



Report M7027-05c

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Date of report: 17th August 2005
Number of pages: 5
Appendices: none
Date of order: 7th July 2005
Receipt of samples: 9th July 2005
Start of investigation: 2th July 2005

Objects of Investigation: "Bioni Perform", "reference paint"

Assignment: To test a facade paint an a reference paint
for a resistance to the formation of algae
according to guidelines VdL07.

Storage: The sample materials were destroyed.
Remaining materials will be stored for 6
weeks after delivery of report.

1 Assignment

To test the facade paint Bioni Perform and a reference paint according to the guidelines VdL-RL 07 "Guidelines on the Resistance of Coating Materials to the Formation of Algae".

2 Investigation and Results

Sample Material

The samples consisted of two sets, consisting of 5 samples each, approximately 45 mm x 45 mm x 2 mm in size. The sets of samples were marked "Bioni facade paint with nano active component" and "reference facade paint". The samples were sprinkled with tap water for 3 days (1L/min.) and then dried for a further three days.

Test Organisms

The algae *scenedesmus vacuolatus* and *stichococcus bacillaris* were selected as test organisms as recommended in VdL-RL 07.

Length and Conditions of Investigation

After the samples were placed into the test fixtures as per the guidelines and after they were inoculated with the mixture of algae at room temperature they were subjected to 16 hours of light alternating with 8 hours of darkness. The light sources used were fluorescent tubes (F18W/33). The test itself was started on 19th July 2005.

Evaluation

A visual evaluation of all of the samples was undertaken after 7, 14 and 21 days (please see table 2). If the mark "0" was given after an incubation period of 21 days, the surface was then also inspected microscopically (at a magnification of 50).

Table2

Results of Investigation of the Materials after 7, 14 and 21 Days. The values given are the averages of 5 samples tested in parallel (values in brackets).

	7 days	14 days	21 days
"Bioni Perform"	0 (0,0,0,0,0)	0 (0,0,0,0,1)	0 (0,0,0,1,1)
"reference paint"	1 (1,1,1,1,1)	2 (2,2,2,2,2)	2 (2,2,2,2,3)

0 = Sample surface exhibits no fouling

1 = Up to 25% fouling of the sample surface

2 = Up to 50% fouling of the sample surface

3 = Up to 75% fouling of the sample surface

4 = Over 75% fouling of the sample surface

6 = Bacteria invasion

3 Evaluation and Summary

According to guidelines VdL-RL 07 and the results obtained, the **facade paint “Bioni Perform”** can be certified as **exhibiting good algaeicide efficacy**.

The “reference paint” tested could not be judged as exhibiting good resistance to the formation of algae.

Overall, no inhibitions to the growth of algae were observed in the immediate vicinity of the samples, which is an indication that no algaeicide agents were emitted from the surrounding media.

