GUIDELINES FOR IMPLEMTING GMP IN FOOD PROCESSING

3. Process Equipment/Machinery

3.1 ***Adequate equipment layout avoiding congestion***

3.1.1 The design and layout of the factory and equipment must ensure efficient production of safe products and allow access for adequate cleaning and pest control.

Auditor's Recommendations:

Look At:	**Look For:**
Equipment Design	Equipment suitable and fit for purpose
Factory Layout / Plant Design / Product Flow	Factory Plans and Design Specifications Product Flow and Process Flow
HACCP & Process Control	HACCP System and Process Control Charts and Records
Cleaning Schedules	Cleaning Plans Records

3.1.2 Food processing equipment and test equipment must be properly designed for its purpose. The equipment must be easy to dismantle for cleaning and inspection purposes.

Auditor's Recommendations:

Look At:	**Look For:**
Equipment Design	Equipment Roster and Design Specifications
Cleaning Systems	Cleaning Methods and Records
Inspection and Calibration	Inspection and Calibration Records

3.1.3 Equipment must be positioned at least 50cm away from the wall and off the floor.

Auditor's Recommendations:

Look At:	**Look For:**
Factory Design and Product Flow	Equipment position and flow diagrams

3.1.4 Designated pedestrian gangways must be available to avoid congestion and ultimately accidents.

Auditor's Recommendations:

Look At:	**Look For:**
Factory and Plant Design	Product, Process and Personnel Flow

3.2 ***Glass handling procedures, register and inspection***

3.2.1 Glass is strictly prohibited in food production and storage areas unless it is the primary packaging medium. A glass breakage procedure should be in place.

Auditor's Recommendations:

Look At:	Look For:
HACCP and Food Safety System Control of Non conformance	Non-conformance reports Corrective action records Preventative Measures Foreign Body Procedure and Records Conformance to standard requirement

3.2.2 The company should have a formalised, written procedure for glass handling, register , control and inspection when glass containers, sample bottles, parasite inspection boxes are brought into the production area.

Auditor's Recommendations:

Look At:	Look For:
HACCP System Product ID and Traceability	Glass and Foreign Body Policy Records of inspection and coding for identification Ideally no glass in the production area

Auditor's Recommendations:

Look At:	Look For:
Foreign Body Control HACCP Control of Non Conformance	Use of appropriate equipment and methods with records to demonstrate control of foreign bodies Rejection procedures and records of non-conformance Corrective Action and Preventative Measures

3.3 ***Engineers trained in hygiene procedures***

3.3.1 It is essential that all engineers employed on site are adequately trained in hygiene procedures, particularly standards of personal hygiene and product protection.

Auditor's Recommendations:

Look At:	Look For:
HACCP and Food Safety Responsibility	Records and Training Procedures Personal Hygiene records and training Food Safety and Product Protection

3.3.2 When entering production areas they must follow the same hand-washing procedures and adopt the same protective clothing regime as other operators.

Auditor's Recommendations:

Look At:	Look For:
Personal Hygiene	Handwashing facilities Personnel Training and Awareness Changing facilities

3.3.3 When off site engineers are brought into the plant, they must be shown the correct code of practice for personal hygiene and taken through it. Picture based guides providing key hygiene instructions should be made available to overcome language problems.

Auditor's Recommendations:

Look At:	Look For:
Personal Hygiene	Training of contractor's to meet minimum requirements

3.4 ***Precleaning of product containers***

3.3.1 Pre-cleaning of product containers which could present a potential foreign body risk to product; e.g.boxes should be in place***. This may involve pre-rinse with dilute hypochlorite solution (6ppm***)

Auditor's Recommendations:

Look At:	Look For:
Cleaning Procedures	Cleaning Schedules Glass Breakage / Foreign Body Procedure Non conformance / Corrective Actions

3.5 ***Condition of equipment, no corrosion, loose paint or frayed belts***

3.5.1 All process equipment and machinery must be maintained in good condition. Temporary repairs or modifications that may affect quality of the product ***is not recommended***

Auditor's Recommendations:

Look At:	Look For:
Equipment Design Maintenance and Inspection	Equipment specification and design Maintenance and inspection records Cleaning Records

3.5.2 All pipes leading to or from water storage tanks must be kept clean and free from product debris, flaking paint or other contamination hazards.

