



Distributed in the Interest
of Product Development

VANDERBILT

Laboratory Report

PAINT LAB REPORT No. 3764-3

TITLE: **PYRAX[®] B**, Pyrophyllite, in Texture Paint

INTRODUCTION: **PYRAX B** was compared to Mineralite[®] 3X (mica) in a series of interior latex texture paints. The **PYRAX B** paint was noticeably brighter and had better peak retention than the Mineralite 3X paint. A 50/50 blend of **PYRAX B** and Mineralite 3X yielded the best mud crack resistance.

DISCUSSION and RESULTS: A series of texture paints was prepared containing **PYRAX B**, Mineralite 3X (mica) and blends of the two. The mud crack resistance, peak retention, dry brightness and color were compared. The PVC and loading of platy mineral in these paints are quite high. Because the density of the two platy mineral fillers was different (**PYRAX B** density is 23.4 lbs/gal and Mineralite 3X density is 22.8 lbs/gal), the substitutions were made on a volume basis. The blends of **PYRAX B** and Mineralite 3X were as follows:

	<u>PYRAX B</u>	<u>Mineralite 3X</u>
061406 A	23.2 gal	0.0 gal
061406 B	17.4 gal	5.8 gal
061406 C	11.6 gal	11.6 gal
061406 D	5.8 gal	17.4 gal
061406 E	0.0 gal	23.2 gal

The formulas as run are given in the attached table.

Dry brightness, L a b color and Brookfield[®] viscosity were measured. The results are given in the attached table. Paint 061406 A (**PYRAX B** alone) was noticeably brighter than the paints containing Mineralite 3X. The viscosity decreased as the quantity of **PYRAX B** decreased and the quantity of Mineralite 3X increased. This resulted in the paints containing higher levels of Mineralite 3X being rather soupy. They spread well but did not form good peaks.

Peak retention and mud crack resistance were tested. All of the paints had good flow under the trowel, but paints 061406 D and E were quite soupy. Paint 061406 A showed the best peak retention. As the amount of **PYRAX B** decreased and the amount of Mineralite 3X increased, the peak retention got noticeably poorer, to the extent that in paint 061406 E, there was no peak retention at all. The best overall mud crack resistance was in paint 061406 C which contained a 50/50 blend of the two platy mineral fillers. The following observations were made regarding the mud crack resistance and peak retention.

R.T. Vanderbilt Company, Inc., 30 Winfield Street, P.O. Box 5150, Norwalk, CT 06856-5150
Telephone: (203) 853-1400 - Fax: (203) 853-1452 - Web Site: www.rtvanderbilt.com

Before using, read, understand and comply with the information and precautions in the Material Safety Data Sheets, label and other product literature. The information presented herein, while not guaranteed, was prepared by technical personnel and, to the best of our knowledge and belief, is true and accurate as of the date hereof. No warranty, representation or guarantee, express or implied, is made regarding accuracy, performance, stability, reliability or use. This information is not intended to be all-inclusive, because the manner and conditions of use, handling, storage and other factors may involve other or additional safety or performance considerations. The user is responsible for determining the suitability of any material for a specific purpose and for adopting such safety precautions as may be required. R.T. Vanderbilt Company, Inc. does not warrant the results to be obtained in using any material, and disclaims all liability with respect to the use, handling or further processing of any such material. No suggestion for use is intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patent, trademark or copyright or to violate any federal, state or local law or regulation.

- Formula 061406 A** Good flow under the trowel, formed very good, sharp peaks. A few medium sized cracks in the smoothed area. Dried peaks were very sharp. Several small cracks in peaked area. Best dry color.
- Formula 061406 B** Very nice flow under the trowel, formed good, sharp peaks. 1 medium sized crack in smoothed area. Dried peaks were not as sharp as 061406 A. A few small cracks in peaked area.
- Formula 061406 C** Very nice flow under the trowel did not form good, sharp peaks. No cracks in smoothed area. Dried peaks were not sharp. A few small cracks in peaked area.
- Formula 061406 D** Soupy, nice flow under trowel did not form good, sharp peaks. 1 small crack in peaked area. Dried peaks very poor. A few small cracks in peaked area.
- Formula 061406 E** Very soupy, nice flow under trowel did not form good, sharp peaks. 1 large crack in smoothed area. Dried peaks collapsed. A few small cracks in peaked area. Noticeably darker color than 061406 A.

EXPERIMENTAL: The interior latex texture paints were prepared according to the formulas given in Table 1. The paints were allowed to stand over night at 75° F, 50% RH prior to further testing. Brookfield® viscosity was measured at 10, 20 50 and 100 rpm. Drawdowns were made at 12 mil clearance onto plain white cards. After air drying at 75° F, 50% RH, the G. E. Brightness and L a b color were measured.

