
APPENDIX 7 – WQA v8
FOREIGN OBJECT DETECTION.

The aim is to set additional mandatory requirements for the detection of foreign object contamination of Woolworths Branded Products (Food & Pet Food), to reduce the risk of contaminated product reaching the customer, and achieve the best possible detection of foreign objects in final packed products.

This document is further supported by two How to Guides – “How to Metal Detection Functionality” and “How to X-ray Functionality”.

This Appendix shall be read in conjunction with, and is in addition to, the relevant WQA Standards.

Non Compliance to requirements in this Appendix (labelled as “SHALL”) will result in the issuing of CAR’s at WQA Audits.

References

WQA Manufactured Food Standard v8

Section 9.0 – Equipment and Maintenance

Section 11.0 – Prevention of Foreign Object Contamination

Section 15.0 – Validation and Verification

WQA Primary Production Standard Produce v8.

Section 11.0 – Prevention of Foreign Object Contamination

WQA Primary Production Standard Seafood v8.

Section 11.0 – Prevention of Foreign Object Contamination

WQA Primary Production Standard Eggs v8.

Section 11.0 – Prevention of Foreign Object Contamination

How to Guides

How to Metal Detection Functionality.

How to X Ray Functionality.

Definitions

Refer to WQA Glossary of terms.

Procedure

All products shall be free of extrinsic foreign objects such as plastic, glass, metal, weed, dirt, or grease, including contamination from the process or packaging.

Unless a tolerance is applied within the Woolworths Issued Controlled Specification, all products shall be free of intrinsic foreign objects such as cartilage, bone, offal, feather/ hair, leaf, pips or stones.

Policies and procedures for prevention of foreign object contamination of finished product shall be implemented irrespective of the use of foreign object detection systems. This shall include an incident management procedure that handles situations when foreign objects are found.

Foreign object detection equipment (eg: sieves, magnets, metal detector, x-ray, colour sorter) shall be specified as appropriate for the products that are being examined. One or more pieces of equipment may be required depending on the processing operations. Where it is not considered necessary, there shall be a detailed risk assessment, detailing alternate controls.

Where mandated in the WQA v8 standard, Metal Detection (as a minimum) shall be used for Woolworths Branded Product. The exemptions that are in place for specific industries (Produce, Eggs) still apply.

Risk assessments shall be documented in the hazard analysis, and HACCP principles shall be used to evaluate the need for detection and removal equipment and determine critical control points for foreign objects. All likely sources of potential foreign object contamination risk shall be considered. It is not acceptable to rely solely on suppliers or processes upstream or downstream of the products manufacture for control / management of foreign object contamination. All inputs (eg: raw materials, packaging) and outputs (eg: WIP and rework) shall be thoroughly covered.

The risk assessments shall be reviewed minimum annually, in line with HACCP reviews (refer to Section 1.0 of WQA v8 Standards).

i. Location of foreign object detection System

All foreign object detection systems shall be located as close as possible to the finished packaging point, unless the risk assessment indicates a detector closer to the start of production is valid. This shall be documented and verified in line with the HACCP reviews. Multiple points of control, or a combination of technologies, should also be considered.

The location of the equipment or any other factors influencing the sensitivity of the equipment shall be validated and justified. This shall consider product and environmental impacts.

Refer to How to Guides.

Additional: High Risk/ High Care

Foreign Object detectors used on finished packed retail product should be situated in a low risk area of a high risk or high care processing facility.

ii. General Sensitivity

Equipment should be upgraded to improve detection sensitivity where advances in detection are developed and/or available, or where the risk assessment indicates that a piece of equipment no longer matches the products being manufactured. (eg: chilled meals are being further processed to be sold frozen).

The operation and sensitivity of the detector in use shall be well understood by relevant site personnel. Vendors shall work to achieve optimum levels of sensitivity in conjunction with the equipment manufacturer.

