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NEWARK PLANT
PIGMENT COLOR RESEARCH REPORT

Final Report

LINOLEUM EVALUATIONS OF PIGMENT BX-CR

Period Covered: JANUARY 31 to FEBRUARY 14, 1945

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Title: LINOLEUM EVALUATIONS OF PIGMENT BX-CR

Period Covered: JANUARY 31 to FEBRUARY 14, 1945

SUBMITTED BY: A. J. Stratton 2/15/45 DATE SUBMITTED: 2-14-45

APPROVED BY: A. A. Brizzolara 2/15/45 DATE ISSUED: 2-15-45

INTRODUCTION

A comprehensive comparison of Pigment BX-CR and BP-237-D has been carried out in linoleum for the purpose of determining money value and comparative properties at various levels of pigmentation and when shaded with red to approximate Congoleum's Marine Blue Pattern #1125.

SUMMARY & CONCLUSIONS

Consideration of the compositions of Pigment BX-CR (20% CPC, 75% TiO_2 and 5% unknown) and BP-237-D (20% CPC, 75% Whiting and 5% moisture) together with the fact that Phthalocyanine pigments are substantially always used in linoleum in conjunction with more or less prime white (usually TiO_2) lead to the conclusion that valid comparisons should be based on compositions containing equivalent amounts of prime white and equal pigmentations. Thus, in every case reported hereafter it was assumed that 75% of the Pigment BX-CR used was TiO_2 and due allowance was made for this. Equal pigmentation was maintained by adding Whiting to balance any variation in total prime pigments (colored and white) used.

Most of the comparisons were carried out with Pigment BX-CR - Lot 3 micronized but untreated (1051-32A). This sample was selected as most nearly representative of probable manufacture in the future. Subsequent tests were made on Lot 3 crude (pulverized only), a poorly micronized sample of lot 3 and a treated, micronized sample (mix of lots 2 & 4) which contains only 18% of CPC. The differences were exactly in line with the known conditions of manufacture but were all of relatively small degree so that conclusions based on 1051-32A seem entirely valid.

In general, it may be said that, under the conditions defined above, 70 parts of Pigment BX-CR will approximate the strength of 100 parts of BP-237-D but will be noticeably greener and duller. As noted above, these colors have equivalent toner content. A very small amount (1% to 3%) of RM-545-D will compensate for the greenness but the dullness remains. In properties (lightfastness, soap fastness, etc.) the two colors are equivalent and excellent.

In a very strong tint (Masstone Masterbatch + 3% TiO_2) Pigment BX-CR shows a money value of approximately $1.34 vs. BP-237-D at 84¢. In a weaker tint (12-15% TiO_2) the money value is approximately $1.17. In an approximate match for Marine Blue (25-35% RM-545-D) the value is $1.29. Thus the value is somewhat less in weaker tints and greater as the color approaches a full shade. However, if one fails to compensate for the TiO_2 in the Pigment BX-CR, it suffers a penalty in money value so that it has little, if any, more than equal value with BP-237-D.

It may be concluded with complete assurance that under any reasonable conditions of use Pigment BX-CR will have money value at least equal to BP-237-D and when formulated with allowance for its

content of TiO_2 will have values varying from 40% to 60% greater than BP-237-D.

Finally it should be stated that neither BP-237-D nor Pigment BX-CR disperses easily in linoleum composition. Considerably more severe milling conditions are required than for many linoleum colors to obtain satisfactory dispersion. However, Pigment BX-CR is no worse than BP-237-D and, at times, seems to be slightly superior.

EXPERIMENTAL DETAILS

See Notebook #1140
Experiments 9, 10, 11, 12, 15, 17