



# OVERVIEW OF THE STANDARDS FOR **FOOD SAFETY MANAGEMENT SYSTEMS AND FOOD PACKAGING DESIGN AND MANUFACTURE**

**A DISCUSSION ABOUT FOOD SAFETY MANAGEMENT SYSTEMS AND FOOD PACKAGING DESIGN AND MANUFACTURE STANDARDS: ISO 22000, PAS 223 AND FSSC 22000**

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# ABSTRACT

This document aims to provide an overview of the standards for food safety management systems related to the production of food packaging. It discusses how the food packaging industry came together to develop PAS 223 'Pre-requisite Programmes and Design Requirements for Food Safety in the Manufacture and Provision of Food Packaging' and how this, coupled with ISO 22000 now forms the Food Safety Systems Certification (FSSC) 22000 standard for food packaging. This is explained within the context of food packaging issues such as the potential migration of harmful chemicals or other contaminants to the food and the potential dangers associated with increased use of recycled materials and mislabelled products.

The Global Food Safety Initiative (GFSI) Guidance Document is outlined, detailing how the August 2011 edition incorporates key elements related to food packaging safety. The FSSC 22000 standard (ISO 22000 + PAS 223) has since been submitted for GFSI benchmarking in-line with this update. There then follows an explanation of the ISO 22000 and PAS 223 standards and certification processes followed by the benefits of FSSC 22000, which brings the standards together to provide a comprehensive food safety management system standard. The document also includes a review as to how organisations can integrate the management systems for quality and product safety, environment, health and occupational safety.

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# I. EXECUTIVE SUMMARY

Packaging plays a vital role in preserving the safety and quality of our food products. However, like any step in the food supply chain, things can go wrong which ultimately affect the health and well being of the consumer. This leads to potential consequences for the food manufacturer and the food packaging manufacturer in terms of loss of reputation, loss of business and prosecution. The main cause of food product recall is mislabelled food packaging, which diminishes consumer confidence and impacts the food industry heavily in lost revenue.

In 2005, the International Standards Organisation published ISO 22000 'Food Safety Management Systems – Requirements for Any Organisation in the Food Chain', which was based on the Hazard Analysis of Critical Control Points (HACCP). Manufacturers had used HACCP for a number of years to evaluate ingredients and processes, and to prevent or reduce product contamination. Food manufacturers soon realised the potential of a single

food safety management umbrella in this *Codex Alimentarius* HACCP-based ISO standard, and how at every level of the food chain it made it easier to train, implement and audit the management of food safety. The Global Food Safety Initiative (GFSI) accepted ISO 22000, after PAS 220 'Pre-requisite Programmes for Food Manufacture' was developed to partner ISO 22000, bridging the gap required for GFSI recognition. The two standards together became the Food Safety Systems Certification (FSSC) 22000 standard.

Aware of the need to extend the recognition of ISO 22000 to food packaging, a group of leading global packaging and food manufacturing companies (including from the packaging world: Alpha, Amcor, Owens-Illinois, Rexam and TetraPak; and from the food manufacturing world: The Coca-Cola Company, Danone, Nestle, Kraft Foods and Unilever) developed Publicly Available Specification (PAS) 223 'Pre-requisite Programmes and Design Requirements for Food Safety in

*the Manufacture and Provision of Food Packaging*'. PAS 223 is applicable to all organisations, regardless of size and complexities, which manufacture food packaging. It specifies requirements for establishing, implementing and maintaining prerequisite programmes (PRPs) and design requirements to assist in controlling food safety hazards in the manufacture of food packaging. With the extension of the FSSC 22000 certification scheme to include food packaging using PAS 223, and the revision of the GFSI guidelines to include food safety requirements for food packaging, PAS 223 adds another link in the end-to-end supply chain approach of ISO 22000 to managing food safety.

Food manufacturers appreciate the common approach of ISO 22000 and PAS 223. With these two standards the packaging manufacturers and the food manufacturers can work together under one food safety management system to increase consumer confidence and reduce packaging related food safety issues.



# II. PACKAGING AND FOOD SAFETY

Packaging plays a vital role in preserving the safety and quality of food products throughout the food chain, by ensuring:

- Shelf life is maximised
- Food has not been tampered
- Information is presented on the safety, preparation and nutritional content of the food
- Information is presented on the date and location of manufacture

As with all steps in the supply chain, food packaging manufacture has the potential to introduce hazards (chemical, microbiological and physical) and contaminate the food with potential effects for consumer safety. Legislation exists in many countries to prevent harmful chemical migration from food contact materials that would endanger human health and regulations require that food contact materials be manufactured in compliance with good manufacturing practice. This means food contact materials must be traceable at all stages of manufacture, processing and distribution, and comply with specific measures (e.g. limits of migration and documents of conformity). The formal food safety management system, assessed by third parties, is generally accepted as the essential system in place to manage these regulatory requirements for food safety.