Auditor's Recommendations:

Look At:	Look For:
In-process and plant control	Maintenance and Inspection of pipework Removal of unnecessary pipework and fittings Cleaning Records and Plant Maintenance records and schedule

3.5.3 Metal surfaces if not stainless steel, must be kept in good condition, free from rust, flaking paint or other loose surface covering.

Auditor's Recommendations:

Look At:	Look For:
Equipment Validation	Cleaning plans and schedules for all equipment Maintenance records Non-conformance and corrective action records Equipment Condition to Food Safety Requirements Use of food grade materials

3.5.4 The design of pumps and their materials of construction must be suitable for their purpose. All pumps must be capable of being stripped down for ease of cleaning and inspection. They must be in good condition and have the power to ensure proper circulation.

Auditor's Recommendations:

Look At:	Look For:
Equipment / Pump Design	Design Specifications Maintenance Procedure and Records Cleaning and Inspection Records

3.5.5 All connecting pipework must be of sterilisable quality and must be made up in sections which can be easily dismantled for effective cleaning. Where flexible pipework is used it should be fitted with stainless steel connections secured by means of "Jubilee clips". All connections should be removed at agreed intervals (dependent on product) to remove any trapped debris.

Auditor's Recommendations:

Look At:	Look For:
Cleaning Protocols	Cleaning Records and Manuals Inspection and Maintenance Records

3.5.7 Any pipe lagging must be in good condition, coated with an impervious, easily cleaned surface, to minimise the foreign body risk.

Auditor's Recommendations:

Look At:	Look For:

3.5.8 Agitator motors, their mounting frames and oil trays, must be kept free of rust and flaking paint e.g conveyor belts.

Auditor's Recommendations:

Look At:	Look For:

3.5.9 Conveyor belting, which is in contact with foodstuffs, must be constructed of hygienic materials and must be free from fraying, delamination or any other type of damage. Guides and side plates must not be constructed of wood because of the contamination risk from splinters. Belt guides must also be easily removed for cleaning.

Auditor's Recommendations:

Look At:	Look For:

3.5.10 Pallets for internal use must be manufactured from plastic or non-corroding metal. Wooden or broken plastic pallets must not be permitted in production areas. Wooden pallets are allowed for fully protected final product in cold store.

Auditor's Recommendations:

Look At:	Look For:

3.6 ***Use of food grade materials***

3.6.1 All equipment surfaces in contact with food must be inert to the food being handled under the conditions of use. The use of stainless steel is preferred for food equipment surfaces.

Auditor's Recommendations:

Look At:	**Look For:**
Physical and Chemical Product Contamination Risks	Risk Assessment Use of Food Grade Equipment Use of Food Grade materials

3.6.2 All food equipment surfaces must be smooth, impervious, easily cleaned and drained.

Auditor's Recommendations:

Look At:	**Look For:**
Food Equipment Contamination Risks	Maintenance and Inspection Records Equipment Replacement Records

3.6.3 The use of wood in open food production areas must be avoided. The use of wooden pallets is only allowed for fully enclosed products protected by outer packaging in peripheral assembly or storage areas.

Auditor's Recommendations:

Look At:	**Look For:**
Foreign Body Contamination	Evidence of wooden objects in the production area Records of foreign body non-conformance and corrective actions

3.6.4 Faced chipboard finishes are not acceptable on preparation tables .

Auditor's Recommendations:

Look At:	**Look For:**
Foreign Body Contamination	Evidence of wooden objects in the production area Records of foreign body non-conformance and corrective actions

3.6.5 Food grade lubricants must be used on conveyors and equipment where potential contact with food occurs.

Auditor's Recommendations:

Look At:	**Look For:**

3.6.6 Where continuous cleaning of conveyors is practised provision must be made to remove cleaning solutions prior to contact with food materials.

Auditor's Recommendations:

Look At:	Look For:
Cleaning Methods	Records of Clean Non-conformance and corrective actions Preventative Measures

3.7 ***Control of foreign object risks e.g. documentation machine parts***

3.7.1 Recommended that all storage, blending and process vessels are fitted with close fitting covers, that are kept in place at all times.

Auditor's Recommendations:

Look At:	Look For:
Foreign Body Contamination	Use of product protection equipment Records of non-conforming product and corrective action

3.7.2 Agitator motors must be fitted with oil catch trays, which cannot overflow into the storage or blending vessel. Controls must be exercised to prevent excessive leakage of lubricant.

