Standards for Dental X-Ray Equipment (2025)

In recognition of the previous inspection programme under the BCDA, XRAA maintains the following standards for the duration of 2025. In 2026, XRAA will modify standards according to the 2022 version of Health Canada Safety Code 30.

General Requirements

All equipment must possess an active Canadian Medical Device License at the time of purchase.

Within the period of June 1, 2025-December 31, 2025, each piece of x-ray equipment must have a Radiation Protection Survey performed at least every five years, defined as before December 31 of the calendar year five years after the previous survey. Beginning January 1, 2026, each piece of x-ray equipment must have a Radiation Protection Survey performed at least every three years, defined as before December 31 of the calendar year five years after the previous survey.

Radiation Protection Surveys

The following elements must be included in each Radiation Protection Survey:

1. Identifiers of the x-ray equipment, including manufacturer, model, serial number, and date of manufacture for the x-ray tube and control panel
2. Presence of radiation safety signage
3. Functionality x-ray status indicators
4. Indication of loading factors
5. Irradiation switch length (at least 3 m from x-ray tube) and functionality
6. Functionality of controlling timer
7. Minimum beam filtration
8. Adequacy of mechanical stability
9. Reproducibility of exposure (must be within 5% for 10 consecutive exposures)
10. Accuracy of X-ray tube voltage (must be within 7% of specified, with exposures < 50 kVp impossible)
11. Linearity of exposure (must be within 10% for exposures greater than 0.67 ms)

Equipment Acceptance Testing

1. Any new equipment installed must have acceptance testing performed prior to clinical use.
2. The acceptance testing may be performed by the vendor or as a Radiation Protection Survey from a qualified Inspector, as defined by these accreditation standards.
3. If performed by the vendor, a temporary certificate is issued for a time period listed in Table 1. A Radiation Protection Survey must be performed prior to the expiry date of the temporary certificate for a standard certificate to be issued.
4. A certificate following the Radiation Protection survey expires at the end of the month, five calendar years after the date of the survey.

Table 1

FSA Code	Region	Expiry Date
V0C, V0J, V0L, V0T, V0V, V0W, V1G, V8C, V8G, V8J	Northwest (*Anahim Lake, Bella Bella, Bella Coola, Fort Nelson, Masset, Prince Rupert, Sandspit, Smithers, Terrace*)	6 months from issuance
V0K, V0P, V0N, V1J, V1K, V2G, V2J, V2L, V2L, V2M, V2N, V8A	Prince George (*Fort St. John, Prince George, Quesnel, Williams Lake*)	3 months from issuance
V0A, V0E, V0G, V0H, V1A, V1B, V1C, V1E, V1H, V1L, V1N, V1P, V1R, V1S, V1T, V1V, V1W, V1X, V1Y, V1Z, V2A, V2B, V2C, V2E, V2H, V4T, V4V,	Kelowna (*Castlegar, Cranbrook, Kelowna, Kamloops, Penticton, Trail*)	2 months from issuance
V0P, V0R, V0S, V8L, V8M, V8N, V8P, V8R, V8S, V8T, V8V, V8W, V8X, V8Y, V8Z, V9A, V9B, V9C, V9E, V9G, V9H, V9J, V9M, V9N, V9L, V9P, V9R, V9S, V9T, V9V, V9W, V9X, V9Y,	Vancouver Island (*Campbell River, Comox, Port Hardy, Nanaimo, Tofino, Victoria*)	2 months from issuance
V0M, V0X, V2P, V2R, V2S, V2T, V2V, V2X, V2Y, V2Z, V3A, V3B, V3C, V3E, V3G, V3H, V3J, V3K, V3L, V3M, V3N, V3R, V3S, V3T, V3V, V3W, V3X, V3Y, V4A, V4B, V4C, V4E, V4G, V4L, V4M, V4N, V4P, V4Z, V5A, V5B, V5C, V5E, V5G, V5H, V5K, V5L, V5N, V5S, V5T, V5V, V5W, V5X, V5Y, V5Z, V6A, V6B, V6C, V6E, V6G, V6H, V6J, V6M, V6N, V6P, V6V, V6W, V6Y, V6Z, V7A, V7B, V7C,V7E, V7H, V7J, V7L, V7M, V7N, V7P, V7R, V7S, V7T, V7V, V7W, V7X, V7Y, V9K, VSE	Lower Mainland (*Abbotsford, Sunshine Coast, Vancouver*)	1 month from issuance

The following specific standards are also required for each of the following types of equipment:

Intraoral

1. Intra-oral radiography must not be carried out at x-ray tube voltages below 60 or above 70 kVp.
2. The operating switch must be of the “dead man” type.
3. Beam filtration must be permanently installed.
4. The focal spot should be clearly identified on the tube housing. The covering of the tube housing must be intact and secure.
5. A film/image receptor holder with an alignment device for the x-ray beam should be used.
6. A long cone (30 cm or longer) should be used, but the minimum focal spot to skin distance must be 18 cm. The diameter of the position indicating device must not be greater than 7 cm.
7. For film-based imaging, E-speed film or faster must be used, and D-speed film must not be used.
8. The Kerma Area Product (KAP)/Dose Area Product (DAP) may be displayed on the device and should be within 30% of the displayed value of the device.

Extraoral (Panoramic, Cephalometric, CBCT)

1. Exposures must not be carried out at x-ray tube voltages below 60 kVp.
2. operator must be able to observe the patient during the exposure. This may be achieved using an appropriately shielded window, camera/monitor, a mirror, or other means of viewing the patient.
3. When only a panoramic image is prescribed, it must be obtained from a true panoramic exposure, not a panoramic image reconstructed from a CBCT exposure.
4. The focal spot should be clearly identified on the tube housing at the focal spot to skin distance must not be less than 15 cm.
5. The Kerma Area Product (KAP)/Dose Area Product (DAP) may be displayed on the device and should be within 30% of the displayed value of the device.
6. Exposures must not be carried out at x-ray tube voltages below 60 kVp.
7. The operator must be able to observe the patient during the exposure. This may be achieved using an appropriately shielded window, camera/monitor, a mirror, or other means of viewing the patient.
8. Beam filtration must be permanently installed.
9. The focal spot should be clearly identified on the tube housing. The covering of the tube housing must be intact and secure.
10. For panoramic or cephalometric units, the operating switch must be of the “dead man” type.