



Revised June 2014

GOVERNMENT OF BERMUDA
Ministry of Health, Seniors and Environment
Department of Health

License Conditions
CONVENTIONAL Dental X-Ray Equipment
(Film)

Following the International and/or Canadian "Radiation Protection in Dentistry Recommended Safety Procedures for Dental E-Ray Equipment (Safety Code 30),
the Licensee will comply with the following conditions:

1. The operator **shall** keep a distance of at least three meters from the x-ray tube during dental radiography.
2. Setting of X-ray tube voltage and irradiation time.
 - (a) Radiography **shall not** be done with an X-Ray tube voltage below 50 kilovolts (peak) and should not be carried out at voltages below 60 kilovolts (peak).
 - (b) The maximum pre-settable irradiation time **shall not** exceed 5 seconds, or the time required to deliver 50 mA-seconds, whichever is shorter.
3. Leakage radiation **shall** be less than 100 mR in one hour at one meter from the tube.
4. Radiation leakage outside of the shielded room **shall** not exceed **7.5 μ Av/hr.**
5. Manual film processing is not recommended. If used, the darkroom shall be well designed and a timer shall be used. **Sight developing shall not be done.**
5. The collimating applicator **shall** be of the open-ended type: pointed or close ended applicators shall not be used. A position-indicating device **shall** be provided to limit the minimum focal spot to skin distance to not less than 18 cm.
6. The radiation beam **shall** be collimated to a circle of not more than 7 cm diameter at the skin surface. Collimation to a rectangular area of not more than 38.5 square cm is desirable.
7. The patient **shall** be provided with a lead-rubber shielding apron.
8. The radiation dose to the patient **shall** be within the range of the "Dental Exposure Normalization Technique" programme for kilo-voltage used.
9. **The tube head and arm shall be stable and shall not float, drift or vibrate.** The suspension tube of the head **shall** be stable in all positions so that motion distortion is minimized.
10. Image quality **shall** be an acceptable standard.
11. Operator and personnel doses **shall** fall within the annual recommended dose limits stated in current international regulations.
12. Radiation protection inspection will be done bi-annually to verify that:
 - (a) The dental X-Ray equipment functions properly.
 - (b) Equipment is installed in a safe environment and is used in a way that provides maximum radiation safety for patients and operators.

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