Auditor's Recommendations:

Look At:	Look For:
Equipment Design and Maintenance	Design Specifications Maintenance and Inspection records

3.7.3 Where practical, all conveyors carrying open food, raw materials or open containers should be protected from overhead contamination by suitable covers suspended above.

Removal of byproduct on conveyors beneath filleting process requires controlled cleaning of surfaces above conveyor.

The cover must be wider than the conveyor and mounted as close to the product or packaging as possible. The covers must be easy to remove for cleaning and should be sloping, rounded or apexed to minimise dust collection and to prevent them being used as shelves.

Auditor's Recommendations:

Look At:	Look For:
Equipment Design and Maintenance	Design Specifications Maintenance and Inspection records

3.7.4 Any liquid discharge from the process must be plumbed direct to drain, using taps in the line to prevent siphoning or backward flow.

Auditor's Recommendations:

Look At:	Look For:
Equipment Design and Maintenance	Design Specifications Maintenance and Inspection records

3.7.5 Where there is a chance of liquid spillage, splashing or overflow on a line, the equipment must be fitted with a catch tray, which will channel the offending liquids directly to the nearest drain.

Auditor's Recommendations:

Look At:	Look For:
Equipment Design and Maintenance	Design Specifications Maintenance and Inspection records

3.7.6 Equipment must only be used for its intended purpose and must not serve as shelving or storage, or as a food preparation surface, because of the potential foreign body risk.

Auditor's Recommendations:

Look At:	Look For:
Equipment Design and Maintenance	Design Specifications Maintenance and Inspection records

3.7.7 An inventory of all machine change parts should be kept and maintenance staff must observe all precautions while working on equipment and services:-

i. All screws, nuts, bolts, washers etc. must be checked and securely fastened.

ii. All tools must be accounted for and all spare parts or fittings removed from the area.

iii. All equipment and surrounding area must be cleaned and tidied prior to recommencing production.

iv. The machine operator must also check that all machine parts are securely in place and all necessary guards are fitted.

3.8 ***Maintenance programme including gaskets/no temporary repairs***

3.8.1 All equipment should have a written maintenance and overhaul programme, which is adequate for the process and the usage of the machine. All 'O' rings and other gaskets must be kept in good condition.

Auditor's Recommendations:

Look At:	Look For:
Maintenance and Inspection Calibration and Testing	Maintenance and Inspection records Calibration and test records

3.8.2 Process equipment should be itemised in an inventory and where possible numbered by production line, to ensure that the routine maintenance programme is controlled and exercised according to the agreed time-scale.

Auditor's Recommendations:

Look At:	Look For:
Process Control Maintenance Schedule	Equipment Roster and Production / Process Flow Diagram Maintenance Programme and Record

3.8.3 Equipment must be maintained in a good state of repair. Running repairs using string wire, cardboard or other temporary materials must not be permitted for safety and contamination reasons.

Auditor's Recommendations:

Look At:	Look For:
Equipment design and maintenance	Maintenance and Inspection Records

3.9 ***Temperature control.***

3.9.1 At all critical storage areas, indicating or automatic temperature recording and control equipment must be used.

3.9.2 Auditor's Recommendations:

Look At:	Look For:
HACCP and Temperature Protocols	Temperature Control Charts

3.9.2 Manual checking and recording must be used as a cross-reference to automatic controls at agreed frequencies.

Auditor's Recommendations:

Look At:	Look For:
Inspection and testing Calibration	Records for inspection and testing and calibration

3.9.3 All temperature recording equipment must be regularly checked and calibrated to an agreed time scale in a formalised maintenance programme.

Auditor's Recommendations:

Look At:	Look For:
Inspection and testing Calibration and Maintenance	Records of testing and inspection Maintenance and Calibration Records

3.9.4 All chill store temperature controls must be capable of maintaining the products within the appropriate banding of the Quality Assurance Rules.

Auditor's Recommendations:

Look At:	**Look For:**
Chill Store Controls	Temperature Control Charts Chill Store Maintenance and Records

3.10 ***Safety guards do not restrict cleaning***

3.10.1 Safety guards used during production have the potential to become debris traps. It is therefore essential that at the end of production and during production breaks, safety guards are accessible for thorough cleaning or are moved to facilitate thorough cleaning of equipment. e.g bandsaws The machinery should then be inspected by QC prior to re-assembly by maintenance engineers.

Auditor's Recommendations:

Look At:	**Look For:**
Cleaning Schedules	Cleaning records Maintenance and Inspection Records