

# SOP SAFE USE OF LEAD SHIELDING

Building/Room(s) covered by this SOP	Cenpa 110
Department	Physics
Principal Investigator Name	Peter Kammel
Principal Investigator Signature/Date	9/14/2022

Lead is a widely used and highly effective means of shielding radiation. However, metallic lead itself can be toxic if ingested or inhaled. Studies have shown that lead particles are readily removed from the surface of uncoated lead and can be a source of occupational exposure. Lead particles may be transferred to hands or clothing, or accumulate as dust on floors and other laboratory surfaces. Under heavy handling, it may even become airborne.

Rm 110 has only shielding blocks in the source storage cabinet which are tape wrapped to prevent oxidation and direct contact with metallic lead surfaces. In addition the Sr-90 has a lead shield with is also plastic wrapped. The only allowed operation is the removal of the top brick to gain access to the radioactive source. Given the weakness of the source and its containment, we decided to not even cover the source with the top brick.

- ALWAYS wear gloves when handling metallic lead. If you handle more than a few pieces, also wear a disposable lab coat and safety glasses. However that is not a foreseen standard procedure for Rm 110.
- We strongly encourage to use gloves even when touching wrapped lead blocks.
- Regularly clean work areas around lead shielding using damp wipes.
- **Wash hands thoroughly after handling lead and before leaving the lab.**
- NEVER use lead bricks as a doorstop!!
- Never throw lead out in regular trash – contact EHS to recycle.
- Lead is very heavy! Lift only one brick at a time, and avoid reaching or twisting while lifting. Set bricks down gently to minimize dust generation, and beware of fingers and toes.
- If your work area needs a large amount of lead shielding for radiation protection, make sure the floor and any furniture can handle the weight.
- Cutting or machining of lead shielding is not allowed in Rm 110.

**I have read and understand the content of this SOP:**

**Training records maintained by G. Holman**

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