



BS 3483 : Part B5 : March 1974

[Ease of dispersion]

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British Standard Methods for testing pigments for paints

Part B5. Comparison of ease of dispersion (oscillatory shaking method)

Confirmed

AUG 1985

This part should be read in conjunction with the General Introduction to BS 3483 issued separately.

NOTE. This part of BS 3483 is technically identical with Part . . . * of ISO/R 787, General methods of test for pigments.

1. Scope

1.1 Part B5 of this British Standard describes a general method of test for comparing the ease of dispersion of a pigment with that of a similar reference pigment in a specified medium, the result being expressed in terms of the time of shaking in a specified apparatus required to obtain a stated fineness-of-grind.

1.2 This method is most likely to be indicative of the comparative results which will be obtained when the pigments being compared are ground in a resin solution in certain types of mills, for example in a ball mill.

NOTE. When this general method is applicable to a given pigment, only a cross-reference to it should be included in the British Standard relating to that pigment, with a note of any detailed modification which may be needed in view of the special properties of the pigment in question. Only when this general method is not applicable to a particular pigment should a special method for ease of dispersion be specified.

2. Principle

2.1 The principle of this method is that the sample under test and the reference sample are each milled with the chosen medium under known conditions on the paint conditioning machine (or similar equipment) at the same time, and the degree of dispersion of each sample is measured on a fineness-of-grind gauge at known time intervals during the dispersion process. From these results, graphs are constructed and the times for each pigment to reach a stated fineness-of-grind are taken as indicative of the comparative ease of dispersion.

2.2 The progress of dispersion is influenced by a number of factors and, although it is realized that other media or test conditions may be used for control purposes in laboratories or by agreement between the parties for the purpose of a reference method the following have been standardized:

- (1) Capacity and dimensions of container.
- (2) Nature and volume of grinding material.
- (3) Volume of mill base, i.e. pigment plus dispersing medium.
- (4) Nature of dispersing medium.
- (5) Period of milling.

2.3 Any of these factors may be modified in special cases by agreement between the parties. The remaining important factor is the concentration of pigment in the mill base, which should be chosen in relation to the medium requirement of the pigment (this is not necessarily in proportion to its oil absorption). All pigments can be allocated to one of three groups:

- (1) Pigments of low medium requirement; average milling concentration 65 % of pigment by mass.
- (2) Pigments of intermediate medium requirement; average milling concentration 40 % of pigment by mass.
- (3) Pigments of high medium requirement; average milling concentration 20 % of pigment by mass.

* At present in draft form.

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