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REPORT N° 13/020/AT/PRT-2

Date : 9th April 2013

Subject : Testing the fungi resistance according to the
**NFX 41520 – Test B Standard – without and with ageing for 1 white
paint (3A Mate Paint)**

Determination of the fungistatic effect of the not aged and aged paint

Order : of 11th February 2013 (*Aurélie GUEUGNON*)

Number of pages : 6

Certified sincere and real

Dominique CORGER
Responsible of the Microbiology Laboratory
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I – SUMMARY OF THE STUDY

Study of the fungicide protection for 1 white paint.

Exposure of the paint samples, without ageing and after accelerated ageing, to a mixed inoculum of different fungi.

Visual evaluation, after 4 weeks, of the possible development of fungi.

II – PAINT

The tested paint is ready to use.

Reference : **Celliose 21-012-0501 / 3A Mate Paint (P2)**
Batch 4036741N°1 (02/2013)

III – PROGRESS OF THE STUDY

Preparation of the paint samples for the test : application of the paint the 14th February 2013 on glass fibers textile substrates

Application of 1 coat of paint

Drying 1 week at room temperature

6 samples of paint

3 samples are not aged + 3 samples are aged

Ageing Cycle : Beginning on 23rd February 2013
End on 7th March 2013

Progress of the testing :

The paint samples, not aged and aged, are placed in Petri dishes

(1 paint sample per Petri dish) containing the nourishing agar environment for fungi.

3 Petri dishes are done with the not aged paint samples.

3 Petri dishes are done with the aged paint samples.

We proceed then to the sowing of the paint samples with the inoculum, consisted of the fungi spores suspension, prepared on 18th February 2013 (1ml of spores suspension on the agar + 1 ml of spores suspension on the paint sample, for each Petri dish).

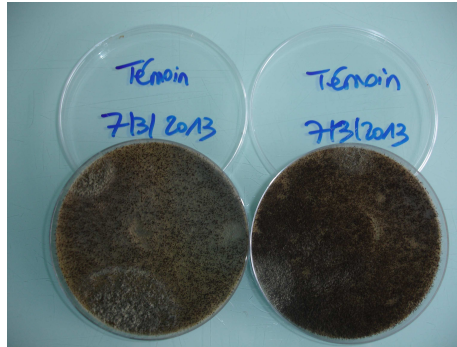
The Petri dishes are then placed in a regulated climatic chamber, with a relative humidity of 95 % \pm 1% and a temperature of 30 °C \pm 1°C.

Beginning of the test : the 8th March 2013

Duration : 28 days

End of the test : the 5th April 2013

Moreover, as it's essential to control, for the testing conditions, the microbiological activity of the fungi stumps used and the atmospheric conditions, **a viability witness is done to control the good development of the spores suspension used** (2 Petri dishes filled with nourishing agar + 1ml of the spores suspension prepared the 18th February 2013).



At the end of the test, we proceed to the visual evaluation of the samples.

IV - RESULTS

1 - Evaluation of the results

Visual estimation of the fungi development on each paint sample tested.

