Product Inspection Testing

Maintaining Performance Levels

METTLER TOLEDO

Content

Product Inspection
Introduction

Product Inspection equipment provides the means for food and pharmaceutical manufacturers to ensure product quality standards are upheld, consumer welfare is maintained, brands are protected, and regulatory and legislative requirements are met.

METTLER TOLEDO provides a range of inspection technologies to meet these needs.

Metal Detection
Advanced technology provides industry-leading metal contaminant detection levels and reliability, ensuring the safest products and tightest brand protection.

X-ray Inspection
X-ray provides outstanding and reliable contamination detection whilst simultaneously performing a range of in-line product integrity checks. Inspecting fill levels, identifying missing or damaged products and rejecting damaged products are examples of powerful quality control tools for manufacturers.

Checkweighing
Dynamic checkweighing provides 100% quality and quantity control, helping to reduce costly giveaway, ensure local Weights & Measures legislation compliance, and maximise ROI.

Demonstrating Due Diligence
Meeting Your Obligations

Regular testing of the performance of product inspection equipment is an essential part of any well-designed quality management system.

METTLER TOLEDO can provide a comprehensive range of certifiable test samples in a variety of materials, sizes and carriers to assist in this process.

Having the correct test pieces available to conduct the testing ensures that the performance verification is carried out effectively in order to meet due diligence obligations.

Supporting Compliance

Certified test samples from METTLER TOLEDO can support compliance with all leading food safety and pharmaceutical standards and external codes of practice including:

- BRC (British Retail Consortium)
- IFS (International Food Standard)
- SQF 2000 (Safe Quality Food)
- FSSC 22000
- FDA (Food and Drugs Association)
- GAMP (Good Automated Manufacturing Practice)
- All major retailer standards

Contaminant Detection Equipment
For Critical Control Points

Manufacturing processes in the food and pharmaceutical industry can introduce the risk of foreign bodies in the product. Manufacturers need to ensure contamination risks are identified and steps are taken to eliminate them.

The Hazards Analysis Critical Control Points (HACCP) audit process is commonly used to identify contamination risks in a manufacturing process. Once a risk is highlighted, steps must be taken to mitigate the risk. This is achieved through establishing Critical Control Points (CCPs)

Product inspection equipment used at CCPs can include metal detectors if the likely contamination is metal only or x-ray inspection systems if the contamination risks are more diverse - for example glass, mineral stone and calcified bone, and dense plastics, amongst others.

Identification of Critical Control Points
When a product inspection device is used as a Critical Control Point (CCP) the identification and labelling of the device becomes important as it is a key element of the manufacturing process and the Hazard Analysis and Critical Control Points (HACCP) programme.

A METTLER TOLEDO CCP sticker helps to assign and identify CCPs easily.

Frequency of Testing
For an Effective Programme

Product inspection systems should be periodically verified in order to demonstrate due diligence and ensure they continue to operate in accordance with specified standards.

Every product inspection application and product is different and it is not possible to define generic test frequencies.

Once a product inspection system has been installed and commissioned, it is necessary to define the testing frequency appropriate for the situation. This will be based on the product, the manufacturing process and risks of contamination highlighted from the HACCP audit.

The testing frequency should enable all products inspected since the last successful test to be isolated in the event of a failed test, and quarantined before they have left the manufacturing site.

Consideration should be given to conducting tests at the following stages:

• At the start and finish of daily production / shift
• At changes in production batches
• At changes in machine settings
• After downtime for repairs or maintenance

METTLER TOLEDO Service will support you in defining the right testing frequencies and procedures for your applications and products.

More information is contained on this subject in a range of guides available from METTLER TOLEDO. Guides are available covering metal detection, checkweighing and x-ray inspection. To register for free copies, visit:

▶ **www.mt.com/pi-guides**

Simplifying Testing
Effective Use of Test Packs

The use of test packs on production lines for packed goods is common and can save time and costs.

Test packs are specially-prepared, original packed goods which are intended to carry the test sample through the product inspection device. It is important that the pack reflects the actual product being inspected.

