BRCGS Standard for Packaging and Packaging Materials
P509 – Calculating Audit Duration

Document Scope:

This document outlines the factors to be used in the calculation of audit duration for sites using the BRCGS Standard for Packaging and Packaging Materials, Issue 5.

Change log

Version no.	Date	Description
1	April 2016	Replaces P051 audit duration calculator.
2	April 2016	Correction of detail in calculation table
3	April 2017	Inclusion of information on additional time for Modules
4	August 2018	Further guidance on manufacturing categories and key processes (appendix 1).
5	16/07/2019	New BRCGS logo and footer changed

Introduction

The BRCGS have developed this audit duration calculator with the BRCGS Technical Advisory Committee and a working group of Certification Bodies in order to provide a more transparent and consistent approach to establishing audit duration. In accordance with the calculator and current practice the typical audit duration shall be 1.5 days of which a minimum of 4 hours shall be spent auditing the production environment.

The audit calculator shall be used as the basis for allocating audit duration for all audits undertaken from the 1st of October 2016, however Certification Bodies may use this calculation upon release.

The audit duration calculator is based on:

- Number of employees – as full-time equivalent production and warehousing employees per main shift, including seasonal workers.
- Size of the manufacturing facility - including storage facilities on site
- The number of key processes included within scope – a key process is defined as the main operation that a site has. Examples of key processes are listed in the appendix.

Focus on key processes is intended to reflect that the fields of audit of Issue 5 are now focused on the manufacturing of packaging or packaging materials, rather than the materials they are made from. Therefore, additional processes to those key processes (such as adding print to the manufacture of beverage cans) will require additional time. Appendix 2 of the Standard lists the fields of audit with examples of packaging components and activities.

	Audit duration in days based on 1-3 key processes (audit day = 8 hours)			Corresponding minimum time within production environment in hours.		
	Size of manufacturing facility					
No. of employees	<10 k sq. m	10k – 25k sq. m	>25k sq. m	<10 k sq. m	10k – 25k sq. m	>25k sq. m
1-50	1.5	1.5	1.5	4	4	4
51-500	1.5	2	2.5	4	5.5	7
501-1500	2	2	2.5	5	5	7
>1501	2.5	2.5	3	7	7	8

Table 1. Table of audit duration

Multiple identical key processes, such as several injection moulding machines, or more than one furnace in a glass manufacturer, need not extend audit duration as

sampling during the audit should address those identical functions. Where key processes are similar but differ, such as the injection moulding of caps and closures, plus the injection blow moulding of bottles, additional time shall be allocated.

The other factors identified in the Standard may influence the calculation but are considered to be less significant. These other factors shall not influence the audit duration by more than 30% from the total calculated audit duration.

Size of manufacturing facility refers to buildings, plus any external covered or uncovered storage areas.

Time allocation for additional processes

Additional processes	Additional hours to total audit duration	Additional time within the production environment
1 – 3	0.5 days	1.5
4 – 8	1 day	2.5 hours

Table 2. Additional time allocation

Additional processes may include: printing/decoration of glass containers at a glass container manufacturer, printing of extruded flexible film at a site that extrudes film, Cutting and creasing of paperboard where manufacture of paperboard is the main process.

Factors that decrease audit duration

- Where less than 50% of the total manufacturing and storage facility site size is utilised as production or storage space, the audit duration may be reduced by 30%.
- The site carries out one simple process, such as the slitting and rewinding of films

It is recognised that the audit of a site against the requirements of the Standard will involve both time spent within the production environment and time spent reviewing records and procedures within an office.

It is expected that wherever practicable, evidence should be gathered within the production environment through interviewing staff, observing working practices and reviewing process controls and records. At a typical audit, 30-50% of the total audit duration, e.g. minimum of 4 hours of a 1.5 day audit should be spent within the production environment.

Where the audit duration is increased in line with the size of the site, additional time shall be spent within the production environment.

The company profile section of the audit report shall include the information needed to calculate the audit duration, e.g. number of employees and size of the factory. The detailed section of the audit report should provide an outline of the product types manufactured and the number of key processes occurring on site.

Justification shall be given where either the total audit duration or time spent within the factory varies from the calculated values according to this procedure.

Recording audit duration

On site audit duration should be stated in man hours (whole number e.g. 17 not 16.5) giving the total time at the site conducting a BRCGS audit (including time in production). Where a combination of audits has been undertaken e.g. BRCGS and ISO22000, then a calculation for the total time taken for the BRCGS audit only should be stated.

Similarly, where the audit has been undertaken by an audit team, then the time should be specified as the total man hours spent on the audit e.g. 2 auditors spending one 8 hour day on site = 16 man hours.

The total hours shall not include any calculation for writing of the final audit report away from site. This is additional time and is typically 4 – 8 man hours.

Duration of production facility audit should be stated in man hours (whole number e.g. 6 not 5.5) giving the total time (man hours) that has been spent in the production environment. This should be part of the site audit time and not additional to it.

Unannounced audits

This calculator shall be used for Option 1 – full unannounced audits. For Option 2 – two-part audits, this calculator shall be used and the allocated time split evenly across the two parts of the audit. Where audits are calculated at 1.5 days, this may mean that the two part audit becomes two one-day audits.

Global Markets audits

Global markets programme audits are anticipated to be much shorter than certification audits. As a guide, basic level audits will take up to one day including audit report completion, and intermediate level audits will take one day, plus additional time required for the audit report.

Additional Modules

The Standard has been designed to enable the addition of voluntary modules to the routine audit. Where a site requests that a voluntary module(s) is included with the audit, additional time will be needed for that audit. The amount of additional time will depend upon the module or combination of modules chosen. The typical additional time required is detailed in the protocol section of the individual modules. At the time of publication of this document, these times are:

Module No.	Module Title	Typical additional time
7	Traded Goods	1 hour
8	Environmental Awareness Module	1 working day (8 hours)
9	AuditOne	Half working day (4 hours)

Appendix 1 - Manufacturing categories and typical key processes.