This should include

- system design and operation, including consideration to the environment of use and outcome of risk assessments
- best location and handling methods
- appropriateness of application, performance is suited to the task, and practicality of reject mechanism
- product testing for achievable limits of detection (i.e. the smallest metal pieces which can be consistently detected – not a high level of false rejects)

All foreign object detectors shall have adequate security devices, so only authorised personnel have access to alter settings. The sensitivity settings shall be documented.

Evidence of a satisfactory installation shall be validated and documented before new detection devices are placed into operation. The systems shall be re-validated in the event of them being re-located within the manufacturing environment and additionally shall be re-validated on an annual basis and in event of a change to product and/or product range, e.g. new variants.

The system shall be serviced at regular intervals, as per Preventative Maintenance program. This shall be based on the manufacturer's recommendations, taking into account usage, environment and failure/breakdown history. The service records shall be maintained. The system shall be verified, via challenge testing, as working effectively after maintenance has been conducted and before being placed back into operation.

The service can be conducted via a contract entered into with the equipment manufacturer, or internal engineers, suitably trained by the manufacturer. These shall be listed and monitored through the vendors Approved Supplier Program, or through the internal training processes of the organisation. If internal staff are trained by the equipment manufacturer, evidence of training and competency based assessment shall be documented and retained.

A stock of suitable spare parts should be available on site.

iii. Production Line Set up & Checking

The foreign object detector system shall be fully operational prior to the start of production.

If a combined detection and check weighing system is in use, the system shall be set up so that the foreign object detection rejection always overrides the weight rejection if the two occur together.

An effective challenge testing method shall be in place and all tests/checks shall be documented.

Detectors shall be verified, by conducting physical tests, at the start (first pack/ unit), middle and end (last pack/ unit) of each production run (using Woolworths Branded Product) and minimum half hourly (30 minutes) unless agreed otherwise (in writing) with Woolworths. More frequent tests should be undertaken, where length of production and production line speed deem necessary. Where products are sold as a multi-pack, the individual items shall be passed through the detector.

All tests on the detection system shall be documented and signed by the trained individual who has carried out the check. The actual time shall be recorded. Confirmation of metal tests shall be recorded as Pass/P or Fail/F (or equivalent in local language). Ticks and dashes shall not be used. Records shall be signed.

The records shall include, as a minimum:

- Date, Shift, Operator/ Supervisor responsible
- Product name, Size, Quantity of Run, any reference details
- Condition of unit, clean and fully operational
- Security settings in place
- Reject bin security in place
- Start, Middle and End, AND 30 min product tests
- Individual test piece type and size
- Placement of test pieces
- Number of reject products obtained
- Corrective actions for any failed tests
- Investigation on rejected product
- Verification of rejects by supervisor or independent quality personnel

iv. Detector Test Failure

In the event of a detector test failing (whether due to failure to detect a test piece or failure to reject product) all product that has been passed through the detector since the previous satisfactory test shall be isolated and retested through a unit that has been confirmed, by an authorised person, to be working correctly.

The re-testing of product which has been isolated after a test failure shall be documented.

Where product is actually found to contain foreign object, a full investigation shall take place to ensure the source of contamination is identified. In addition, the risk of other materials being contaminated shall be assessed.

Corrective actions shall be put in place to address the identified “root cause” and prevent a recurrence. Details of the investigation shall be documented using the Corrective and Preventive (Non Conformance) Management System of the organisation (refer Section 16.0 of WQA v8 Standards).

Where foreign material is detected or removed by the equipment, the source of any unexpected material shall be investigated information of rejected materials shall be used to identify trends and instigate preventive action to reduce the occurrence of contamination.

v. *Detector Validation*

Metal detectors shall be set up and validated prior to use, and at intervals during use according to the requirements of this appendix and product and process risk.

The test packs shall be representative of the products going down the line e.g. shape and density. Actual product shall be used as test packs. The packs used to make up test packs should be passed through the detector before they are used to ensure that they do not contain foreign objects.

Detectors shall be verified using clearly identified test packs at the same temperature (and therefore maintained at same temperature) as standard product passing down the line and test pieces of a defined size. The test packs need to be made up to worst case scenario, including the consideration of situations where a pack contains products of different density.