## INCREASING PRESSURE TO USE RECYCLED MATERIAL

The increasing pressure to use recycled material in food packaging manufacture presents its own risks to food safety. Government scientists in Switzerland recently reported quantities of mineral oils between 10 and 100 times above the agreed limit in foods like pasta, rice and cereals sold in cartons made from recycled cardboard. As a result cereal firms (Jordans, Kellogg's and Weetabix) have taken steps to reduce the amount of mineral oil in their packaging.

New materials based on starch, sugars and plant fibre will become more available in the future due to the energy savings and low carbon footprint involved in their manufacture. The intended use of these materials and their development and manufacture must however be fully assessed and controlled to limit the risk of food hazards entering via these new food packaging materials.

## HAZARDS RELATED TO MISLABELLED FOOD PRODUCTS

The number one cause for recalls in the UK and the USA last year was mislabelled food products. Incorrect labelling and mixed packaging sent to food manufacturers can all be to blame, costing the industry millions and costing some manufacturers even more – their reputation.

In mislabelled food products unidentified allergens constitute the primary packaging issue. When a person allergic to an ingredient consumes a food product containing that allergenic ingredient the consequences can be serious and in some cases fatal. Special dietary products, which are mislabelled (e.g. fat free and sugar free products placed in ordinary product packaging) lead to serious consequences for diabetic or Kosher consumers. If temperature-sensitive products are mislabelled and subsequently do not have the requisite storage, preparation or use-before information, it can potentially lead to the risk of multiplication in pathogenic micro-organisms (e.g. E. Coli) and result in food poisoning on consumption.

## HAZARDS RELATED TO CONTAMINATION

The presence of food allergens in food packaging, from intentional raw materials or from cross contamination (during storage, processing or transport from raw material to finished product),

is recognised by food manufacturers as potentially serious. The use of HACCP and the implementation of good manufacturing practice (in the form of PRPs) allow effective allergen management control.

Glass contamination and defective glass container manufacture can also be a serious risk to the food product and present another food safety hazard from packaging manufacture. A glass and brittle plastics control programme with an appropriate hazard analysis and risk assessment is essential to reduce the risk of splinters and breakage contaminating the food.

Many other potential packaging related food safety issues also need addressed and controlled by an effective food safety management system, including: mould; taints/off-odours; evidence of pest infestation; product leakage/faulty containers; chemical contamination; incorrect modified atmospheres; and transferable ink.

## CO-OPERATION TO HARMONISE ALL FOOD SAFETY SYSTEMS

All of this emphasises that hazards related to packaging and labelling materials are just as serious as those related to the food. Co-operation between the packaging manufacturer and the food manufacturer is essential to make sure all food safety systems are harmonised. Packaging manufacturers need to know what controls food manufacturers have in place and vice versa. The use of ISO 22000 as a single food safety management system will make it easier to train, implement and audit food safety management at every level of the food chain. This, together with PAS 223 for the food packaging industry, means an effective risk-based system to control and reduce food safety hazards and demonstrate due diligence.

# III. THE GLOBAL FOOD SAFETY INITIATIVE (GFSI) BENCHMARKING FOR FOOD PACKAGING

The Global Food Safety Initiative (GFSI) has the primary purpose of ensuring the safety of food reaching all consumers internationally as a response to the food safety scares in early 2000. The GFSI also leads the global food industry towards a harmonised approach to food safety management systems with a view to develop efficiencies, promote transparency, guide cost savings and establish a platform for continuous improvement. This has led to the development of the GFSI Guidance Document – a multi-stakeholder document setting out the requirements for food safety management schemes and providing a framework for benchmarking these schemes.

The GFSI Guidance Document (Sixth Edition, Issue 2 Version 6.1, issued in August 2011) incorporates key elements that shall be in place for the recognition of food safety requirements for the Production of Food Packaging (Part III Scope M).

These key elements include:

- Food Safety Management Systems
- Good Practices and HACCP requirements (GAP/GMP/GDP)
- Requirements for the delivery of food safety management systems

The food safety management schemes can now submit their standard to begin the benchmarking process and receive recognition under this scope. It is expected that the foundation of FSSC 22000 will submit their food packaging scheme (ISO 22000 + PAS 223) to GFSI for the benchmarking process.



# IV. AN OVERVIEW OF ISO 22000 AND PAS 223

The International Standard ISO 22000:2005 specifies requirements for a food safety management system based on four key elements:

- Interactive communication
- System management
- Prerequisite programmes
- HACCP principles

ISO 22000 is aligned with ISO 9001 and embraces the management system approach:

- Plan
- Do
- Check
- Act

ISO 22000 has been designed to be applicable to all organisations in the food chain: from feed producers and primary producers through to food manufacturers; food packaging manufacturers; transport and storage operators to retail and food service outlets; as well as other supporting industries (manufacturers of equipment, cleaning agents, additives and ingredients).

The Hazard Analysis and Critical Control Point (HACCP) system, developed by *Codex Alimentarius* (the FAO/WHO organisation that sets food safety standards that are adopted by countries worldwide), is the basis for ISO 22000. HACCP involves a systematic approach of identifying food hazards, whether chemical (including allergens), physical or microbiological. HACCP also establishes Critical Control Points (CCPs) with monitored critical limits that determine pre-defined actions should these critical limits be exceeded.