During the preparation of the test pack, it is important to verify that the pack is free of any contamination before affixing the test sample to it.

The test pack should be clearly labelled and identified using highly visible coloured tape in order to ensure that an undetected pack does not flow through the production process and accidentally into the supply chain.

Documentation of Testing
Keeping Accurate Records

The results of tests conducted should be documented in order to demonstrate due diligence and support compliance needs.

In the event of a customer complaint, a manufacturer may need to rely on these records to prove that procedures were correctly followed and that the product inspection systems were functioning correctly to the agreed specifications.

Well documented records should include the following:

- Product inspection system unique identification reference (for example serial number, CCP number…)
- Product being produced
- Date and time of test
- Test samples used
- Name of the person who conducted the test
- Test result for both detection and rejection
- Test result for any fail-safe devices
- Fault details and corrective action taken (as applicable)

Should any verification or part of a verification test fail, then the cause should be immediately investigated and rectified before production recommences. All necessary procedures to deal with products manufactured since the last satisfactory test should be started and the details of the fault and the subsequent corrective action should be recorded as part of the test record.

Metal Detection Test Samples
For Every Application

A Choice of Materials, Sphere Sizes and Carrier Types.

Test samples for metal detection applications are available in a wide range of sizes, metals and carriers.

The test samples are labelled with the contaminant sphere size and a serial number.

For easy identification they are also colour coded to indicate the contaminant material.

Metal	Colour
Ferrous	Red
Brass	Yellow
Phosphor Bronze	Yellow
Stainless Steel	Blue
Aluminium	Green

Consistency and Quality Guaranteed
All precision test spheres used in METTLER TOLEDO Safeline's metal test samples confirm to ANSI / AFBMA Std 10 or DIN 5401. The manufacturing process, of incorporating the spheres into a usable test sample carrier, is conducted in accordance with ISO 9001:2000 accreditation.

FDA Certified Carrier Materials for Improved Food Safety*
As there is a likelihood that test pieces will come into contact with food products, METTLER TOLEDO test samples utilise materials with full FDA certification for contact with foodstuffs.

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* All test sample carriers with the exception of laminated Test Cards are certified to FDA standards.

Metal Detection Test Sticks

For a Range of Inspection Applications

Format

- Standard   20mm x 20mm x 100mm
              for test spheres up to 10mm diameter
- Mini   10mm x 10mm x 100mm
              for test spheres up to 5mm diameter

FDA Certified – Yes

Application

Conveyor lines with discrete packaged or bulk products

Testing Procedure

Depending of the product application the sticks can be used with test packs (see "Simplifying Testing" on page 7) or they can be positioned directly into the product flow of bulk products.

The test sequence should be repeated for the specified number of tests with different contaminant materials and sphere sizes, according to each company's testing procedures and sensitivity standards.

Sphere size in mm	Aluminium	Ferrous-Chrome		Non-Ferrous / Brass		Non-Ferrous / Phosphor Bronze		Stainless Steel 316	
	Mini only	Standard	Mini	Standard	Mini	Standard	Mini	Standard	Mini
0.50	●		●		●				●
0.60	●		●		●				●
0.70	●		●		●				●
0.80	●		●		●				●
0.90	●		●		●				●
1.00	●		●		●		●		●
1.10					●				●
1.20			●		●				●
1.30			●		●				●
1.40									●
1.50	●		●		●		●		●
1.60			●		●				●
1.70									●
1.80			●		●				●
1.90									●
2.00	●		●		●		●		●
2.20			●		●				●
2.40			●		●				●
2.50	●		●		●		●		●
2.80			●		●				●
3.00	●		●		●		●		●
3.20			●		●		●		●
3.40			●						●
3.50	●		●		●		●		●
3.60			●						
3.70			●						
3.80			●		●				●
3.90			●						
4.00	●		●		●		●		●
4.30					●				
4.50	●		●		●		●		●
4.75			●						
4.80								●	●
5.00	●	●	●	●	●	●	●	●	●
5.40				●					
5.50		●		●		●		●	
5.55				●					
5.70								●	
6.00		●		●				●	
6.50		●		●				●	
7.00		●		●				●	
7.20								●	
7.50		●		●				●	
8.00		●		●				●	
9.00		●		●				●	
9.50								●	
10.00		●		●				●	

Metal Detection Test Cards

For Conveyorised Applications

Format
100mm x 65mm laminated credit card format for test spheres up to 3.5mm diameter

FDA Certified – No

Application
Conveyor lines with discrete packed products

Testing Procedure

Depending on the product application, test cards can be used with test packs (see "Simplifying Testing" on page 7) or they can be positioned directly into the product flow of bulk products.

