

1. Is the lead thickness for the standard used to determine the reject rate the minimum lead thicknesses, in the table below, which I took from the drawings associated with the respective shielded containers?

Shielded Container	Minimum Cavity Width	Minimum Lead Thickness
SC-30G1	0.94 in.	0.88 in.
SC-30G2	1.40 in.	1.31 in.
SC-30G3	2.75 in.	2.57 in.
SC-55G2	1.98 in.	1.86 in.

Yes, the sidewall lead thicknesses identified in the above table are the basis for the reject rate.

2. Is the standard used to determine the reject rate not a stepped configured (i.e., the configuration seen in the figure below adjacent to the “arrow” and the “D”), but a simple lead plate sandwiched between two stainless steel plate (i.e., the configuration seen in the figure below farthest from the “arrow” and the “D”)?

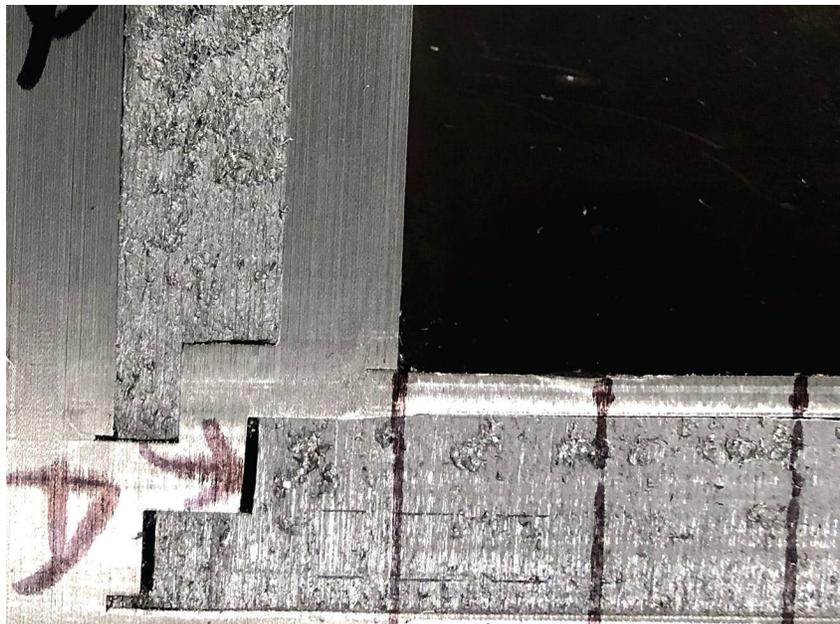


Figure 7-23 from Regulatory Hypothetical Accident Condition Type B Testing for the HalfPACT Shielded Container Payloads

The calibration standard that is used to determine the reject rate is comprised of two flat steel plates representing the inner and outer shells at their minimum thicknesses and a flat lead plate at a thickness that's given in the above table from Question 1. The width and length of the calibration standard is of sufficient size to preclude indirect gamma radiation from affecting the measured reject rate.

Gamma scanning is performed from an elevation starting at the bottom of the shielded container's payload cavity to the top of the payload cavity. Slant shots below and above these axial limits are not performed due to the difficulty of getting accurate and meaningful answers from a calibration standard that is not configured for those specific geometries.

3. The response to question 3 stated: “ the radioisotope (source) is placed at a distance equal to the source to survey instrument distance representative of the SCA to be gamma scanned.” Is the source placed in the center of the shielded container cavity or next to the cavity wall? If it is placed next to the cavity wall, does the source move in tandem with the detector shown in the picture below?



Figure 6-47 from Regulatory Hypothetical Accident Condition Type B Testing for the HalfPACT Shielded Container Payloads

Yes, during the gamma scanning process the radioactive source is positioned at the axial centerline of the shielded container. The radial distance to the detector is held constant, and is slightly greater than the outer diameter of the shielded container (we found that placing the detector on the shielded container's outer surface resulted in a non-constant radial distance that, although not changing much, nevertheless still affected measured results). The source is always configured to be at the same axial elevation as the detector so that measurements are straight out through the shielded container's sidewall to duplicate the configuration of the calibration standard.