The mud crack resistance and peak retention were measured as follows: The texture paints were applied in a thick layer to primed wallboard. One section was smoothed with a trowel. The other section was peaked with the trowel. After air drying at ambient conditions, the paints were examined for mud cracking and peak retention.

CONCLUSION: This study showed that **PYRAX® B** is better than Mineralite® 3X (mica) for peak retention of interior latex texture paint. The dry film color of the **PYRAX B** paint was significantly brighter than the Mineralite 3X paint. A 50/50 blend of **PYRAX B** and Mineralite 3X gave the best mud crack resistance.

Formula 061406
Texture Paint
DARVAN® 811¹, Dispersing Agent, **VANZAN®¹** Xantham Gum,
VANSIL® WG¹, Wollastonite

	<u>Pounds</u>	<u>Gallons</u>
DISPERSION		
Water	445.0	53.4
DARVAN 811¹	10.0	0.9
Triton® CF-10 ²	2.5	0.3
Drewplus® L 475 ³	4.0	0.5
Mineral Filler	535.0	23.2
<i>Preblend the next two items and add:</i>		
Ti-Pure® R 931 ⁴	61.5	2.1
VANZAN¹	10.0	1.5
<i>Mix at medium speed for 10 minutes. Reduce speed for let down.</i>		

LET DOWN

VANSIL WG¹	95.0	3.9
Airflex® 400 Latex ⁵	125.0	14.1
<i>Mix at slow speed for 5 minutes.</i>		

PAINT PROPERTIES

Weight per gallon		12.9
% Solids	by weight	60.7
	by volume	39.1
PVC		74.7
Pigment to binder ratio		7.71:1
Calculated VOC		0
	g/l	0

	<u>061406 A</u>	<u>061406 B</u>	<u>061406 C</u>	<u>061496 D</u>	<u>061406 E</u>
Brookfield Viscosity					
10 rpm	105 K	94K	84 K	79 K	70 K
20 rpm	62 K	53 K	49 K	45 K	40 K
50 rpm	32 K	27 K	24 K	22 K	20 K
100 rpm	20 K	16 K	14 K	13 K	12 K
Dry Film Brightness and color					
GE. Brightness	82.4	80.0	77.8	75.3	73.8
L	92.3	91.5	90.7	89.7	89.1
a	-0.1	0.0	0.0	0.1	0.2
b	2.5	3.2	3.9	4.4	4.9
ΔE		1.07	2.13	3.23	4.01

RAW MATERIAL SUPPLIERS

¹R.T. Vanderbilt Company, Inc., Norwalk, CT

²Dow Chemical Company, Midland, MI

³Ashland Chemical Company, Covington, KY

⁴E.I. du Pont de Nemours & Company, Wilmington, DE

⁵Air Products and Chemicals, Inc., Allentown, PA

Trademark Information

DARVAN, PYRAX, VANSIL and **VANZAN** are registered trademarks of R.T. Vanderbilt Company, Inc.

Airflex is a registered trademark of Air Products and Chemicals, Inc.

Brookfield is a registered trademark of Brookfield Engineering Laboratories, Inc.

Drewplus is a registered trademark of Ashland Licensing and Intellectual Property, LLC.

Mineralite is a registered trademark of Mineral Mining Corp.

Ti-Pure is a registered trademark of E.I. du Pont de Nemours & Company.

Triton is a registered trademark of Union Carbide Chemicals & Plastics Technology Corporation.

rev 03/11

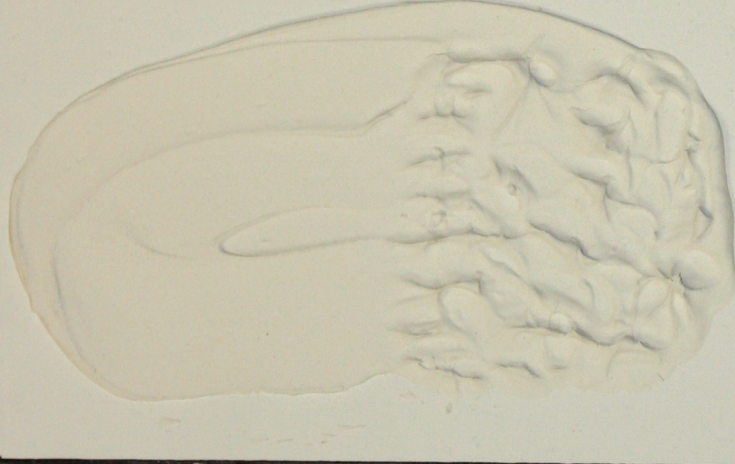
Formula 061406A



Formula 061406B



Formula 061406C



Formula 061406D



Formula 061406E