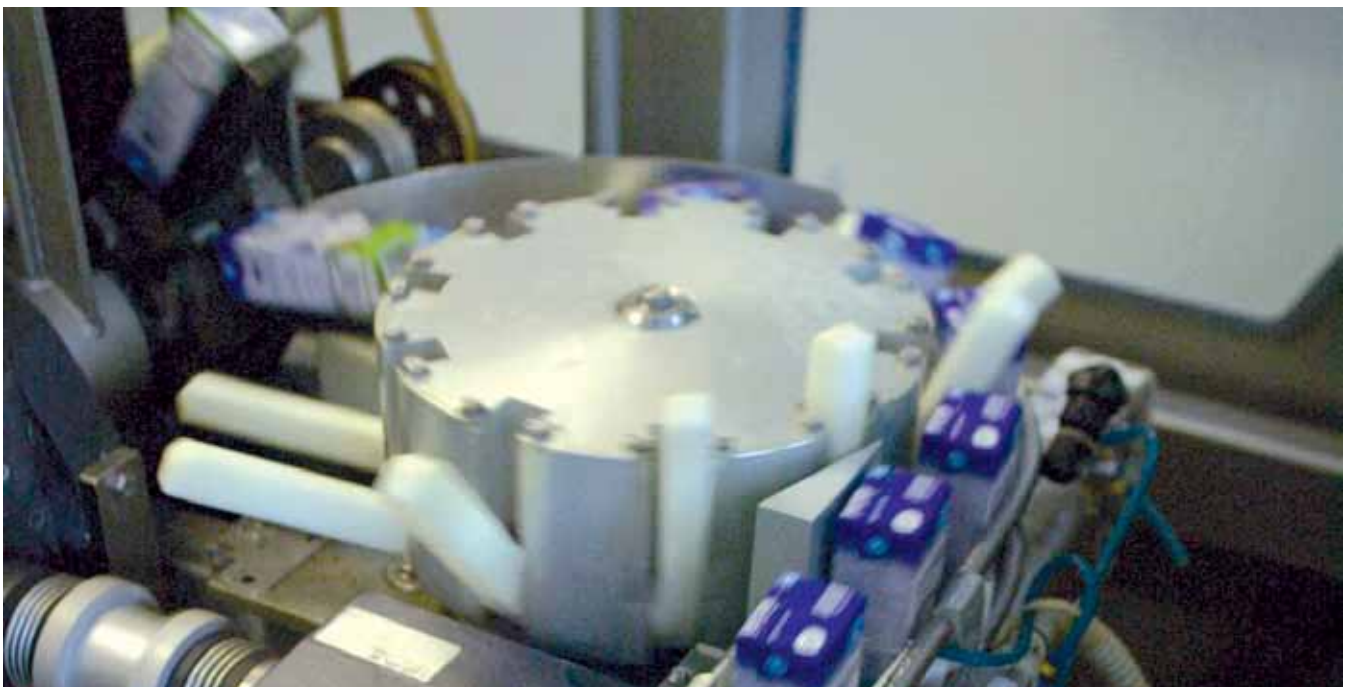
Validation of HACCP is essential before it is implemented and continuous verification of the system is an integral part of the control. If changes are made to any product specification, intended use or manufacturing processes then HACCP needs to be revalidated; and it is only with feedback and regular management review that this continual improvement is implemented.

Most food safety hazards are controlled by the implementation of Pre-Requisite Programmes (PRPs). For food packaging manufacture these have been defined in PAS 223:2011 '*Prerequisite programmes*

*and design requirements for food safety in the manufacture and provision of food packaging'*, which is applicable to all food packaging manufacturers.

PAS 223 provides the *building blocks* for good manufacturing and/or hygienic practice. These include requirements for: the establishment; layout and workspace; utilities; waste; equipment suitability and maintenance; purchased materials and services; contamination and migration; cleaning; pest control; personal hygiene and facilities; rework; withdrawal procedures; storage and transport; food packaging information and consumer awareness; food defence; and food packaging design and development.

PAS 223 includes design because of the potential food safety risk that can arise if the food packaging is not suitable for the intended purpose. Given the diverse nature of food packaging not all requirements will apply in equal measure to an individual organisation and hence a food safety hazard and risk assessment is required before each requirement is implemented and justification given for any exclusions or alternative measures.



## ISO 22000:2005 CERTIFICATION

### Scope

The scope focuses on control measures to be implemented to ensure that processes are in place to meet customer and regulatory food safety requirements. The types of organisations in the food chain to which this standard can be applied are the ones that are directly or indirectly involved in one or more steps of the food chain, regardless of the size or complexity of the organisation.

### Normative Reference

This refers to materials that can be used to determine definitions associated with terms and vocabulary used in the ISO standard document.

### Terms & Definitions

In an effort to maintain consistency and encourage the use of common terminology ISO 22000:2005 terms and definitions section makes reference to the use of the 82 definitions found in ISO 9001:2008 and lists definitions that are specific to this application. The rationale behind the definition section is to provide clarity of terminology and promote the use of a common language.