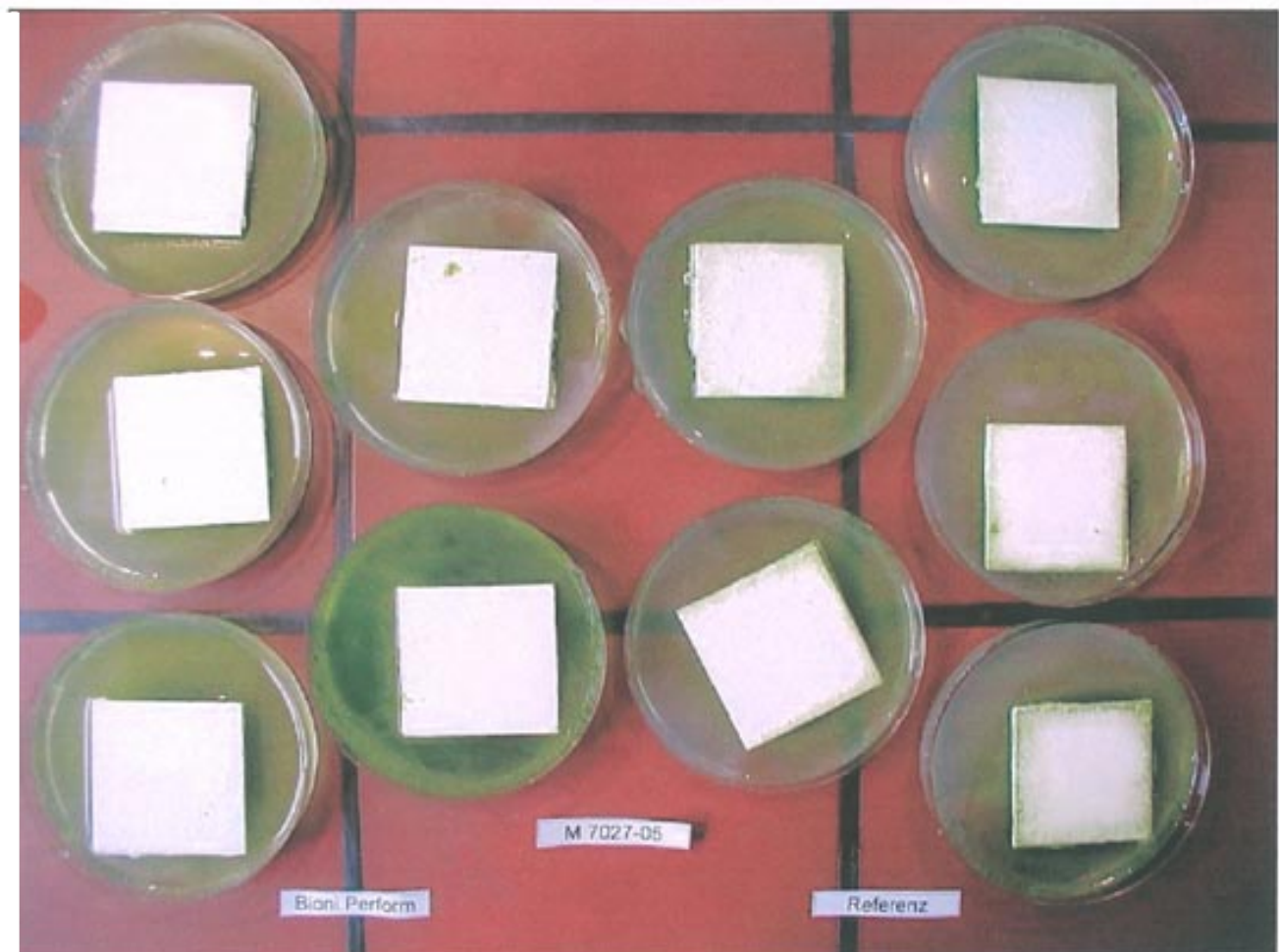
AMTLICHE MATERIALPRÜFUNGSANSTALT BREMEN (Official Materials Test Institution Bremen)


Dr. rer. nat. Jan Küver
(Abteilungsleiter Mikrobiologie)