Different contamination material types and sphere sizes should be used according to each company's testing procedures and sensitivity standards.

Sphere size in mm	Aluminium	Ferrous-Chrome	Non-Ferrous / Brass	Non-Ferrous / Phosphor Bronze	Stainless Steel 316
0.25		•			
0.30		•	•		•
0.40		•	•		•
0.45					•
0.50	•	•	•		•
0.60	•	•	•		•
0.70	•	•	•		•
0.80	•	•	•		•
0.90	•	•	•		•
1.00	•	•	•	•	•
1.10			•		•
1.20		•	•		•
1.30		•	•		•
1.40					•
1.50	•	•	•	•	•
1.60		•	•		•
1.70					•
1.80		•	•		•
1.90					•
2.00	•	•	•	•	•
2.20		•	•		•
2.40		•	•		•
2.50	•	•	•	•	•
2.80		•	•		•
3.00	•	•	•	•	•
3.20		•	•	•	•
3.40		•			•
3.50	•	•	•	•	•

Metal Detection Test Rods

Free Fall Vertical and Pipeline Inspection

Format
- Standard   10mm x 10mm x 440mm
  for test spheres up to 5mm diameter
- Flexible   450mm
  for test spheres up to 2mm diameter

Application
Inspection of powders and granules in vertical packaging applications, and inspection of liquids, pastes and slurries where test sample retrieval is not practical

Testing Procedure

If a metal detection application does not provide the possibility to catch a test sample in the event of it not being rejected, then the system can be tested by inserting a test rod or flexible test rod.

The test should be repeated for the specified number of times and for each metal contamination type, according to each company's testing procedures and sensitivity standards.

Sphere size in mm	Aluminium		Ferrous-Chrome		Non-Ferrous / Brass		Non-Ferrous / Phosphor Bronze		Stainless Steel 316	
	Standard	Flexible	Standard	Flexible	Standard	Flexible	Standard	Flexible	Standard	Flexible
0.50	●	●	●	●	●	●			●	●
0.60	●	●	●	●	●	●			●	●
0.70	●	●	●	●	●	●			●	●
0.80	●	●	●	●	●	●			●	●
0.90	●	●	●	●	●	●			●	●
1.00	●	●	●	●	●	●	●	●	●	●
1.10					●	●			●	●
1.20			●	●	●	●			●	●
1.30			●	●	●	●			●	●
1.40									●	●
1.50	●	●	●	●	●	●	●	●	●	●
1.60			●	●	●	●			●	●
1.70									●	●
1.80			●	●	●	●			●	●
1.90									●	●
2.00	●	●	●	●	●	●	●	●	●	●
2.20			●		●				●	
2.40			●		●				●	
2.50	●		●		●		●		●	
2.80			●		●				●	
3.00	●		●		●		●		●	
3.20			●		●		●		●	
3.40			●						●	
3.50	●		●		●		●		●	
3.60			●							
3.70			●							
3.80			●		●				●	
3.90			●							
4.00	●		●		●		●		●	
4.30					●					
4.50	●		●		●		●		●	
4.75			●							
4.80									●	
5.00	●		●		●		●		●	

Metal Detection Test Tablets

For Tablet and Capsule Inspection

Format
- Diameter   16mm x 3mm
                for test spheres up to 1.5mm diameter
- Diameter   25mm x 6mm
                for test spheres up to 3.2mm diameter

FDA Certified – Yes

Application
Pharmaceutical and nutraceutical applications

Testing Procedure

The specified test sample can be inserted into the product flow to verify the correct operation of the reject device.