### Food Safety Management System

In the food safety management system section, the emphasis is on establishing, documenting, implementing and maintaining an effective food safety management system. This includes procedures and records that are needed to ensure effective development, implementing and updating of the food safety management system.

### Management Responsibility

The section on management responsibility outlines the commitment of top management to the implementation and maintenance of the food safety management system. Key elements of this clause include:

assigning a food safety team leader and team; setting clear policies; goals; emergency contingency plans and responsibilities along with establishment of effective communication mechanisms within the organisation and with suppliers or customers. Regularly scheduled management reviews ensure that top management is made aware of the status of the system and that actions are authorised to correct non-conformities and continually improve the food safety management system.

### Resource Management

An effectively implemented food safety management system requires that top management provide adequate resources, budgets and personnel to effectively run the system. Scheduled documented training and evaluations of key personnel and provision of a safe work environment and infrastructure are crucial to the continuity of the system.

### Planning and Realisation of Safe Products

This section incorporates the elements of Good Manufacturing Practices (GMP) and Hazard Analysis Critical Control Point (HACCP), including any regulatory requirements applicable to the organisation and processes. Adequate pre-requisite programmes (e.g. training, sanitation, maintenance, traceability, supplier review, control of non-conforming product and recall procedures) are required that address general requirements to provide a foundation for the production of safe food.

### Validation, Verification and Improvement of the Food Safety Management System

In order to maintain and demonstrate the effectiveness of the food safety management system, the organisation must validate that all assumptions used within the system are scientifically sound. In addition, the organisation

must plan, conduct and document regular verification of all components of the system to evaluate whether or not the system is operating as designed or if modifications are needed. The verification must also form part of a continual improvement process whereby the organisation reviews verification.

## PAS 223:2011 CERTIFICATION

The British Standards Institution (BSI) established PAS 223:2011 and it came into effect on 1 July 2011. Developed by a Steering Group of leading global packaging and food manufacturing companies (including from the packaging world: Alpha, Amcor, Owens-Illinois, Rexam and TetraPak; and from the food manufacturing world: The Coca-Cola Company, Danone, Nestle, Kraft Foods and Unilever) PAS 223 specifies the requirements for establishing, implementing and maintaining pre-requisite programs (PRPs) and design requirements to assist in controlling food safety hazards in the manufacture of food packaging.

PAS 223 is intended to support the management system of food packaging manufacturing organisations to help meet the PRPs requirements specified in ISO 22000. PAS 223 enhances the PRPs requirements of ISO 22000 with the inclusion of specific requirements related to the food packaging industry (e.g. chemical contamination and chemical migration). In addition to the requirements to maintain a hygienic environment, PAS 223 also incorporates the requirements for design as the identification of food safety risks from the intended use of the packaging must be fully understood at the design stage in case the packaging is not suitable for its intended use.

PAS 223 is applicable to all organisations that manufacture food packaging, regardless of size and complexities, yet due to the diverse nature of the food packaging industry not all requirements specified in PAS 223

are applicable to every organisation. Instead, organisations must conduct a documented food safety hazard and risk assessment (one that includes all the requirements) and for any implemented exclusions or alternative measures these need to be justified within the food safety hazard and risk assessment.

PAS 223 is not intended as a standalone standard and should be used in conjunction with BS EN ISO 22000.

The requirements of PAS 223:

- Establishment
- Layout and workplace
- Utilities
- Waste
- Equipment suitability and maintenance
- Purchased materials and services
- Contamination and migration
- Cleaning
- Pest Control
- Personnel hygiene and facilities
- Rework
- Withdrawal procedures
- Storage and transport
- Food packaging information and consumer awareness
- Food defence, biovigilance and bioterrorism
- Food packaging design and development

### **FSSC 22000 CERTIFICATION**

On the 15 July 2011, The Foundation for Food Safety Systems Certification (FSSC) announced that the scope of the FSSC 22000 certification scheme will be extended to cover Packaging Material Manufacturing, due to the recent publication of PAS 223. This is in-line with the commitment of FSSC to expand the certification scope in the food supply chain sectors, based on ISO 22000 and the technical specifications for PRPs.

The FSSC 22000 for food packaging requires that each of the following are met:

- Food Safety Management System ISO 22000
- Prerequisite Programmes PAS 223
- Additional Requirements (3 additional requirements)

#### 1. Inventory of Applicable Regulations

The food manufacturing organisation must have an inventory of:

- Applicable foreign, regulatory and statutory requirements on food safety, including those applicable to: raw materials/ services provided, and products manufactured and delivered
- Applicable codes of practice related to food safety, customer requirements related to food safety, any other additional requirements on food safety determined by the organisation
- The food safety system shall ensure and demonstrate conformity with these requirements

#### 2. Specification of Services

The food manufacturing organisation shall ensure that all services (including utilities, transport and maintenance) which may have an impact on food safety:

- Have specified requirements
- Are described in documents to the extent needed to conduct hazard analysis
- Are managed in conformance with the requirements of BSI-PAS 220, clause 9

#### 3. Supervision of Food Safety

Personnel in Relation to Applicable Food Safety Principles

The organisation shall ensure the effective supervision of the personnel in the correct application of the food safety principles and practices commensurate with their activity

### Benefits of FSSC 22000

The major benefit of FSSC 22000 (incorporating ISO 22000 & PAS 223) is the comprehensiveness of the certification as a food safety management system standard.

