METTLER TOLEDO

4 Steps to Identify a System Supplier for Glass-in-Glass X-ray Inspection

Testing the performance of x-ray inspection equipment is an essential part of any buying process for a well-designed quality management system. When conducting supplier tests follow these 4 steps to guarantee accurate and consistent results.

STEP 1

Setting Critical Limits

Manufacturers should establish their 'expected' and 'nice to have' critical (detection) limits on glass contaminants and discuss these with the x-ray supplier.

Limits should be based on manufacturers'

- Risk analysis of production processes
- Supplier codes of practice
- Specific contamination issues
- Previous customer complaints

STEP 2

Test Guidelines

Problems may arise if a high-density glass sample is used for testing, but the actual jars used in the production line (and which are likely to be the main source of glass contamination) are made from lower-density glass.

It is recommended that the glass test pieces are made of the container glass or soda-lime glass as it is the most prevalent type of glass.

The same test sample should be used to test all competitors' machines, especially glass test spheres.

Contaminants should be embedded in the glass jar, where detection has traditionally proved most challenging. i.e. corner of the base and on the side walls in the body area.

Manufacturers should try some irregular-shaped glass fragments, as these will provide the greatest challenge to inspection software.

STEP 3

Setting-Up

Manufacturers should be prepared to provide the x-ray supplier with uncontaminated containers of each different product to be tested.

The x-ray supplier will pass the different clean containers through the machine to 'learn' the product.

The x-ray system should be set to the same belt speed as the 'real' production line.

To determine if the machine setup is optimised, it is important that manufacturers perform small sample test runs, using their own contaminants.

Once the detection sensitivity is optimised, the x-ray supplier should pass 25 different 'clean' containers of the same product through to ensure zero false rejects are recorded.

Testing can then commence, ideally with no further adjustment to the settings.

STEP 4

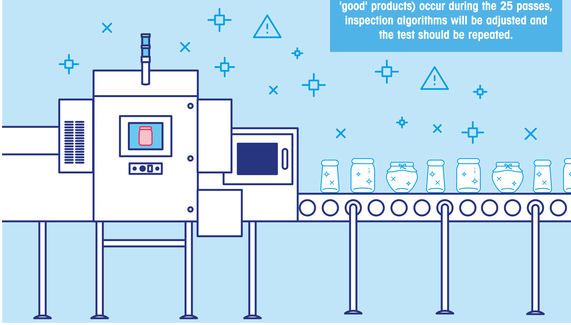
Test Procedure

It is important that manufacturers remain realistic about detection levels. Allowances should be made for natural product and production line variations.

Repeat the test procedure for each contaminant size until 100% POD is achieved.

The manufacturer should pass each spiked container 25 times and record the number of detect/non-detect (multiply x4) = % Probability of Detection (POD).

If any false rejects (incorrectly rejected 'good' products) occur during the 25 passes, inspection algorithms will be adjusted and the test should be repeated.



Conducting the same test with every supplier will give you the results to confidently select the right x-ray inspection system to guarantee optimum glass-in-glass detection.

To find out more visit **www.mt.com/xray-glass**

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