The test should be repeated for the specified number of times and for each metal contamination type and sphere size, according to each company's testing procedures and sensitivity standards.

Sphere size in mm	Aluminium		Ferrous-Chrome		Non-Ferrous / Brass		Non-Ferrous / Phosphor Bronze		Stainless Steel 316		Stainless Steel 304
	16mm	25mm	16mm	25mm	16mm	25mm	16mm	25mm	16mm	25mm	16mm
0.25			●								
0.30			●		●				●		
0.40			●		●				●		●
0.45									●		
0.50	●	●	●	●	●	●			●	●	
0.60	●	●	●	●	●	●			●	●	
0.70	●	●	●	●	●	●			●	●	
0.80	●	●	●	●	●	●			●	●	
0.90	●	●	●	●	●	●			●	●	
1.00	●	●	●	●	●	●	●	●	●	●	
1.10					●	●			●	●	
1.20			●	●	●	●			●	●	
1.30			●	●	●	●			●	●	
1.40									●	●	
1.50	●	●	●	●	●	●	●	●	●	●	
1.60				●		●				●	
1.70										●	
1.80				●		●				●	
1.90										●	
2.00		●		●		●		●		●	
2.20				●		●				●	
2.40				●		●				●	
2.50		●		●		●		●		●	
2.80				●		●				●	
3.00		●		●		●		●		●	
3.20				●		●		●		●	

Metal Detection Test Balls

For Gravity Fall Applications

Format
- Diameter   20mm
  for test spheres up to 4mm diameter
- Diameter   27mm
  for test spheres up to 6mm diameter
- Diameter   40mm
  for test spheres up to 6mm diameter
- Diameter   48mm
  for test spheres up to 8mm diameter

FDA Certified – Yes

Application
Gravity fall inspection of powders and granules

Testing Procedure

The specified test sample can be inserted into the product flow to verify the correct operation of the reject device.

The test should be repeated for the specified number of times and for each metal contamination type and sphere size, according to each company's testing procedures and sensitivity standards.

If it is not possible to catch the test sample in the event of it not being rejected, then the system will have to be tested using a test rod (see "Metal Detection Test Rods" on page 14).

Sphere size in mm	Aluminium				Ferrous-Chrome				Non-Ferrous / Brass				Non-Ferrous / Phosphor Bronze				Stainless Steel 316			
	20mm	27mm	40mm	48mm	20mm	27mm	40mm	48mm	20mm	27mm	40mm	48mm	20mm	27mm	40mm	48mm	20mm	27mm	40mm	48mm
0.50	•	•			•	•			•	•							•	•		
0.60	•	•			•	•			•	•							•	•		
0.70	•	•			•	•			•	•							•	•		
0.80	•	•			•	•	•		•	•							•	•		
0.90	•	•			•	•			•	•							•	•		
1.00	•	•			•	•	•	•	•	•			•	•			•	•		
1.10									•	•							•	•		
1.20					•	•	•	•	•	•							•	•		
1.30					•	•	•	•	•	•							•	•		
1.40																	•	•		
1.50	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1.60					•	•	•	•	•	•	•	•					•	•	•	•
1.70																	•	•	•	•
1.80					•	•	•	•	•	•	•	•					•	•	•	•
1.90																	•	•	•	•
2.00	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
2.20					•	•	•	•	•	•	•	•					•	•	•	•
2.40					•	•	•	•	•	•	•	•					•	•	•	•
2.50	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
2.80					•	•	•	•	•	•	•	•					•	•	•	•
3.00	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
3.20					•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
3.40					•	•	•	•									•	•	•	•
3.50	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
3.60					•	•	•	•												
3.70					•	•	•	•												
3.80					•	•	•	•	•	•	•	•					•	•	•	•
3.90					•	•	•	•												
4.00	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
4.30										•	•	•								
4.50		•	•	•		•	•	•		•	•	•		•	•	•		•	•	•
4.75						•	•	•												
4.80																		•	•	•
5.00		•	•	•		•	•	•		•	•	•		•	•	•		•	•	•
5.40										•	•	•								
5.50						•	•	•		•	•	•		•	•	•		•	•	•
5.55										•	•	•								
5.70																		•	•	•
6.00						•	•	•		•	•	•						•	•	•
6.50								•								•				•
7.00								•								•				•
7.20																				•
7.50								•								•				
8.00								•								•				

Metal Detection Test Kits
Configurable to Suit Your Needs

Metal detection test sticks and test cards are also available in test kit packs for even greater convenience.