FSSC 22000 provides:

- A framework for an organisation to develop its food safety management system with flexibility to allow the organisation to choose the most suitable method to establish and implement its own system to achieve its own food safety objectives
- Comprehensive requirements detailing how an organisation can conduct an effective hazard assessment to determine the production controls that are required for the manufacture of safe products
- A system review to be updated at planned intervals with the aim of continual improvement to the system
- An enhanced set of requirements on compliance of legal and customer food safety (one of the key elements in FSSC standard)
- Easy integration with an organisation's existing management system or other systems in place (i.e. quality management systems, environmental management systems etc.)
- Smaller or less structured organisations the assistance to implement the system with support from an external expert
- The PRPs requirements (as specified in PAS 223 standard) established specifically for the packaging industry
- Benefits for packaging material suppliers to align themselves with many major brands (which have already adopted the FSSC standard)

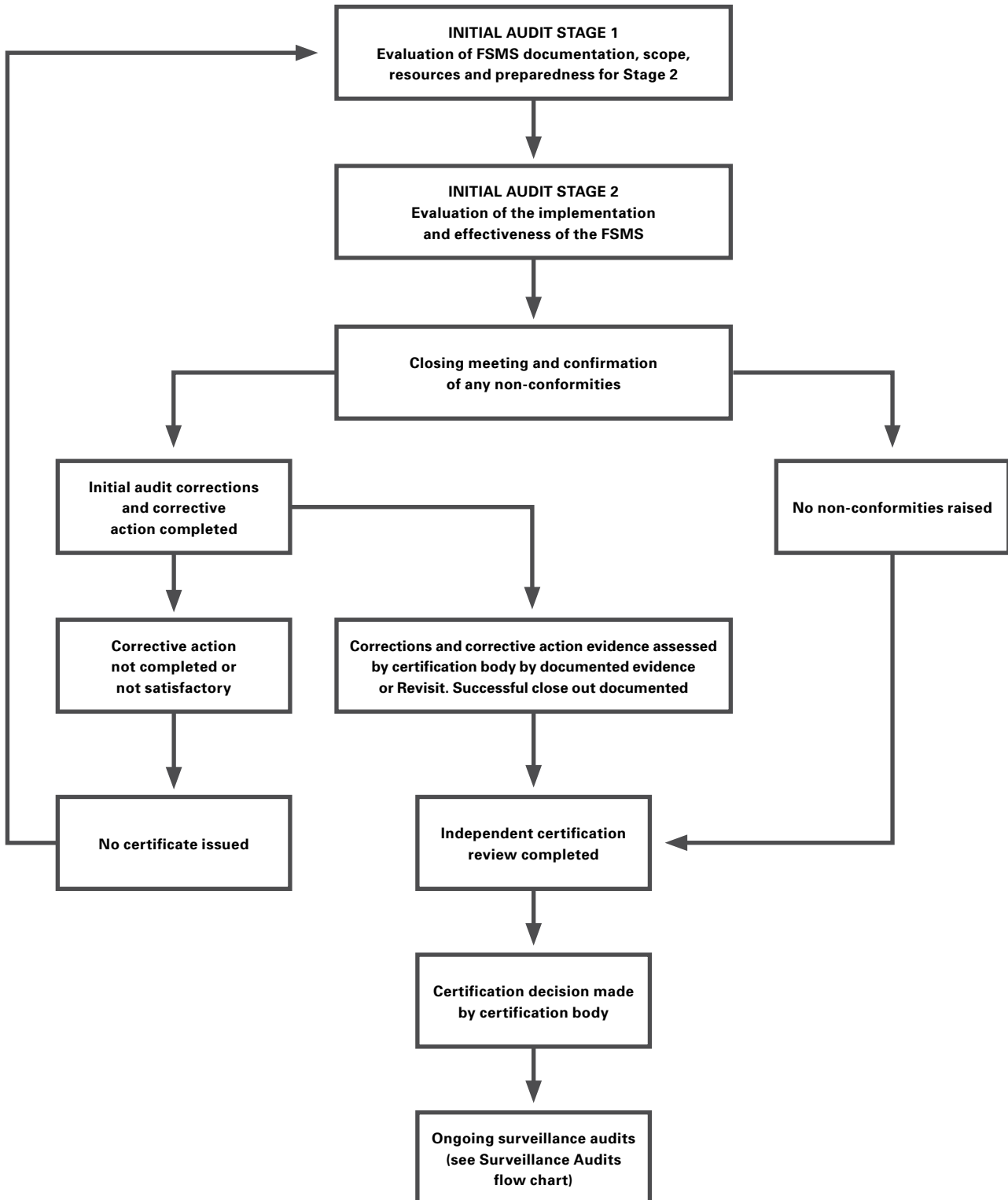


## CERTIFICATION PROCESS

The certification processes consists of six steps:

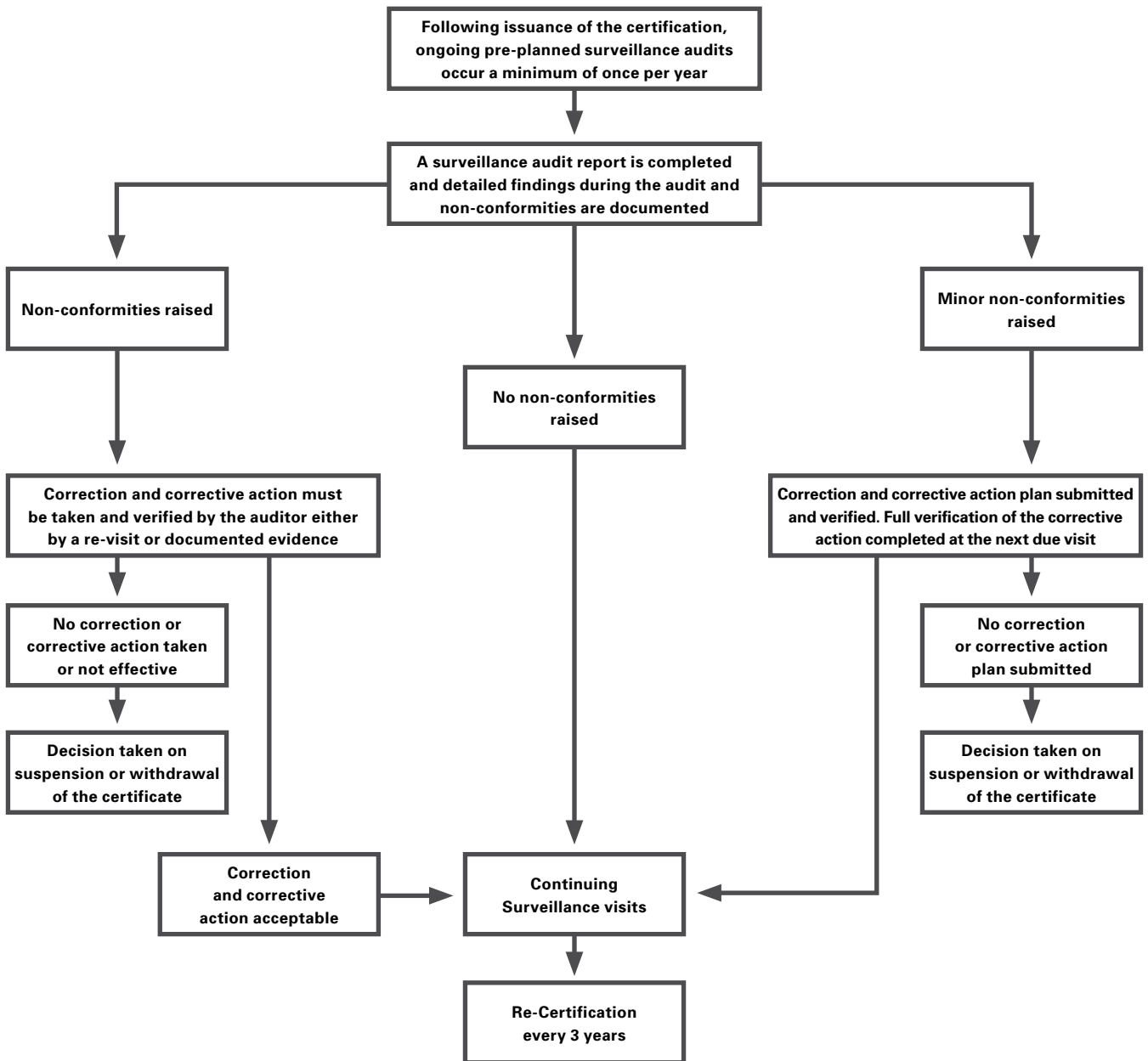
- Step A – A proposal from the certification body is provided based on the size and nature of an organisation and once this is accepted the audit process can proceed
- Step B – There is then an optional ‘pre-audit’ stage, which is often useful in identifying any weaknesses in systems and in building confidence before the formal audit
- Step C – The first part of the formal audit is ‘Stage 1 – Readiness Review’. This onsite audit evaluates the compliance of an organisation’s documented system with the requirements of the standard. As part of this the audit ensures correctness and completeness of hazard identification, CCP determination and that pre-requisite programs are in place and appropriate to the business. After this stage the rest of the audit can be effectively planned and key elements of the system can undergo an initial examination. A report then identifies any concerns or observed non-compliances so that immediate action can be taken as required.
- Step D – This is ‘Stage 2’ of the initial audit process. The audit includes interviews with employees and examination of records. Observation of working practices determines how compliant actual processes are with the standard and with an organisation’s own documentation system. At the end of this stage, the findings of the audit are presented along with other observations and opportunities for improvement. Once the non-conformities have been addressed, a technical review of the audit will then be conducted by an authorised Certification Manager to confirm the issuance of a certificate.
- Step E – Surveillance visits are scheduled at either six or twelve month intervals. During the visits, the implementation of the action plan is reviewed, addressing the past non-conformities and examining certain mandatory and other selected parts of the system in line with a provided audit plan.
- Step F – Shortly before the third anniversary of the initial certification, a routine visit is extended to enable a re-certification audit. Surveillance visits then continue, as before, on a three-year cycle.

