (A/B/C) is defined by BSH and is based on both the functional relevance of the purchased part in the final product and the complexity of its production process. The part classification defines the scope of required release documentation.

The supplier must incorporate the requested activities according to the component qualification planning in their internal project planning and comply with the delivery deadlines for required information and release documentation as agreed with BSH QM.

With the submission of the offer, the supplier confirms the fulfillment of the requirements for component qualification and the further contractual obligations in section 1.

Any deviations, risks, or further comments regarding the contractual foundations in accordance with section 1 must be indicated through the feasibility study (Feasibility Commitment) and agreed with BSH before conclusion of the contract.

In the event of changes, the supplier must send an updated Feasibility Commitment document to BSH without prior request.

4. Scope of Initial Sample Inspection

With the initial sample inspection, the supplier demonstrates the following:

- the part meets the contractual requirements according to section 1
- the part is inspectable and measurable at the supplier
- the compliance of the used substances and materials with the applicable legal requirements, such as RoHS, REACH, as well as any customer-specific requirements

Before start of serial production and deliveries, initial samples must be submitted in a timely manner. This applies to the following cases:

- Any changes to the PRODUCT, particularly any changes to functionally, processing- or safety-relevant product parts (e.g.

bought-in parts, material)

- Changes to manufacturing processes, equipment, procedures and materials
- Change of a sub-supplier
- Changes in test procedures, equipment
- Relocation or establishment of production sites
- Other changes where an influence on the quality cannot be excluded
- For necessary follow-up sampling due to an expiring limited release

In the event of process changes, or if no deliveries have been made during the last two years, the need for a renewed initial sampling must be clarified with the BSH QM of the respective location. Any deviation from the specifications must be resolved or agreed with BSH before the initial samples are shipped.

The initial sample inspection of the supplier must be performed with suitable and calibrated measuring equipment.

5. Supplier Inspection Report

The supplier is requested to use the BSH templates for the initial sample presentation and, if available, to include the measurement machine protocol or measurement machine report.

The electronically completed documents, as well as additional documents for the clear assignment of the specified criteria, are to be sent to the email address specified by BSH or uploaded through a BSH-specified portal.

If the documents are sent in advance via email, the subject line must include the supplier's name and at least one material number.

6. Inspection Scope for Special Characteristics

Safety characteristics (former Critical Characteristic (CC))

A characteristic is safety-relevant, when already a minimal deviation of the characteristic leads directly to an immediate risk to life and limb.

For safety characteristics, BSH requires that 100% of the parts comply with the tolerance limits. This always applies to all measurements.

Legal characteristics (former Significant Characteristic (SC))

A characteristic is legally relevant, if the characteristic does directly reflect an individual legal requirement.

For **release of parts**, the machine capability needs to be ensured. The short-term process capability $C_{pk\text{-}ST} \geq 1{,}67$ must be proven. For **series production**, a risk-based inspection method (e.g. SPC $C_{pk} \geq 1{,}33$, Poka Yoke system, inline detection, OK/NOK…) including the scope of inspection (n and m) must be defined. For details, see following table.

Functional characteristics (former Significant Characteristic (SC))

A characteristic is functionally relevant, if already a minimal deviation of the characteristic leads to the early, unexpected break down of a product key functionality or of the product itself during the use in the field.

For **release of parts**, the machine capability needs to be ensured. The short-term process capability $C_{pk\text{-}ST} \geq 1{,}67$ must be proven. For **series production**, a risk-based inspection method (e.g. SPC $C_{pk} \geq 1{,}33$, Poka Yoke system, inline detection, OK/NOK…) including the scope of inspection (n and m) must be defined. For details, see following table.

Inspection characteristics (former Important Characteristic)

Inspection characteristics are not special characteristics but are used to document qualitative product features that have a certain impact on quality and are not critical to safety or legally relevant.

For **release of parts**, the machine capability needs to be ensured. The short-term process capability $C_{pk\text{-}ST} \geq 1{,}67$ must be proven. For **series production**, the processing of inspection characteristic during ongoing production is contained in the relevant transfer document (e.g. Control Plan) and is a result of the alignment between the supplier and the BSH technical team. For details, see following table.

Manufacturing characteristics

Product characteristics relevant to process control must be documented on the drawing where applicable. These characteristics are used to control or to monitor the process.

General characteristics (former Relevant Characteristics)

General characteristics are not special characteristics. The category is used for dimensions, which have minor influence on safety,

function or manufacturing processes.

For part release, the parts need to be within specification. For **series production**, the processing of a relevant characteristic during ongoing production is contained in the relevant transfer document (e.g. Control Plan) and is a result of the alignment between the supplier and the BSH technical team.

Overview Chart

As of 15.07.2024, the notation of special characteristics in BSH has been changed. Existing drawings remain valid, the symbol reference between old and new is shown in the table below.

