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RESEARCH LABORATORY TEST REPORT

Report No RLR.3

Date 8 September 1998

Instigator P Lerche Esq
Tefcote Surface Systems

Subject **EFFECT OF FORMALDEHYDE CONTACT WITH TEFCOTE TOPCOAT P3000HRX**

P Lerche Esq
Tefcote Surface Systems

1. Introduction

1.1 One 20cm x 14cm hardboard panel coated on 16 July 1998 with white Tefcote P300 HR was received at our laboratories on 25 August 1998. An assessment of its resistance to contact by 20% formaldehyde solution was requested. The panel was assigned our reference C.8651/3.

2. Test methods

2.1 The 60° gloss level of the coating was measured using an Erichsen Miniglossmeter, pre-calibrated against a standard 29.6° gloss surface.

2.2 Four circular areas of approximately 64mm diameter were delineated on the panel. Circular dykes of Vallance Shower, Bath & Kitchen Sealant (approximately 6mm diameter) were constructed on the circumferences, and when these were just touch dry the enclosed areas were filled with formaldehyde solution (GPR ex BDH) at 20% w/w. 10mm deep cylindrical aluminium dishes were then rested on the sealant dykes to create sealed cells.

2.3 Owing to the hazard associated with the use of formaldehyde, the tests were conducted on the laboratory roof. The aluminium dishes were removed after 4½, 10½, 25 and 48 hours' formaldehyde solution contact time. The temperature ranges for each duration are given below:

4½ hours	12 - 16°C
10½ hours	10 - 16°C
25 hours	6 - 16°C
48 hours	6 - 16°C

The formaldehyde solution and the dykes were removed and the 60° gloss of the coating at the contact area was measured at once, at seven locations. Gloss changes were also assessed visually.

48 hours after the last test had ended, the panel was rinsed under cold mains water, dried, and the 60° gloss levels re-measured. A visual re-assessment was also made. The results are given in Section 3 below.

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3. Results

3.1 60° gloss - Initial (as received)

	Range	Mean
Panel C.8651/3	53.4 - 59.7	57.0

3.2 60° gloss - After formaldehyde contact and recovery

Formaldehyde solution contact time, hr	Immediately after test	After recovery
0	57.0	57.0
4½	48.0	52.3
10½	42.4	48.8
25	44.4	*
48	46.7	*

*test area developed a ridge, preventing reliable results being obtained

3.3 Visual gloss assessments

No changes in gloss level were detected when test areas were viewed in the horizontal plane at a glancing angle, from a distance of about 60cm.

4. Discussion

4.1 Similar effects were observed to those found with the Tefcote 4000, and similar comments apply to those given in Section 4 of our report reference RLR.2.

CJ Chatfield

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pp The Chatfield Applied Research Laboratories Ltd

UKAS accreditation applies only to the test results quoted herein, and all interpretations and opinions arising therefrom are strictly those of the author of this report