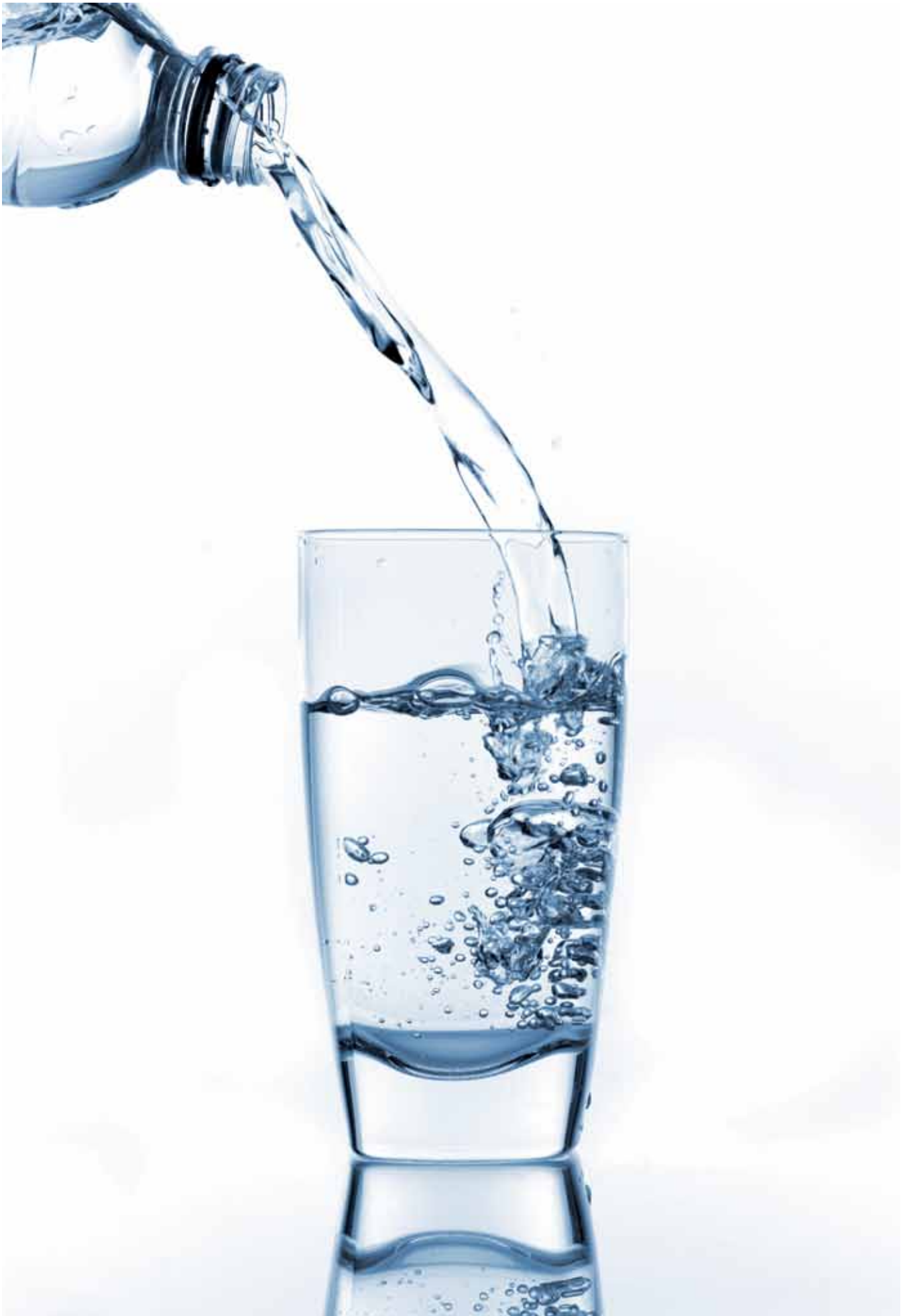
**FSSC 22000 CERTIFICATION PROCESS**



**FSSC 22000 SURVEILLANCE AUDITS & PROCESS**

(A series of surveillance audits are scheduled, minimum of one per year, to ensure continuous improvement.)





# V. COMBINING PACKAGING FOOD SAFETY SCHEMES WITH THOSE RELATED TO ENVIRONMENTAL, HEALTH & SAFETY AND QUALITY CONTROL

While it is important for the food packaging industry to ensure that safe products are produced through the establishment and implementation of food safety management systems, large organisations also need to address various other concerns. These include: the environmental impact from all types of packaging; packaging waste; and employee health and safety requirements. Due to this it is quite common in the packaging industry to implement multiple management system standards.

