Flexible Shielding System for Radiation Protection

Holes For Master Slave Manipulators

Zinc Bromide Windows

Lead Shielding Panels Above Windows Supported By Special Water Cans

Structural Member Anchored to Concrete Wall

Loose Water Cans

41 cm (16 in) Of Water

Lead "Shine" Shield Around Windows

Water Filled Window Support Tanks

Structural Support For Lead And Can Stacks (Unistrut)

Typical Can Stack

5.1 cm (2 in) Thick Wall Of Interlocking Lead Bricks (Graviner)

Movable Access Panel

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A flexible, low-cost shielding system, consisting of water-filled steel cans and lead bricks, is designed to protect against nuclear radiation. The versatile modular construction permits easy modification of the shielding wall thickness in order to attenuate different levels of radioactivity. The overall geometry can also be re-arranged to accommodate different enclosure sizes. The portable components (see figure) include water-filled tank sections, zinc bromide windows, a turntable unit, master-slave manipulators, interlocking 5.1 cm (2 in) lead bricks, and the support structure for the assembled shield.

The water-filled cans (24 to a stack) are strapped to a pallet which has a special mounting base. Each row of cans is placed in position to the left or right of the adjacent row, creating the desired horizontal displacement between cracks. The cold-pressed, interlocking lead bricks, made of 4% antimonial lead, are formed into various shapes and sizes to allow for greater flexibility in the shield. The individual bricks vary in weight, but generally can be easily handled and stacked by one man.

Note:
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