

Split-field exposures are a tool frequently employed to assess several potential misalignments in linear accelerators. In this technique two film exposures are taken at opposed gantry or collimator angles and the alignment of the resulting field edges is examined. The field edge alignment is sensitive to four potential effects: asymmetry of the jaws, misalignment of the beam spot, misalignment of the gantry and collimator rotation axes, and gantry sag. We present a block design that facilitates the exposures required for split-field tests. The block arrangement consists of a pattern of three polygons cast in lead or Cerrobend. Exposed films with a prototype assembly show that offsets of ± 1 mm are readily visible. The device has several advantages over previous designs. The blocks are mounted in the grid tray of the accelerator, making their use straightforward and allowing all exposures to be accomplished with a single room entry. Also the field used is not restricted to a single size. As with the original design, light field-radiation field coincidence tests can be accomplished while the split-field tests are performed. The design described here makes split-field tests practical for routine quality assurance on a linear accelerator and for regular use in procedures such as stereotactic radiosurgery where accurate alignment of the accelerator is crucial.