Inspection measures for characteristics

used until 06/2024		Special characteristics				
	Category	1. Critical characteristics 123,45 ±0,2 CC	2. Significant characteristics 123,45 ±0,2 SC	3. Important characteristics 123,45 ±0,2	4. Relevant characteristics 123,45 ±0,2	

Used from 07/2024		Special characteristic			Additional characteristic		
	Category	**S**afety characteristic 123,45 ±0,2 S	**L**egal characteristic 123,45 ±0,2 L	**F**unctional characteristic 123,45 ±0,2 F	**I**nspection characteristic 123,45 ±0,2 I	**G**eneral characteristic 123,45 ±0,2	**M**anufacturing characteristic 123,45 M
	Criterion before series release	Compliance must be ensured for any delivery to BSH!					
	Criterion for restricted series release	Same as criterion during running production	Proof of manufacturability by means of a machine capability analysis must be provided in a suitable form. ($C_{mk} \geq 1,67$)			within tolerance	Relevant tolerances to be defined from process responsible inside the control plan or inspection plan. No general tolerances valid.
	Criterion for unrestricted series release	Same as criterion during running production	Statistical evidence of process capability must be provided in a suitable form. ($C_{pk\text{-}ST} \geq 1,67$)			within tolerance	
	Criterion during running production	A risk-based inspection method (e.g. SPC Cpk ≥ 1,33, Poka Yoke system, inline detection, OK/NOK…) including the scope of inspection (n and m) must be defined for each characteristic in the transfer document (QAP, control plan, inspection plan or similar) and in alignment with the BSH technical team.			according to QAP, control plan, inspection plan or similar in alignment with the BSH technical team		

Applicable to **all special characteristics**: If a risk-based inspection method cannot be applied, a 100% test must be carried out.

n / m	**n**: Quantity of parts in a row / **m**: Number of representative production lot or batch, representing different events (e.g. shifts, material change, setup process, etc.) to cover all possible influencing factors on the manufacturing process.
SPC	Statistical Process Control incl. regularly process capability revalidation; SPC is only applicable, if there is a technical possibility to adjust the process.
C_{mk} Machine capability index	The machine capability needs to be proven (usually with $C_{mk} \geq 1,67$ for 50 parts). The minimum requirement for the number of produced and measured parts is 50 (100 parts would be even more beneficial). If this number cannot be met, the C_{mk} value increases accordingly. The calculations need to be done with regards to Bosch Booklet No. 9 and in alignment with the BSH technical team.
$C_{pk\text{-}ST}$ Process capability index short-term (former P_{pk})	To use parts in series production the relevant characteristics need to have a proven process capability. For the start, a $C_{pk\text{-}ST} \geq 1,67$ must be proven. If the usual scope of inspection n = 5 and m = 25 cannot be used for the calculation, a suitable scope must be specified with regards to the process, in accordance with Bosch Booklet No. 9 and in alignment with the BSH technical team.
C_{pk} Process capability index	To use parts in series production the relevant characteristics need to have a proven process capability. Usually, $C_{pk} \geq 1,33$ must be proven. If the usual scope of inspection n = 5 and m = 25 cannot be used for the calculation, a suitable scope must be specified with regards to the process, in accordance with Bosch Booklet No. 9 and in alignment with the BSH technical team.

7. Contents of the Inspection Report

Together with the initial samples, the supplier must submit an inspection report in the format specified in section 5, covering all characteristics defined in the contractual basis outlined in section 1, which demonstrates:

- Revision status of the drawing and other base documents
- Indication of the tool as well as cavity nests in multi-cavity tools
- Information about sub-suppliers
- For each characteristic:
  - Target value with tolerance
  - Actual value
  - Highlighting the characteristic when actual value is outside the tolerance
- For multi-cavity tools: separate inspection protocol for samples from each cavity
- Clear identification of the samples included in the inspection report to ensure results can be matched
- Sample part weight information in grams or kilograms
- For special characteristics:
  - Sampling scope and sample size
  - Mean and standard deviation (variation)
  - Capability indices

The individual values of the respective machine or process capability analyses must be provided.

Machine and preliminary process capability, as required according to the characteristic category, must be proven with the initial sample documentation (see description section 6).

The evidence of long-term process capability is to be submitted to BSH proactively as soon as possible.

8. Shipping and Secure Receipt

The secure and prompt shipment of initial samples with inspection reports is of particular importance, especially in time-critical projects.

- Initial samples must not be delivered together with regular production shipments
- Delivery in separate containers or packaging with a separate delivery note including the order details
- Adequate protection of the parts against damage and environmental influences
- Containers or packaging must be clearly marked with ”Sample Shipment“ (“Mustersendung”)

BSH forms and guidelines must be used and strictly followed.

Further information on this can be found in the BSH Supplier Quality Assurance Manual:
https://ocp.bsh-group.com/en/documents

For any questions, contact the designated BSH QM representative.