TD041 – Tefcote Materials Testing

Aims;

To determine the compatibility of two different finishes on concrete substrate found in the construction of clean rooms to Hydrogen Peroxide Vapour (HPV) decontamination cycles.

Method;

The Tefcote samples were provided and identified with the paint name.

A BIOQUELL Z (Serial No: 200811BZ00185) was placed in a room of the following dimensions: 3.1m x 2.5m x 3.5m which has the total volume of 27m^3

An R30 Aeration unit (Serial No: 201008R30000) was connected to the BIOQUELL Z to reduce the Aeration time.

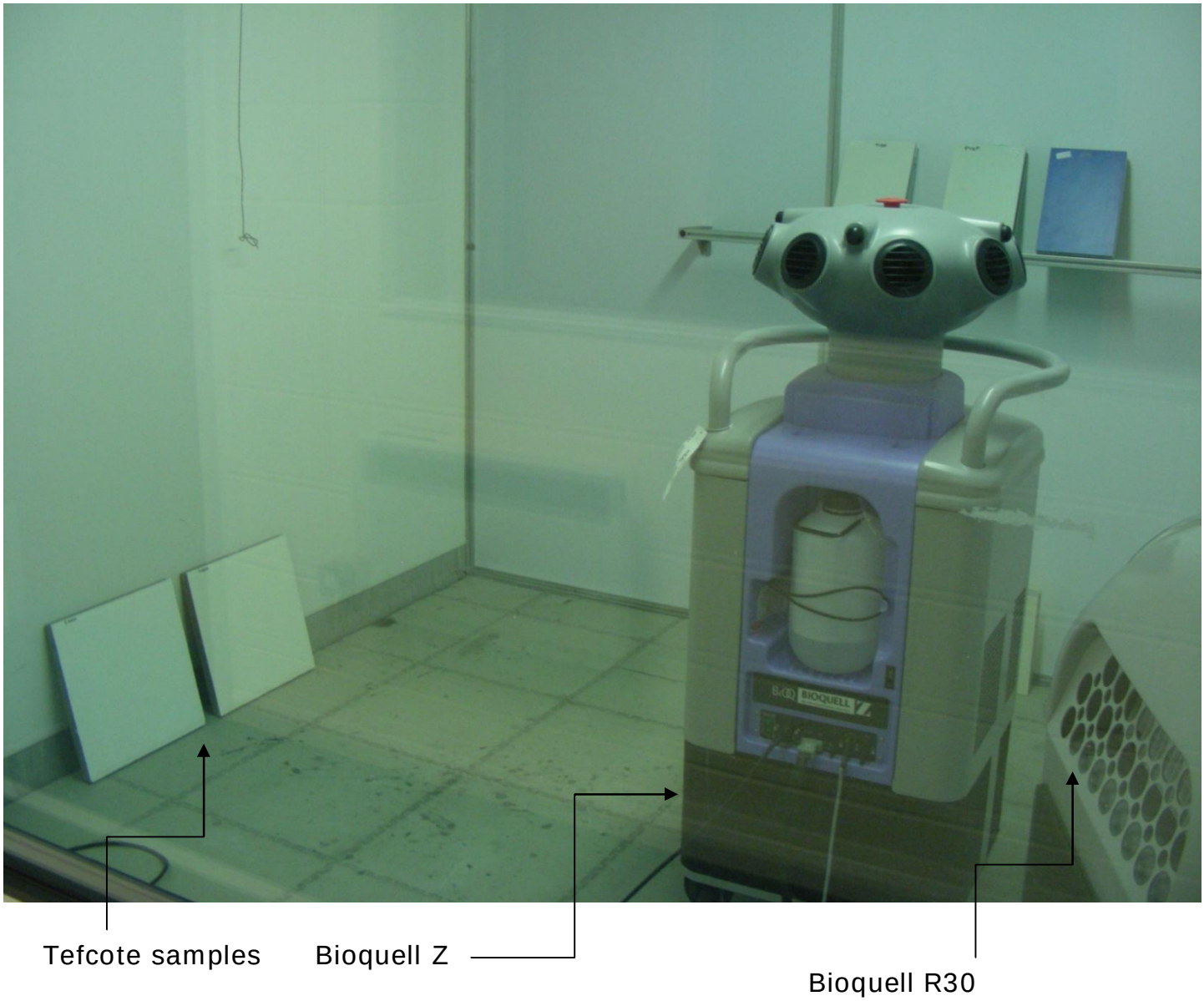
A timed gassing cycle was run; the room was then returned to an ambient temperature of 20 to 25ºC before each cycle. Photographs were taken of each sample at the start, after 9 cycles and at the end. A total number of 40 cycles was run.

