

# Introduction | Ultrasonic Foil Test

The HTM01-05 recommends every Dental practice should complete several validation tests on Ultrasonic baths. These tests are designed to ensure that the ultrasonic bath is able to perform its function correctly and to the right standard.

A competent, appropriately trained member of staff within the practice can complete these tests. An Engineer should be called if two consecutive failed tests occurred (i.e the first test failed and the retest failed).  
\*\*NB Ensure manufactures advice is sought if the equipment is within a warranty period.

Remember: Ultrasonic Validation must occur on installation and annually thereafter. Contact your local engineer to arrange this and ensure details of validation visits are recorded.

“**HTM01-05 Chapter 14 Section 14.1**  
*“The Ultrasonic cleaner should be maintained in accordance with manufacturers instructions. In the absence of these, the schedules outlined in this chapter should be followed”*

| Legislation   | Test Type                     | Testing Period | Purpose                                                                                                                   |
|---------------|-------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------|
| HTM0105 14.3  | Visual cleaning efficacy test | Daily          | Checking that all signs of contamination have been removed after the cleaning cycle using an illuminated magnifying lamp. |
| HTM0105 14.3  | Cleaning efficacy test        | Weekly         | Checking that heavy soil and contamination is removed fully.                                                              |
| HTM0105 14.3  | Residual protein test         | Weekly         | Checking that any residual protein contamination is removed effectively                                                   |
| HTM0105 14.03 | Ultrasonic activity test      | Quarterly      | To ensure the activity is even and consistent across the bath                                                             |
| HTM0105 14.03 | Automatic control test        | Quarterly      | To ensure the temperature reached is as per the manufactures guidelines and appropriate for the detergent being used      |

## Quarterly Activity Test | Ultrasonic Foil Test

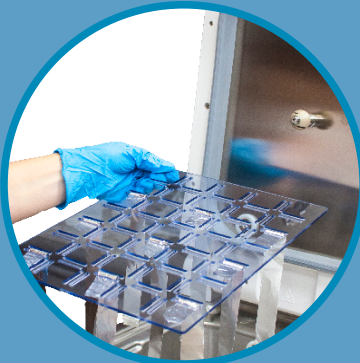
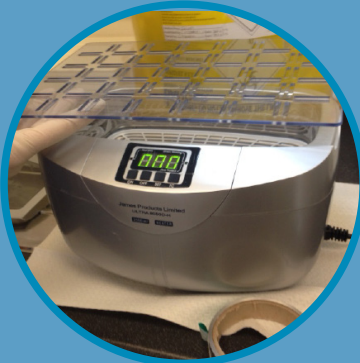
The foil test is designed to scrutinise the ultrasonic activity to ensure it is uniform throughout the tank thus producing a consistent level of activity across all loads. This is by far the most complicated and fiddly test to do but can be made easier using the QWS testing grid rather than traditional masking tape. Standard test foil is preferred over household foils to maximise repeatability and consistency of the test.

Test foil should be between 0.015mm and 0.025mm, foils that do not meet this requirement may not be suitable and may give inaccurate readings.

Testing must take place with a clean ultrasonic bath, without a load and with your usual enzymatic detergent dose added to the water. PPE must be worn at all times when conducting this test.

### Equipment Required:

1. QWS Foil Testing Grid or masking tape
2. Foil Reel
3. Scissors
4. Ruler
5. Paper clips or small weights
6. Market pen
7. Paper towels



## PPE must be worn at all times

### Procedure Instructions if using Test Grid

1. Fill bath with water to desired level, add required level of chemical additive and degas as per manufacturer's instructions.
2. Align the grid on the bath so 9 equally spaced testing points can be identified (3x3 Grid), mark these with your marker on the grid.
3. Use a ruler to measure the depth of the tank from the level of the testing grid to the bottom of the bath. To calculate the Foil Strip Length (FSL) to use take 1cm off this measurement. Make a note of this strip length for future reference (You could write it on the edge of the testing grid).
4. Remove the grid and place on a flat surface.
5. Cut 9 strips of foil to 5cm longer than the Foil Strip Length and add a paper clip to the bottom of each. The 5cm excess is to hold the strip in place when it is bent over the grid intersections.
6. Mark each strip with a number from 1-9.
7. Suspend the 9 strips from the testing grid by wrapping the foil around the grid intersections as necessary.
8. The paperclip at the bottom of the foil strip should be no more than 10mm above, but not touching the bottom of the bath.
9. Place the prepared grid back over the bath. The grid being in place provides "cover" to reduce the risk of aerosol exposure.
10. Turn the bath on for cycle time.
11. Remove the strips ready for inspection and lay on paper towels.
12. Inspect & record result, stick foil strips in log book and complete page.
13. Test grid should be wiped with appropriate non-alcohol wipe such as Plastisept Eco and dried with a non linting cloth.

### Procedure Instructions if using Masking Tape

1. Fill bath with water to desired level, add required level of chemical additive and degas as per manufacturer's instructions.
2. Create a 3x3 masking tape grid so 9 equally spaced testing points can be identified. Ensure all traces of water are removed to ensure the masking tape adheres to the bath firmly. Often a strip of tape is needed to place around the circumference of the grid to hold the masking tape grid in place.
3. Use a ruler to measure the depth of the tank from the level of the testing grid to the bottom of the bath. To calculate the Foil Strip Length (FSL) to use take 1cm off this measurement. Make a note of this strip length for future reference
4. Cut 9 strips of foil to 5cm longer than the Foil Strip Length and add a paper clip to the bottom of each. This 5cm excess is to hold the strip in place when it is stuck to the masking tape.
5. Mark each strip with a number from 1-9.
6. Stick each foil strip to the masking tape at the correct intersection.
7. The paperclip at the bottom of the foil strip should be no more than 10mm above, but not touching the bottom of the bath.
8. Cover the bath to reduce the risk of aerosol exposure.
9. Turn the bath on for cycle time.
10. Remove the strips ready for inspection and lay on paper towels.
11. Inspect and record result, stick foil strips in log book and complete page.

### Reading the Results | Ultrasonic Foil Test

Record a pass if all strips have been eroded consistently and uniformly. The areas of maximum erosion should be at similar positions and visual inspections should show consistent erosion. Compare these to previous tests to ensure consistent erosion patterns and identify any changes to pattern. Changes to usual patterns require further investigation as it could indicate a transducer failure. Record a failure if no erosion has taken place or it is outside of the normal pattern.