



## **Guideline for Determining the X-ray Shielding Requirements for a Mammographic Facility**

This guideline may be used to determine the shielding required for a new installation or when modifying an existing one, provided the following criteria apply to the installation. Before using the guideline, first read the Explanatory Notes provided. If the following Criteria do not apply, contact the Radiation Protection Services office for assistance. Note: the shielding specified in this guideline is to protect workers outside the x-ray room to the Workers Compensation Board Action Level (1 mSv/year) rather than to the Exposure Limit (20 mSv/year). Owners wishing to shield to an exposure level greater than 1 mSv/year outside the room should not use this guideline and should be aware of the regulatory implication if the Action Level is or may be exceeded.

### **Criteria**

- The x-ray unit is operated at up to 35 kVp.
- The room containing the unit has dimensions of at least 3m x 3m
- The x-ray workload (number of film exposures) per 40 hour workweek does not exceed 1200.
- Shielding is required to provide protection outside the room, a) for workers to meet the Action Level of 1mSv/year, as specified in the WCB Occupational Health and Safety Regulation (see WorkSafeBC website: <http://http://www2.worksafebc.com/publications/OHSRegulation/Part7.asp>) and b) for members of the public, to not exceed the recommended public dose limit of 1 mSv/year.
- Operator protection is required to ensure that the maximum permissible dose of 20 mSv/year is not exceeded and that doses are kept as low as reasonably achievable. The shielding specified for the operator protective shield (see over) will ensure the operator does not exceed the WCB 1 mSv/year Action Level, keeping exposures well below the dose limit.

If your facility design and use factors meet the above criteria, you can use the shielding information (over) to determine the thickness of materials required for the barriers. Complete the assessment and provide a copy to the responsible person carrying out the installation.

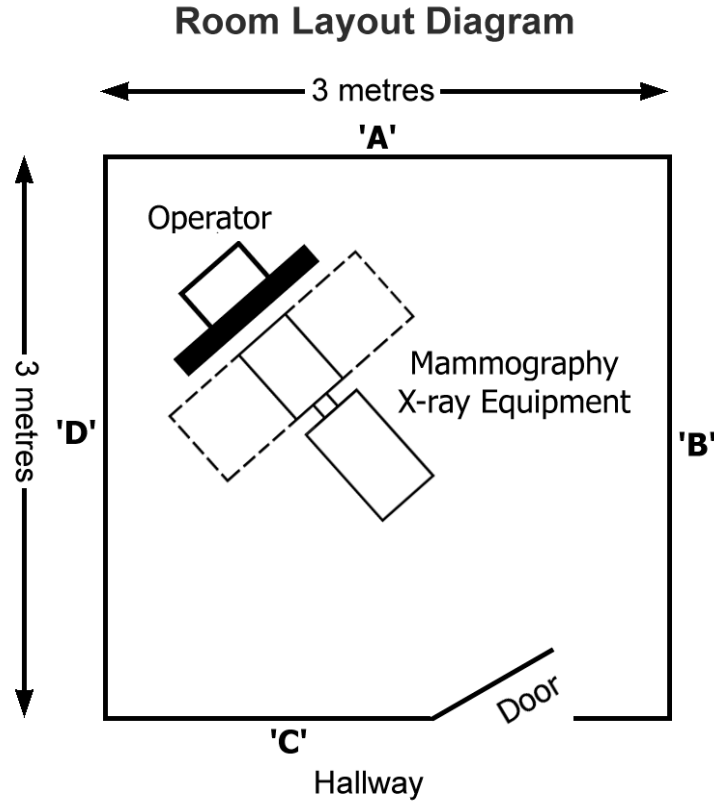
***N.B. Building plans are NOT required to be submitted to the Radiation Protection Services.***

(over)



## Shielding Requirements for up to 1200 Mammographic Exposures/Week

The walls labeled 'A', 'B', 'C' and 'D', surrounding the mammographic x-ray equipment, requires a minimum thickness of 2.5 cm (1") standard drywall construction. The operator protective shield requires 0.3 mm equivalent of lead glass or lead acrylic material. The door to the room requires either 2.5 cm (1") thickness of solid wood or 1 mm (1/25<sup>th</sup> inch) thickness of steel. No additional shielding is required on intervening floors (above/below room).



### Mammography Facility Name & Address:

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Number of Exposures Per Week: \_\_\_\_\_

Date: \_\_\_\_\_

Signed: \_\_\_\_\_

Name: \_\_\_\_\_

**Keep a copy of this signed document on record for future reference/inspection. Attach a copy of room plan showing adjacent areas and their function with this document.**