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## Lead-lined Gypsum Wallboard Specifications

### **PART 1 – PRODUCT DESCRIPTION**

BASIC USE – Lead-lined gypsum wallboard is used as a radiation shielding against x-rays and gamma rays. It can be used in both the wall and the ceiling.

COMPOSITION – Gypsum wallboard is available in 1/2" or 5/8" thickness. Lead thickness ranging from 1/32" (2 lb. per sq. ft.) through 1/8" (8 lb. per sq. ft.) can be applied to the wall board and is permanently attached with a latex adhesive.

### **PART 2 – TECHNICAL DATA**

INDUSTRY STANDARDS – NCRP –Report No. 49: Structural Shielding Design and Evaluation for Medical use of X Rays and Gamma Rays of Energies up to 10 MeV.

#### MATERIAL SPECS –

ASTM: Standard spec for Lead and lead Alloy Strip, Sheet and Plate with certifications from the lead mill.

Fed. Specs QQ-L-201d: Lead Sheet

ASTM C36, Fed. Spec. SS-L-30D Type III: Gypsum Drywall

Grade X fire code rock will be provided.

### **PART 3 – HANDLING, STORAGE & PROTECTION**

Due to the weight of the lead in the product, care must be taken in the handling of the material to avoid breakage. Materials are to be stored in a dry, well ventilated area. Materials are to be covered with vapor retardant and placed not less than 3 inches above concrete slabs.

### **PART 4 – INSTALLATION**

SITE PREPARATION – Wall framing of wood or metal studs should be completed and sized to support wallboard.

INSTALLATION – Wallboard is to be applied vertically to allow for full strip attachment. 2" lead strips, the same height and thickness of the shielding, are fastened vertically onto the studs on which a joint will occur. 3" strips are used under corner joints. Fastening method options include:

A.) Drywall screws are slightly recessed and a 5/16" diameter lead disk is fastened over the head with building adhesive to allow joint compound to cover areas.

B.) Lead tabs are first attached to the metal stud face flange 8" O.C. and bent inside the web area. The wallboard is placed and screws attached through the tab.

Wallboard is attached using standard drywall screws 8" O.C. at the vertical edges and 12" O.C. at the intermediate studs. Penetrations including door and window frames, HVAC, utilities etc. must be shielded with lead linings or baffles. Lead shielding shall be arranged with a minimum 1" overlap at all joints to provide continuous effective radiation shielding through all joints.