The test pieces shall be passed through the detector in the centre of the aperture with the test pack. Consecutive leading and trailing checks shall be completed in long packs to ensure the reject mechanism can successfully reject. The test shall be representative of how products would normally travel through the detector during normal production (refer diagram below).

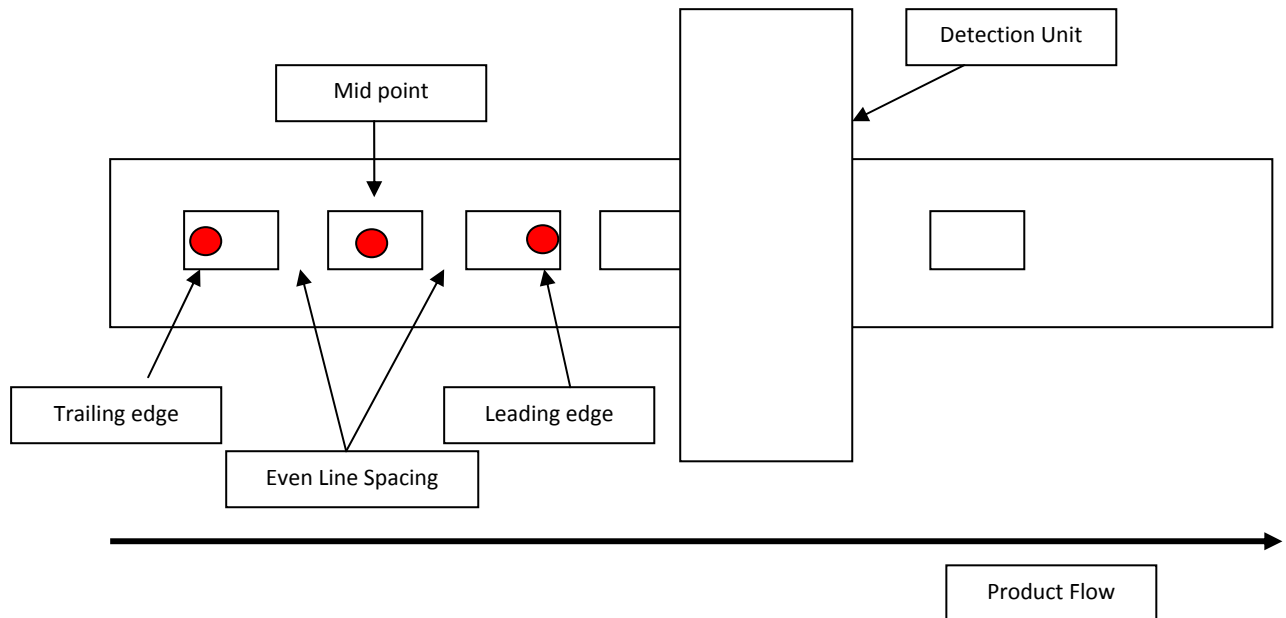
The site shall only use test pieces which are controlled and the size of the metal/foreign object can be verified e.g. they are manufactured with a serial number or issued with a certificate. Test pieces are available in various sizes/shapes e.g. sticks or cards. The most appropriate type for the product should be chosen.

Test packs should be made up on an hourly basis with product from the line (same product). If it is not practical to do this and test packs are made up in advance, the test packs shall be controlled and labelled with product, date, test piece size and type.