The kits will be configured to your needs: you define 12 test pieces you need to verify your metal detection application and we will deliver them in a robust test sample box which allows for safe storage and transport of the test samples.

Optimally Equipped

Our METTLER TOLEDO Service engineers will assist you defining the right configuration of your test sample kit.

By analysing your metal detection application and your product portfolio, as well as the possible metal contaminants, our service engineer will set up a proper verification test procedure and will recommend a test samples kit configured to your needs.

X-ray Inspection Test Samples
For Every Application

A Choice of Materials, Sizes and Carrier Types.

X-ray test sample carriers have been designed specifically for use with x-ray systems. The materials used in their construction are fully FDA certified and the correct density for x-ray contamination detection.

Test samples for x-ray applications are available in a wide range of sizes, materials and carriers. All test samples are labelled with the contaminant material and a serial number. Test samples are colour coded for easy identification, with the colour representing the contaminant material.

Contaminant Material*	Colour
Stainless Steel 316	Blue
Aluminium	Green
Soda Lime Glass	
- Low Mineral Content	Grey
- High Mineral Content	Grey

* Standard portfolio, but not limited to these materials. For more materials ask your local METTLER TOLEDO Service team to support you.

X-ray inspection test samples require carriers made of low density materials. Do not use metal detection test samples for the testing of x-ray equipment.

X-ray Inspection Test Pucks

For Bulk or Loose-Flow Applications

Format
20mm diameter puck for test spheres up to 8mm diameter.

FDA Certified – Yes

Application
Primarily for bulk or loose-flow product lines.

Testing Procedure

Test pucks have been designed specifically for use with bulk flow products and can be easily positioned directly into the product flow.

For the bulk flow application place the specified test samples evenly spaced into the product in the centre of the belt.

The test sequence should be repeated for the specified number of passes with different contaminant materials and sphere sizes, according to your testing procedures and sensitivity standards.

All X-ray Test Pucks are available in the below sizes[*]:

Stainless Steel and Aluminium:
- 0.5mm - 4.5mm in steps of 0.1mm
- Over 4.5mm in steps of 1mm

Soda Lime Glass - Low Mineral Content Glass:
- 0.5mm - 3.5mm in steps of 0.5mm
- Over 3.5mm in steps of 1mm

Soda Lime Glass - High Mineral Content Glass:
- 1mm - 4mm in steps of 0.5mm
- Over 4mm in steps of 1mm

[*] Standard portfolio, but not limited to these sizes and materials. For more materials and sizes ask your local METTLER TOLEDO Service team to support you.

X-ray Inspection Test Pens

Liquids, Slurries and Pastes within Packaged Applications

Format

70mm, 110mm and 150mm long test pen format for test spheres up to 6mm diameter. Custom lengths also available.

FDA Certified – Yes

Application

For use with liquids, slurries and pastes within packaged products, such as bottled sauces, cheeses, and some meats.

Testing Procedure

Test Pens are placed within the blind spots of detection, where it is least likely to detect contaminants within the product. For example in a jar this would be primarily in the corner of the base and on the side walls in the body area.

These worst case areas as well as the number of tests with different contaminant materials and sphere sizes must be defined for every product in your testing procedures and sensitivity standards.

All X-ray Test Pens are available in the below sizes[*]:

Stainless Steel and Aluminium:
- 0.5mm - 4.5mm in steps of 0.1mm
- Over 4.5mm in steps of 1mm

Soda Lime Glass - Low Mineral Content Glass:
- 0.5mm - 3.5mm in steps of 0.5mm
- Over 3.5mm in steps of 1mm

Soda Lime Glass - High Mineral Content Glass:
- 1mm - 4mm in steps of 0.5mm
- Over 4mm in steps of 1mm

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* Standard portfolio, but not limited to these sizes and materials. For more materials and sizes ask your local METTLER TOLEDO Service team to support you.