To manage each of the required audits and certifications individually can be a time consuming and costly process. The

audits frequently cover similar areas, so an individual area of an organisation's operations may find that it is constantly embarking on periods of auditing if each audit is performed separately.

An organisation can establish an integrated management system that covers all management system standards, quality and product safety, environment, health and occupational safety that assists in internal alignment of different management systems with the result being greater overall efficiency. The ISO series of standards, which share common requirements for system management, can be easily integrated under one

system (e.g. single set of policy and objectives, one management planning and review session and continual improvement that covers food safety and quality, occupational health and safety and environmental management system). This can then become a single audit that addresses all the requirements and leads to certification against multiple standards

The table below demonstrates how the management system requirements for the FSSC 22000 scheme also appear within clauses of other industry standard certification schemes:

**MANAGEMENT SYSTEM REQUIREMENT SIMILARITIES ACROSS A NUMBER OF REQUIRED CERTIFICATION SCHEMES**

MANAGEMENT SYSTEM REQUIREMENTS	FSSC 22000	ISO 9001	ISO 14001	OHSAS 18001
General Management System	Clause 4	Clause 4	Clauses 4.1, 4.4.4, 4.4.5 and 4.5.4	Clauses 4.1, 4.4.4, 4.4.5 and 4.5.4
Management Responsibility	Clause 5	Clause 5	Clauses 4.1, 4.2, 4.3, 4.4.1, 4.4.3 and 4.6	Clauses 4.1, 4.2, 4.3, 4.4.1, 4.4.3 and 4.6
Management Resources	Clause 6	Clause 6	Clauses 4.4.1 and 4.4.2	Clauses 4.4.1 and 4.4.2
Product Realisation and Operational Control	Clause 7	Clause 7	Clauses 4.3.1, 4.3.2, 4.4, 4.4.3 and 4.4.6	Clauses 4.3.1, 4.3.2, 4.4, 4.4.3 and 4.4.6
Measurement, Analysis and Improvement	Clause 8	Clause 8	Clause 4.5	Clause 4.5

# VI. CONCLUSION

For the global food packaging industry PAS 223 together with ISO 22000 aims to bring confidence to food safety management system practices. The publication of PAS 223 'Pre-requisite programmes and design requirements for food safety in the manufacture and provision of food packaging' and its inclusion in the Food Safety Systems Certification scheme FSSC 22000; together with the revision of the GFSI guidelines to include food safety requirements for food packaging, means many food packaging organisations will look to ISO 22000 coupled with PAS 223 to manage their food safety risks and to demonstrate due diligence.

This adds another link in the end-to-end supply chain approach of ISO 22000 for the management of food safety. The process-based approach indicative of ISO management systems and the culture of continual improvement will add to the efficiency and performance of an organisation in ensuring a *customer-first* philosophy. Combined with the robust HACCP/PRP based system of FSSC 22000 this gives the food packaging manufacturer the necessary controls to manage food safety risks and to meet customer expectations.

## ABOUT THE AUTHORS

Supreeya Sansawat

*Global Food Business Manager, SGS*

Supreeya Sansawat has over 17 years of experience in quality assurance in the food industry including auditing and training. Supreeya has auditing experience in many food safety schemes, including GMP, Dutch HACCP, SQF, ISO 22000, ISO 9001, BRC and GlobalGAP and has performed over 1 000 audits. She is now responsible for all of the technical development for SGS' Food Safety Solutions, including maintaining and improving food safety auditor and trainer competencies for all GFSI recognised schemes as well as other standards related to the food industry.

John Terry

*Global Product Manager, Food Supply Chain Assurance, SGS*

John has an honours degree in Nutrition and a Masters in Food Control and has spent his career working as a technical food professional. His experience covers food safety management system certification, accreditation, standards development and implementation of HACCP and pre-requisite programmes in food organisations. He has been actively involved with the ISO committee responsible for ISO 22000 for a number of years.

## ABOUT SGS

SGS is the world's leading inspection, verification, testing and certification company. Recognised as the global benchmark for quality and integrity, we employ over 67 000 people and operate a network of more than 1 250 offices and laboratories around the world. We are constantly looking beyond customers' and society's expectations in order to deliver market leading services wherever they are needed.

SGS helps enhance food safety and quality with a comprehensive and cost-effective set of control solutions including audits, testing, inspection, technical solutions and training. These services can be stand alone or part of an integrated package of measures to assist your company in continuously improving the culture of food safety, quality and sustainable development.

Partnering with SGS opens the door to better performing processes, increasingly skilful talent, consistent and compliant supply chains and more sustainable customer relationships delivering profitable competitive advantage. Work with the global leader and take your commitment to the next level in food safety management systems.

We have a history of undertaking and successfully executing large-scale, complex international projects. With a presence in every single region around the globe, our people speak the

language and understand the culture of the local market and operate globally in a consistent, reliable and effective manner. SGS is a leading independent body helping organisations improve their performance related to sustainable development.

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