It has been found by Bioquell that 40 cycles at 14gm/3 will determine with a high degree of confidence that a product is not susceptible to deterioration from HPV.

The cycles were run with the following parameters in accordance with TD041-SOP-001;

- Conditioning: 5 minutes
- Gassing: 13 minutes at 20g/min injection
- Dwell 25 minutes at 5g/min injection
- Aeration: End when the test room is between 10 and 0ppm H_2O_2
- Total Dose: 385g (14.2g/m^3)
- 35% Bioquell (Lot no: DBC500022314289) Hydrogen Peroxide was used

Layout;

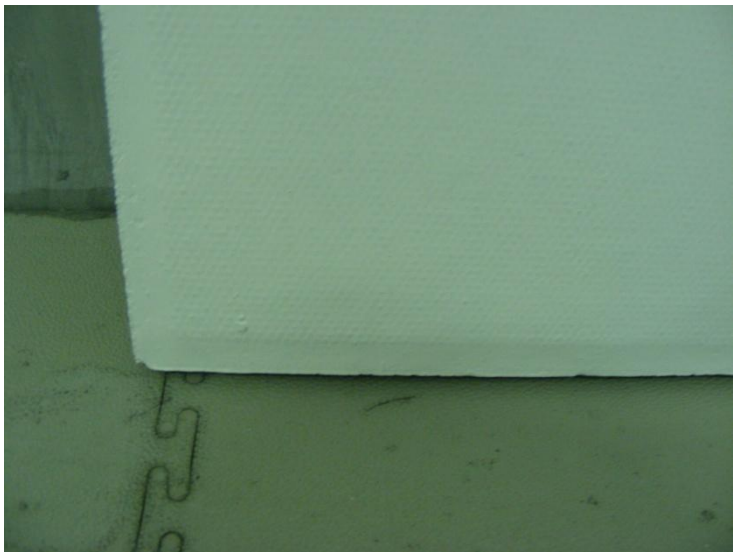


The samples were leant against a wall of the test room, approximately 1.8 meters from the gassing nozzles of the BIOQUELL Z. An R30 Aeration unit was situated in the corner of the test room away from the gassing line to reduce aeration time.

Results;

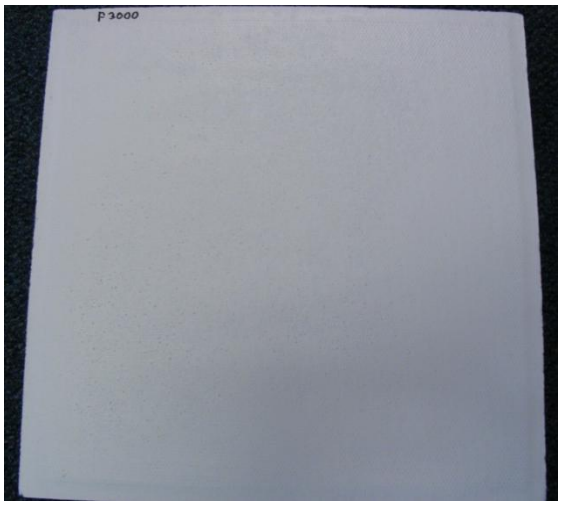
The samples were photographed three times pre-test, after 9 cycles and post test (40 cycles). The three photographs are shown for each sample.

Start Photos



After 9 cycles

At End



Conclusion;

The Tefcote 3000 coating had deteriorated badly by the 9th cycle. The fact that the sample had not been allowed to cure for the required period stated by the manufacturer may have contributed to the damage.

The Tefcote 4000 did not show any signs of deterioration.

Note that the coatings were applied to concrete and that other substrates may cause different behaviour.