

Manufacturer's Recommendations for Alternate Dental CBCT QA Program

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**Table 3** Requirements for Dental CBCT

| <b>Item</b> | <b>Required Test or Procedure</b>   | <b>Frequency</b>   | <b>Substitute Test or Procedure</b>  | <b>Standard</b>   |
|-------------|---|--------------------|--|---|
| 1           | Equipment Function<br>"Indicators,<br>Mechanical & other<br>Safety Checks | Daily              | Must work properly   | Must work properly  |
| 2           | Film Processing QC<br>Testing   | Daily              | None, not applicable   | None, not applicable  |
| 3           | CT Number for Water   | Daily              | Section 5.2.1. Noise and Gray<br>Scale (Uniformity) Test<br>Page 19-22<br>(Appendix A) | Acceptable Grayscale<br>values for D_001 Recon<br>Filter:<br>Aluminum: 140-180<br>Bone EQ. Resin: 102-138<br>Acrylic: 54-86<br>Air: <21 |
| 4           | Field Uniformity  | Daily              | Section 5.2.1. Noise and Gray<br>Scale (Uniformity) Test<br>Page 19-21<br>(Appendix A) | Make sure the value for<br>"Gray Scale (SD of 5<br>means)" is less than 12.5  |
| 5           | Laser Film Printer QC   | Weekly             | None, not applicable   | None, not applicable  |
| 6           | Low Contrast<br>Resolution  | Initial & Annually | Section 5.2.2. Contrast<br>Resolution Test<br>Page 22<br>(Appendix A)                  | Acceptable Grayscale<br>values for G_001 Recon<br>Filter:<br>Aluminum: 187-233<br>Bone EQ. Resin: 87-123<br>Acrylic: 33-63<br>Air: <19  |
| 7           | High Contrast<br>Resolution   | Initial & Annually | Section 5.2.3. Spatial<br>Resolution<br>Page 20-25<br>(Appendix A)                     | Verify that the value for<br>"MTF at 2 LP / mm" is at<br>least 10%.   |
| 8           | Noise   | Initial & Annually | Section 5.2.1 Noise and Gray<br>Scale (Uniformity) Test<br>Page 19-21<br>(Appendix A)  | The value for Noise (SD at<br>A) center region is less<br>than 12.5   |
| 9           | Scan Localization<br>Light Accuracy                                       | Initial & Annually | 5.1.1. Positioning and Artifact<br>Tests<br>Page 9<br>(Appendix A)                     | Check that the centers for<br>the X and Y planes are<br>within $\pm 2$ mm of the center<br>of the phantom.                              |
| 10          | Medical Physicist's<br>QC Survey  | Initial & Annually | Same as alternate Dental CBCT  | NJAC 7:28-22.10   |
| 11          | Medical Physicist's<br>Quality Assurance<br>Program Review                | Initial & Annually | Same as alternate Dental CBC   | NJAC 7:28-22.4(a)7  |