

# Reference Standard for X-Ray Foreign Objects Detector Operational Instruction

Ref. #: JIMA-D006-RF:2010

## 1. General

This instruction describes key points and warnings in using Reference Standards for X-ray Detector of Foreign Objects (Hereafter called "Standards"). The operator must read this instruction prior to start using.

## 2. Purpose

These Standards are prepared to maintain and calibrate the detectability of X-Ray Foreign Objects Detector.

- Standards can enable you to check sensitivity (detectability) periodically under your own standard for quality assurance.

## 3. Operational environment

Must be used within following range of temperature and humidity.

- Temperature: -10 to +60 degree C, Humidity: Less than 85%

## 4. Storage Environment

Must be stored within following range of temperature and humidity.

- Temperature: -10 to +60 degree C, Humidity: Less than 85%
- Direct sunshining and Ultra-Violet may cause damage. Must be stored under dark area.

## 5. Note

- Before use, Standards must be checked damage, crack, delamination, loss of object(s). If any damage is found, do not use it immediately, but replace to new one.
- Do not fold or curve, otherwise Standards may get delamination and objects may be taken away.
- Do not place Standards directly onto foods, water, oil and chemicals. Those materials will cause delamination of the package. (In such cases, please put Standards into a sealed plastic bag for food in junction with sanitary consideration.)
- If Standards are used or stored out of above recommended Operation environment or Storage environment, it may be damaged or worn.
- Standards must be sterilized before every use and periodically.
- When standards are disposed, please follow Law for Industrial Waste or local rules appropriately.

## 6. Operation

- X-ray system must be calibrated with Standards at certain timing such as when the system is going to be used after no use for long time, after certain hours, at the start of operation, at the end of operation, at change of production line or change of specimen and etc.
- Standards must be checked its damage before use.
- The calibration must be done under the same condition as actual inspection for environment temperature, humidity and object temperature.
- Depend on each test case, it may cause difference in sensitivity and result by positioning and direction of Standards.
  - \* Detectability will be affected by following parameters. So, calibration must be done repeatedly by changing those parameters to meet with actual condition.
  - \* Test parameters, selection of materials of Standards, positioning of Standards and test procedure must be considered and established before starting use.
- Position of Standards in specimen (X,Y and Z position).
- Direction of Standards to be placed if the shape is not round ball.
- Material of the Test Piece
- Size (Diameter and Length) of Standards
- Distance between X-Ray source and Standards, and between Standards and the detector.
- Speed of belt conveyer
- Set up condition of X-Ray system (Voltage, Current, time of exposure and etc.)
- Must use same materials as foreign objects.

- \* Details and actual usage of Standards must be advised by the manufacturer of the X-ray system.
- \* Standards are consumption material. They must be replaced periodically or if necessary or if damaged.



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