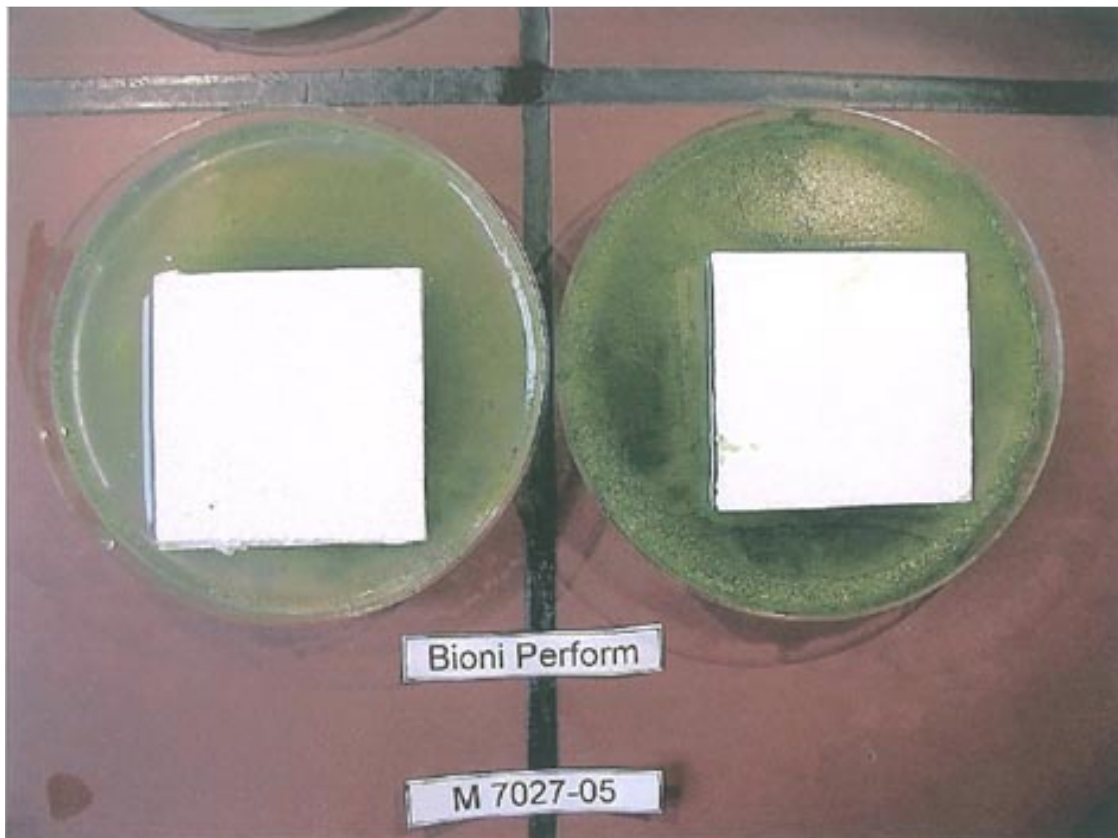



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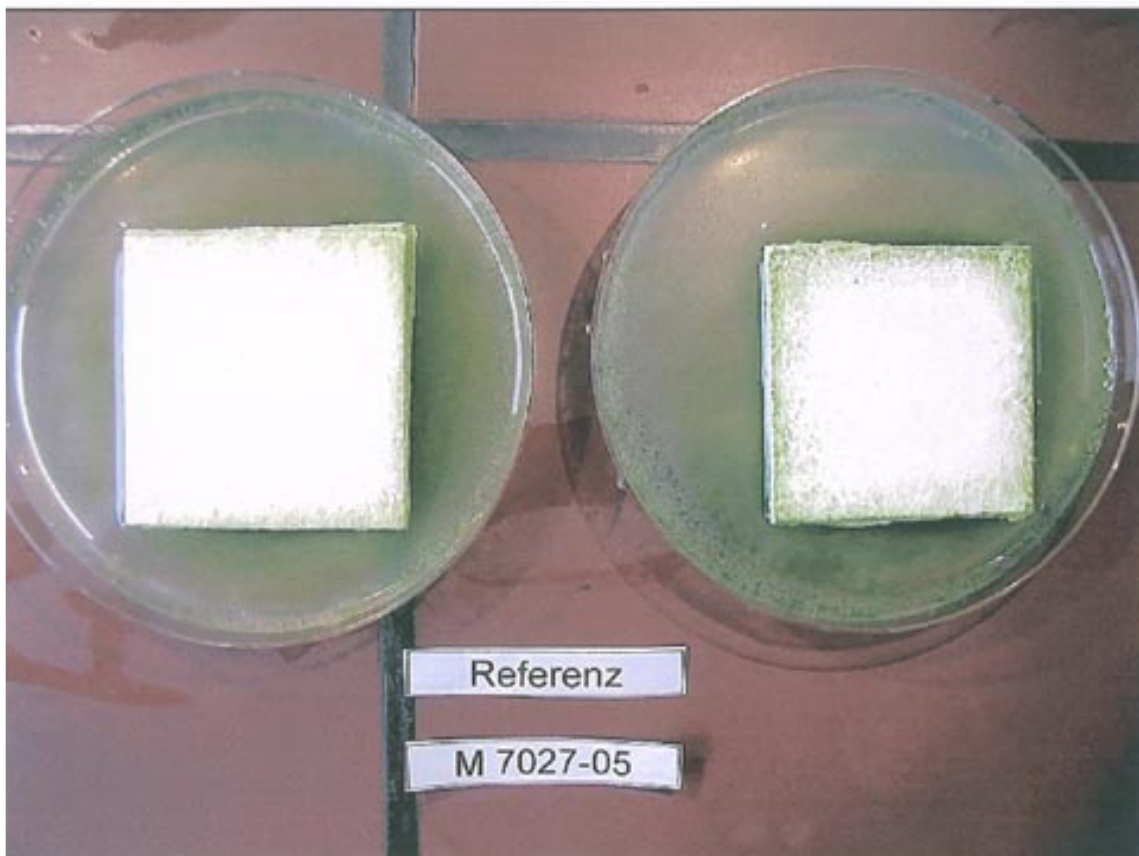
Appendix Photographic Documentation



An overview of the samples after 21 days: on the left "Bioni Perform", on the right the "reference paint"



The result after 21 days: on the left the sample evaluated as "0"; on the right the "worse" sample evaluated as "1".



The result after 21 days: on the left the sample evaluated as "the best" reference sample; on the right the "worse" sample, evaluated as "3".