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Cross Reference:

English Mica Co.
Extenders - Mica
House Paint

Philadelphia Laboratory
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MEMORANDUM REPORT NO. M-216

WATER GROUND MICA IN HOUSE PAINT

This is to record the initial properties of house paint made with a sample of 325 mesh white water ground mica obtained from the English Mica Company, Stamford, Conn. The code of the sample is DSI8928.

The advantage claimed for mica in house paint is greater resistance to cracking and longer life. The paints described in this report have been placed on exposure in Series #9998. No action is contemplated until results are obtained from the exposure tests.

Samples of mica from two other suppliers have been exposed previously in house paint: (1) Mineralite, a dry ground grade; (2) Aratone, a wet ground grade. They are a little more durable than magnesium silicate. The flakes are so large that they make the film glitter after it has weathered; they have not been used in house paint white or tints for this reason.

Summary:

According to the recommendations of the supplier, mica has been used at 10% by weight of the total pigment in three compositions:

- (1) 501-867 Lead-free Atlanta White
- (2) 301-838 Lead-free Cream House Paint
- (3) 374-817 House Primer

In the Primer the mica has also been tested as the entire extender portion.

In general, mica lowers the solids content and the gloss of the paints, increases the "slip" of the paint under the brush and has somewhat poorer color than our present extenders. The improvement in durability would have to be large to offset the disadvantage of low gloss.

Solids Content:

In the White and Cream topcoats 10% of mica lowers the volume solids about 5%. This is not necessarily a disadvantage if the durability is satisfactory at the lower solids content.

In the Primer, 10% of mica has no effect on solids content. This product is already heavily bodied by aluminum stearate, so that the additional bodying action of a small amount of mica is negligible. However, when mica is used as the sole extender, the solids by volume are lowered from 60 to 50%.

Gloss:

In the White and Cream topcoats, the gloss is lowered from high to medium. This results in slight flashing. Since we have put much effort into the elimination of flashing in our house paint, the effect of mica would be a serious draw-back to its use.

Since the primer is flat, mica has no effect on its appearance. The uniformity and hold-out of the primer are equally good with and without mica.

None of the topcoats or primer showed a micaceous glitter in the fresh film. However, this appearance may develop on weathering, and the exposure series will be reviewed critically for appearance.

Color:

In the white, the color with 10% mica is very slightly worse than the control. The difference is not large enough to rule out consideration of this pigment.

In the primer, the color with 10% mica is perceptibly grayer, and the color where mica is used as the sole extender is very poor. However, since the color of the primer is less important than that of the topcoat, small amounts of mica could undoubtedly be tolerated.

Brushing:

In this particular test, 10% of mica improved the brushing of the white topcoat. The white control showed a definite drag, and the increased "slip" of the paint containing mica constituted a definite advantage. However, the control was not characteristic of the brushing of 301-367. It is probable that 10% of mica would be acceptable for brushing but would not ordinarily produce a worthwhile advantage.

In the primer, 10% of mica has no effect on the brushing. When mica is the sole extender, the product has excessive slip and the brushing is unsatisfactory.

Notebook Reference:

Notebook 5075, pages 58-74.

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