X-ray Inspection Multi-Slab
For Conveyorised Inspection

Format
Multi-slab format for test spheres up to 8mm diameter,
customisable to suit testing requirements.

FDA Certified – Yes

Application
For use where multiple materials and/or sizes are required to be
seen at the same time.
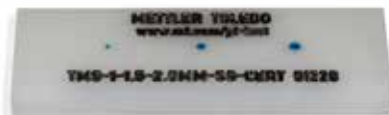
Testing Procedure

Multi-slabs are designed to run tests with 3 or 6 different
contaminants at the same time (different materials and sphere
sizes).

For bulk flow application place the specified test samples evenly
spaced into the product in the centre of the belt.

The test sequence should be repeated for the specified number
of tests with different contaminant materials and sphere sizes,
according to each company's testing procedures and sensitivity
standards.

The multi-slabs can also be positioned into or onto packed
products. In this case the test packs must be prepared like
mentioned in the chapter "Simplifying Testing" on page 7.
The test samples should be randomly placed under and on top of
the test packs and passed down the production line through the
x-ray inspection system, one after another.

All X-ray Multi-Slabs are available in the below sizes[*]:

Stainless Steel and Aluminium:
- • 0.5mm - 4.5mm in steps of 0.1mm
- • Over 4.5mm in steps of 1mm

Soda Lime Glass - Low mineral content glass:
- • 0.5mm - 3.5mm in steps of 0.5mm
- • Over 3.5mm in steps of 1mm

Soda Lime Glass - High mineral content glass:
- • 1mm - 4mm in steps of 0.5mm
- • Over 4mm in steps of 1mm

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* Standard portfolio, but not limited to these sizes and materials. For more materials and sizes ask your local METTLER TOLEDO Service team to support you.

X-ray Inspection Test Cards

For Conveyorised Inspection

Format
A 100mm x 65mm laminated credit card format for test spheres up to 12mm diameter.

FDA Certified – No

Application
Conveyor lines with discrete packed products.

Testing Procedure

Depending on the product application, test cards can be used with test packs (see "Simplifying Testing" on page 7) or they can be positioned directly into the product flow of bulk products.

Different contamination material types and sphere sizes should be used according to each company's testing procedures and sensitivity standards.

All X-ray Test Cards are available in the below sizes[*]:

Stainless Steel and Aluminium:
• 0.5mm - 4.5mm in steps of 0.1mm
• Over 4.5mm in steps of 1mm

Soda Lime Glass - Low Mineral Content Glass:
• 0.5mm - 3.5mm in steps of 0.5mm
• Over 3.5mm in steps of 1mm

Soda Lime Glass - High Mineral Content Glass:
• 1mm - 4mm in steps of 0.5mm
• Over 4mm in steps of 1mm

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[*] Standard portfolio, but not limited to these sizes and materials. For more materials and sizes ask your local METTLER TOLEDO Service team to support you.

X-ray Inspection Test Kits
Complete Testing Solutions

X-ray inspection test cards are also available in test kit packs for even greater convenience.

The kits will be configured to your needs: you define the 12 test cards you need to verify your x-ray inspection application and we will deliver them in a robust test sample box which allows for safe storage and transport of the test cards.

Optimally Equipped

Our METTLER TOLEDO Service engineers will assist you with defining the right configuration of your test sample kit.

By analysing your x-ray inspection application and product portfolio, as well as possible contaminants, our service engineer will set up a proper verification test procedure and will recommend a test sample kit configured to your needs.

Dynamic Checkweighing
Verification of Weighing Accuracy

Checkweighers provide valuable feedback to fillers, slicers, cartoners and other devices to eliminate costly product giveaway. They also support manufacturers to fulfil the legal metrological requirements, based on their weighing accuracy.