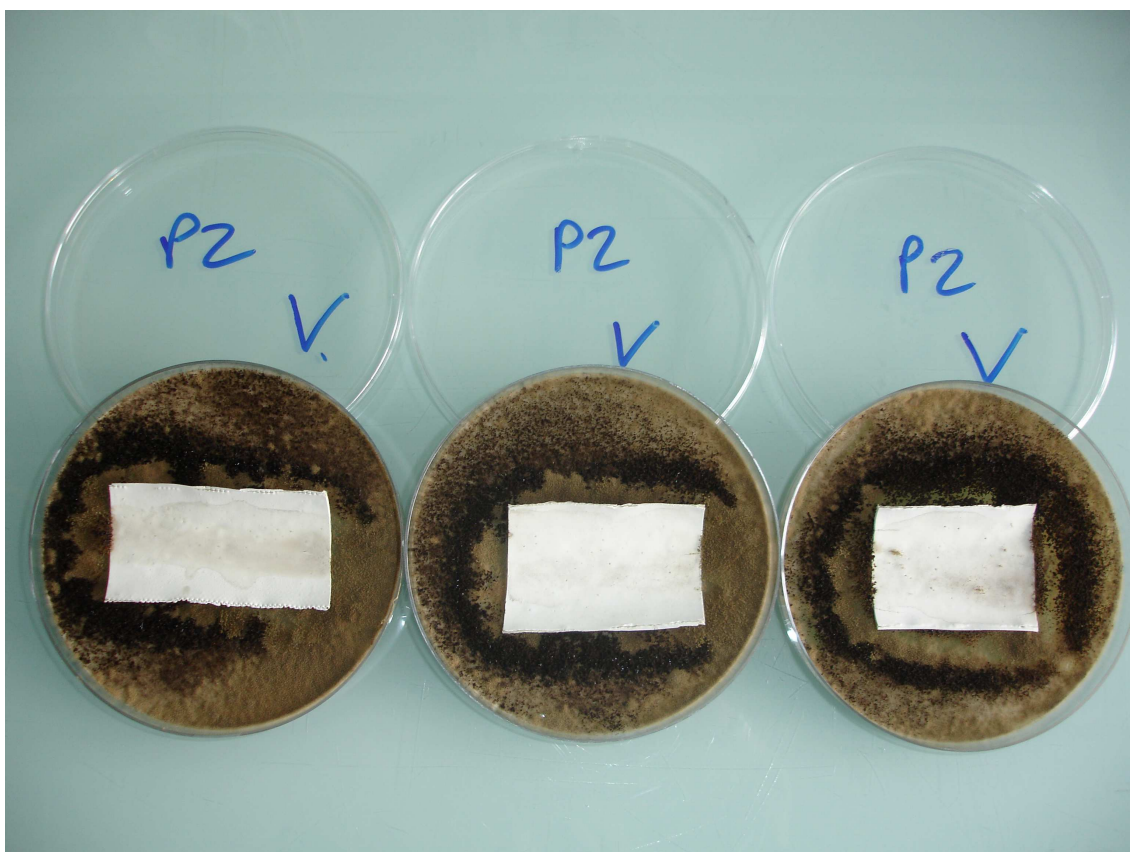
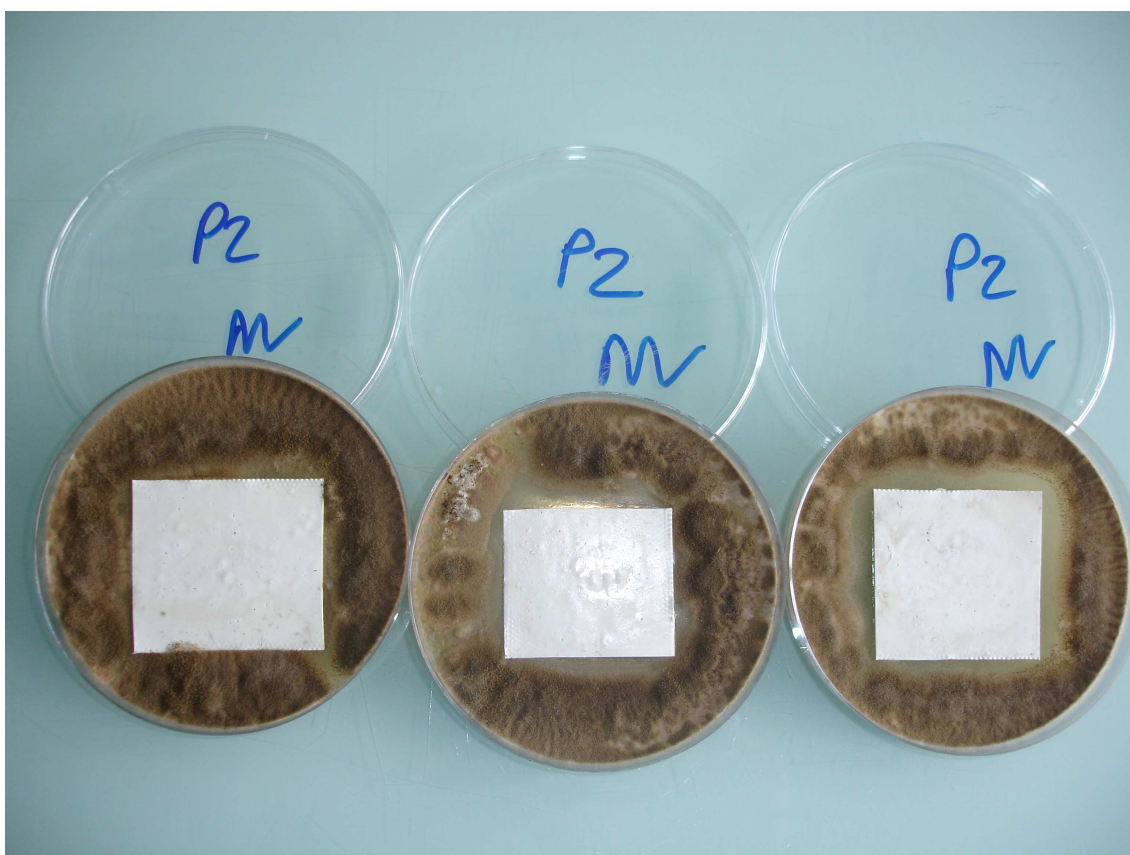
The quotation is done with the reference table here after :

- 0 = no fungi development visible with the eye
- 1 = very low development (dispersed colonies)
- 2 = low development, covering less than 25 % of the sample surface
- 3 = medium development, covering between 25 to 50 % of the sample surface
- 4 = important development, covering more than 50 % of the sample surface
- 5 = very important development, covering 100 % of the sample surface

2- Results

PAINT P2	NOT AGED		AGED	
	Quotation	Inhibition Area	Quotation	Inhibition Area
21-012-0501 3A Mate	0-1	Yes	0-1	No

Pictures of the paint samples at the end of the test



V - CONCLUSION

The Paint P2 / 21-012-0501 / 3A Mate has a very satisfying fungistatic effect, for the not aged film, as for the aged film, with an inhibition area for the not aged film, which doesn't exist any more for the aged film.

APPENDIX

Testing Conditions

Fungi stumps used (mixing) :

- 1 - Alternaria alternata
- 2 - Trichoderma viride
- 3 - Cladosporium herbarum
- 4 - Aureobasidium pullulans
- 5 - Chaetomium globosum
- 6 - Aspergillus niger
- 7 - Penicillium funiculosum
- 8 - Paecilomyces varotii
- 9 - Stachybotrys atra

Accelerated Ageing of the samples

Successive Cycles : Dry Heating - Water - UV

- **Dry Heating** : Oven at 50°C during 48 hours

- **Water** : Temperature : 23°C \pm 1°C
Duration : 7 days continuously
Water Spraying

- **Drying** : At room temperature during 24 hours

- **UV** : 48 hours