Manufacturing Category	Scope of manufacturing category and typical key processes
Glass manufacture and forming	Key processes include: • Raw materials to finished product of glass containers from one furnace through independent section machine(s) to cold end lacquer(s). Additional furnaces are additional key processes. Any print/decoration is an additional key process. Typical manufacturing techniques: • Blow and blow • Press and blow • Extrusion of ampoules • Forming and firing of ceramic bottles, jars or decanters
Paper making and conversion	Pulp to sheet or web, or conversion of sheet or web-fed paper where no printing operations take place (printing activities are additional key processes). Any print/decoration is an additional key process. Key processes include: • Manufacture of paper from raw materials (e.g. tree)/pulp to sheet or web (board, liner, cartonboard) • Die cutting, folding and gluing (erecting) • Corrugating (from pulp, to corrugated sheet/reel) • Conversion of paper sheet into bags or sacks (incl. stitching) • Manufacture of self-adhesive label stock (label and carrier/substrate) • Die-cutting of sheet or web (incl. corrugated) to pads or fitments • Moulding of pulp (of any source) into trays or fitments • Manufacture of spirally wound tubes (incl. trimming and cutting)
Metal forming	Smelting of raw materials into aluminium, steel, or tin, AND conversion of those materials into packaging containers/materials. Any print/decoration is an additional key process. Key processes include: • Smelting with output to sheet or reel • Rolling/pressing of aluminium foil • Slitting or trimming or aluminium foil • Pressing of foil trays or containers • Impact extrusion • Manufacture of three-piece can bodies

	• Manufacture of two-piece can bodies (steel or aluminium) • Manufacture of can-ends • Stamping / punching of closures (compounds or wads are a raw material for metal closures and a second manufacturing category is not required)
Rigid plastics forming	Forming of resin into rigid plastic packaging materials. Any print/decoration is an additional key process. Key processes include: • Injection moulding • In-mould labelling (additional key process if labels not applied in other processes on site) • Blow-moulding (extrusion / injection / press) • Thermoforming
Flexible plastics manufacture	Forming of resin into flexible plastic packaging materials, AND laminating of multi-material layers into one layer. Any print/decoration is an additional key process. Key processes include: • Extrusion (cast / blown) (addition of shoulder for flexible tubes can be included as part of first key process) • Laminating (of any material) • Laminating and seaming of flexible tubes, addition of shoulder • Construction of plastic bags, pouches and sachets • Vacuum metallising • Blow Moulding • Winding/rewinding films; slitting, scoring, perforating • Coating (e.g. wax)
Other manufacturing	This category will encapsulate the manufacture of those materials not able to be classified into other categories. Key processes include: • Construction of pallets, boxes and crates, decorative wooden boxes • Processing of wood for food and cosmetic use, wooden utensils (e.g. for lollipops) • Processing of natural cork, rubber • Construction of hessian sacks, jute products, woven string (plastic or cotton) • Processing of strings for tea bags or meat-packing.
Print processes	Any packaging material which is printed using any of the following print processes (each constitutes one key process) in addition to any manufacturing process:

	• Flexographic, lithographic, gravure, letterpress (and offset) • Screen, tampo or digital print • Decoration by hot or cold stamping/blocking Any post printing conversion, such as cutting/creasing and gluing of folded cartons, is considered part of print processes, as printed packaging materials are typically converted further once printed. Specify printing technologies used at the site.
Chemical processes	Essentially, the manufacture of raw materials used in the printing and conversion of other packaging materials. This includes the manufacture of: • Resins • Adhesives • Inks, varnishes and coatings

Appendix 2 – Examples of scopes and key processes

Examples:
The manufacture of premium flint, standard and coloured glassware in wide mouth and narrow neck formats for the food and beverages industries by blow-blow and wide and narrow neck press blow. Print and labelling as required. (Two furnaces feeding into 5 independent section machines.) *Key processes here are 2 x furnaces, print processes = 3 key processes. Applicable manufacturing categories are 01 – glass manufacture, 07 – print processes. Labelling is considered decoration but print processes is not applicable as print activity occurs elsewhere.*
Die-cutting and folding and gluing corrugated trays for fruits and vegetables. Die-cutting and flexo printing corrugated cases for food products. *Key processes here are die-cutting, print = 2 key processes. Applicable manufacturing categories are 02 – Papermaking, 07 – Print processes. Both are required as some products, not all are not printed, papermaking is applicable where no print processes are carried out.*
Impact extrusion and offset print or labelling of aluminium flexible tubes for hand creams and other personal care products. *Key processes here are impact extrusion, print = 2 key processes. Applicable manufacturing categories are 03 – metal forming, 07 – print processes.*
Injection moulding of tubs and handled pails with in-mould labelling, for use with food, and toy products *Key processes here are injection moulding, labelling, application of handles = 3 key processes. Applicable manufacturing categories are 04 – rigid plastics*
Lamination of multilayers films (paper, aluminium, polymer), rotogravure printing, and slitting for food contact packaging. Materials involved PA, PE, PP, PET , EVOH, Aluminum, paper. *Key processes here are laminating, printing, and slitting = three key processes, applicable manufacturing categories are 05 – Flexible plastics, 07 – Print processes.*
Manufacture of bamboo containers for fresh fish products and food service. Key processes here are bamboo conversion/forming = 1 key process. Applicable manufacturing categories are 06 – other manufacturing.
Printing and conversion of paper sheet into papers for bakeries. *Key processes here are print = 1 key process. Applicable manufacturing category is 07 – print processes.*