Therefore, a checkweighing system should be periodically verified in order to demonstrate due diligence and ensure that:

- It continues to operate in accordance with the specified accuracy standard
- It continues to reliably reject out-of-weight products
- All additional warning / signalling devices are effective (for example alarm conditions, reject confirmation)
- Installed fail-safe systems are functioning correctly

To be compliant with metrological regulations many different requirements need to be fulfilled. Support from your local METTLER TOLEDO Service team is available to set up a proper testing program for your checkweighing application.

Test Weights
For Calibration and Official Verification

Our test weights have a lead-free seal and comply with F2 class of the international recommendation OIML R111.

These weights are available in large or small sets and are supplied in a hygienic and handy carry case. The large case has an aluminium shell whilst the small case has a plastic shell. Both are supplied with a rigid foam inlay which can be easily removed for cleaning.

Both sets come with calibration certificates – supplied inside the case – from the Swiss Calibration Service (SCS), which is accredited in various countries according to the multi-lateral agreement EA.

Weights	Set 1 Quantities (small case)	Set 2 Quantities (large case)
1 g	1 x	1 x
2 g	2 x	2 x
5 g	1 x	1 x
10 g	1 x	1 x
20 g	2 x	2 x
50 g	1 x	1 x
100 g	1 x	1 x
200 g	2 x	2 x
500 g	1 x	1 x
1000 g	–	1 x
2000 g	–	2 x

Formal Certification
To Meet Compliance Needs

All METTLER TOLEDO Safeline test samples can be supplied with a formal certificate of conformance.

These confirm size, manufacturing standards, authenticity and provide the means to demonstrate a traceable history of manufacture.

The certificate can form part of formal records, for use in proving due diligence has been exercised if required.

Our tests weights are certified for verification, calibration and regulatory calibration as they have received the accredited "SCS" calibration certificate. SCS is the Swiss Calibration Service which comprises the calibration laboratories accredited by the SAS (Swiss Accreditation Service).

IPac
Installation & Performance Verification Packages For the Food Industry

The IPac qualification package ensures new machines immediately provide a return on investment and help you meet food safety standards and obligations, including IFS, BRC, SQF and FSSC 22000.

METTLER TOLEDO Service engineers verify installation standards, commissioning your system to achieve the highest performance parameters in active service.

IPac also contributes to continuous productivity improvement, delivering process-based operator training to drive optimum system efficiency as fast as possible, and maintain that performance level into the future, for as long as your equipment is in use.

EQPac

Equipment Qualification Package For the Pharmaceutical industry

Developed specifically for pharmaceutical manufacturers, our EQPac covers Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ).

It provides documented evidence that your equipment is properly installed, configured and verified to comply with the demands of FDA and GMP regulation.

EQPac demonstrates that the installed system is released for use in your application and set up for maximum performance with your own products.

Service and Aftercare
Maximise Uptime and Performance

Our services have been tailored to give you not only confidence and peace of mind, but also to help you attain and sustain the highest levels of productivity.

We understand the on-going support requirements of our customers and the challenges they face. Therefore we take a proactive approach to customer service and support.

Our total service capability can be defined by four categories:

- **Uptime**
- **Performance**
- **Compliance**
- **Expertise**

METTLER TOLEDO Service engineers don't think in terms of process downtime, product rejects and equipment failures.

We talk about Uptime. About optimal performance, 100% compliance and real process profitability.

Performance Verification Service
An Essential Quality Control Certification

Over time, the performance of a product inspection system may drift away from the specified standards laid down during initial installation and commissioning.

Performance Verification audits ensure that on-going compliance needs are met, whilst operator skills are developed through basic familiarisation training.

They provide the necessary certification and documentary evidence to show checks have been made and optimum performance is being achieved.

Performance Verification brings together industry safety guidelines, annual certification and up-to-date legislative standards.

Free Technical Guides
Make an Informed Decision

Our range of informative and authoritative guides covers metal detection, checkweighing, x-ray and vision inspection, and assists you in selecting the right product inspection solution for your production line.

They offer support in installing an all-encompassing product inspection programme and provide advice to help you in achieving compliance with standards, regulations and legislation.

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