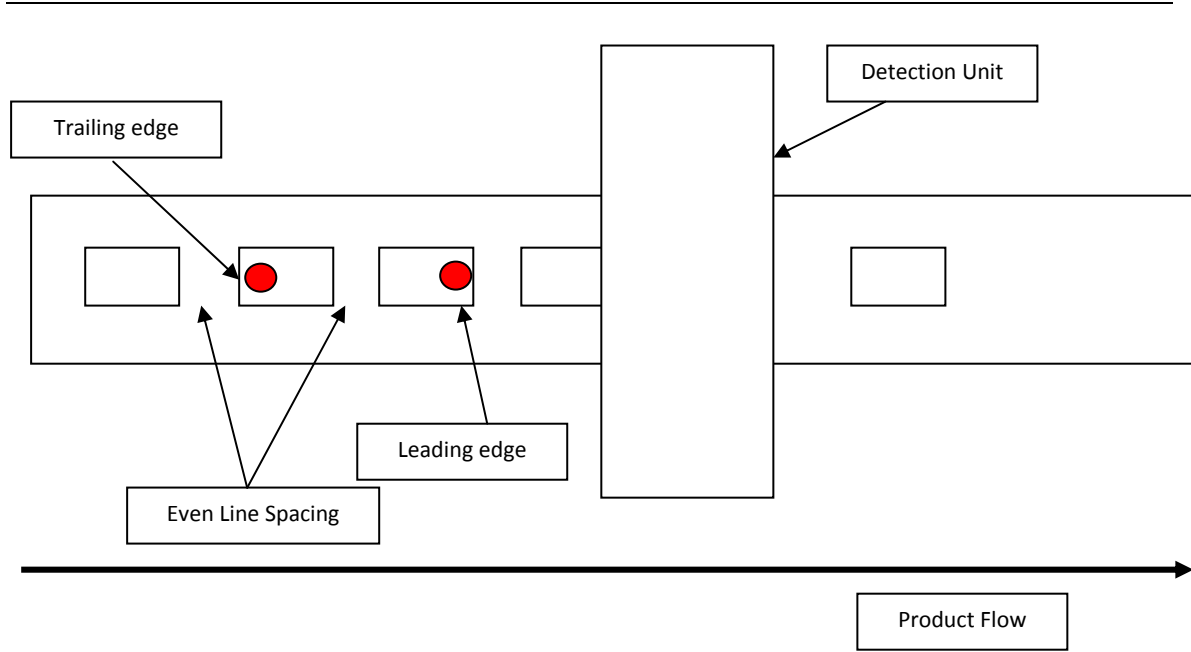
The test pieces shall be located in the leading, centre and trailing positions as per diagrams below for the 3 pack consecutive test, and the leading and trailing edge for the 2 pack Ferrous in foil. The leading and trailing positions would not be considered a requirement if the product is a small pack (i.e. less than 100mm). The test packs shall be marked with the location of the metal if it is not visible.

If the location of the test piece is not visible additional controls/checks shall be in place to ensure that the test pieces remain in the required locations if the packs are used for multiple locations e.g. after being rejected the test pieces may have moved.

All three (3) test packs (Ferrous, Non Ferrous, Stainless Steel) shall pass through the detector one after each other with normal spacing/line speed. The line shall be running and the test packs introduced in the places of three (3) un-inspected packs where possible.

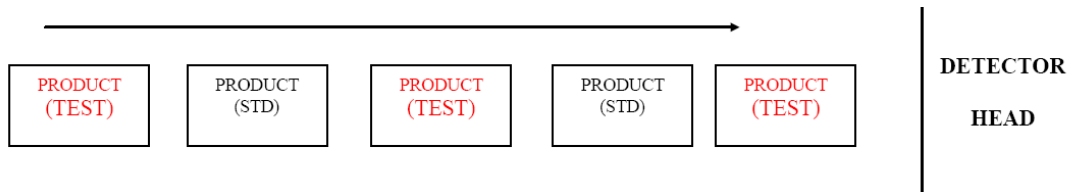


For Ferrous in Foil Detectors two test packs are required including two ferrous test pieces of the same size.



The objective of the test is to challenge the effectiveness of the reject system so that it does not blanket reject.

The test packs shall be sent through the detector with a standard pack in between (which has already successfully passed through the detector).



It is a failed test if any of the test packs are not rejected. If a standard pack is rejected the line shall be stopped and the issue investigated e.g. timing of reject mechanism. If a machine struggles to not reject good packs, advice should be sought from the equipment manufacturer. The capability of the machine may be dependent on the line speed.

If a site wishes to combine the consecutive and memory test into one test, the procedure below is recommended:

