

International Standard**787/22**

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General methods of test for pigments and extenders — Part 22 : Comparison of resistance to bleeding of pigments

*Méthodes générales d'essai des pigments et matières de charge —
Partie 22 : Comparaison de la résistance au saignement des pigments*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 787/22 was developed by Technical Committee ISO/TC 35, *Paints and varnishes*, and was circulated to the member bodies in March 1978.

It has been approved by the member bodies of the following countries :

Australia	Ireland	Romania
Austria	Israel	South Africa, Rep. of
Bulgaria	Italy	Sweden
Canada	Kenya	Switzerland
Egypt, Arab Rep. of	Korea, Rep. of	Turkey
France	Netherlands	United Kingdom
Germany, F. R.	New Zealand	Yugoslavia
India	Norway	
Iran	Poland	

No member body expressed disapproval of the document.

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The purpose of this International Standard is to establish a series of general test methods for pigments and extenders which are suitable for all or many of the individual pigments and extenders for which specifications might be required. In such cases, a cross-reference to the general method should be included in the International Standard relating to that pigment or extender, with a note of any detailed modifications which might be needed in view of the special properties of the product in question.

Technical Committee ISO/TC 35 decided that all the general methods should be published as they become available, as parts of a single International Standard, in order to emphasize the relationship of each to the whole series.

The Technical Committee also decided that, where two or more procedures were widely used for determining the same or a similar characteristic of a pigment or extender, there would be no objection to including more than one of them in the ISO series. In such cases it will, however, be essential to state clearly in a specification which method is to be used and, in the test report, which method has been used.

Parts of the series already published are as follows :

- Part 1 : Comparison of colour
- Part 2 : Determination of matter volatile at 105 °C
- Part 3 : Determination of matter soluble in water — Hot extraction method
- Part 4 : Determination of acidity or alkalinity of the aqueous extract
- Part 5 : Determination of oil absorption value
- Part 6 : Determination of residue on sieve — Oil method
- Part 7 : Determination of residue on sieve — Water method
- Part 8 : Determination of matter soluble in water — Cold extraction method
- Part 9 : Determination of pH value of an aqueous suspension
- Part 10 : Determination of density — Pyknometer method
- Part 11 : Determination of tamped volume and apparent density after tamping
- Part 12 : Visual comparison of hue of powdered white pigment (Hollow cone method)¹⁾
- Part 13 : Determination of water-soluble sulphates, chlorides and nitrates
- Part 14 : Determination of resistivity of aqueous extract
- Part 15 : Comparison of resistance of coloured pigments of similar types to light from a specified light source
- Part 16 : Comparison of relative tinting strength (or equivalent colouring value) and colour on reduction in linseed stand oil using the automatic muller
- Part 17 : Comparison of lightening power of white pigments
- Part 18 : Determination of residue on sieve by a mechanical flushing procedure
- Part 19 : Determination of water-soluble nitrates — Salicylic acid method
- Part 20 : Comparison of ease of dispersion — Oscillatory shaking method
- Part 21 : Comparison of heat stability of pigments using a stoving medium
- Part 22 : Comparison of resistance to bleeding of pigments
- Part 23 : Determination of density (using a centrifuge to remove entrained air)

¹⁾ This part will be withdrawn as the specified method is no longer in use.



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General methods of test for pigments and extenders — Part 22 : Comparison of resistance to bleeding of pigments

0 Introduction

This document is a part of ISO 787, *General methods of test for pigments and extenders*.

Although a number of methods for determining resistance to bleeding are available, for example solubility in a solvent, the method in this part has been established because it is essentially a practical test and as such is probably of greater general value than other methods.

1 Scope and field of application

This part of ISO 787 specifies a general method for comparing the resistance to bleeding of a pigment with that of an agreed sample.

NOTE — When this general method is applicable to a given pigment, only a cross-reference to it should be included in the International 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 comparison of resistance to bleeding be specified.

2 References

ISO 842, *Raw materials for paints and varnishes — Sampling*.

ISO 3668, *Paints and varnishes — Visual comparison of the colour of paints*.

3 Definition

bleeding : The discoloration or staining of a newly applied paint film due to migration of colour from the pigment contained in the coating over which the paint film is applied. The discoloration may occur immediately on application of the paint film or at any stage during the drying of the paint film.

4 Materials

4.1 Panels

Any suitable light-gauge metal panels, for example of bright tinplate or aluminium, conveniently 150 mm × 100 mm, the surfaces of which have been cleaned and lightly abraded, or other suitable panels as agreed between the interested parties.

4.2 Silicon carbide paper, grade 600.

4.3 Black and white charts, as used for hiding-power determinations.

4.4 Agreed medium, which may be suitable either for drying at ambient temperature or for stoving for a specified time at a specified temperature, as agreed between the interested parties.

4.5 White overcoating composition, to be agreed between the interested parties.

5 Sampling

Take a representative sample of the pigment to be tested as described in ISO 842.

6 Procedure

Prepare a dispersion of the pigment under test in the agreed medium by a suitable method to be agreed between the interested parties, including dilution of the dispersion to an appropriate consistency by further addition of the agreed medium or solvent.

Prepare a dispersion of the agreed sample in the same manner in the same medium.

Apply the dispersion of the pigment under test by an agreed method over two-thirds of the length of a test panel, to give a wet film thickness of 75 to 120 μm , and so that one end of the panel is left uncoated. Allow the film to dry as specified or subject it to the specified stoving conditions as appropriate.

Prepare a test panel using the dispersion of the agreed sample in the same manner.

If previously agreed between the interested parties, the coated area of the panel may be lightly abraded with the silicon carbide paper before the next stage of application. To a part of the uncoated area attach a piece of black and white chart.

Apply the white overcoating composition over two-thirds of the length of the panel so as to leave one end coated only with the dispersion of the pigment under test, the centre one-third coated with both pigment dispersion and overcoating, and the other end and the black and white chart with only the over-

coating. The overcoating shall be applied thickly enough to cover the black and white pattern of the chart.

Allow the film to dry at ambient temperature or subject it to the specified stoving conditions as appropriate.

Immediately after the overcoating film is dry, compare, in diffuse daylight, by the procedure described in ISO 3668, the degree of bleeding, as shown by the difference in colour between the areas of the panels coated with white composition only and with the white composition over the pigment dispersion of the test sample, with the degree of bleeding of the agreed sample, and note whether it is equal to, greater than, or less than that of the agreed sample. If daylight is not available, make the comparison in artificial daylight.

Repeat the comparison after 24 h.

NOTE — If required and agreed, the degree of bleeding may be assessed by using a suitable colorimeter.

7 Test report

The test report shall include at least the following information :

- a) the type and identification of the pigment under test;
- b) a reference to this International Standard (ISO 787/22);
- c) the details of items agreed between the interested parties, including pigment concentration, reference pigment used, medium used, method of application, curing conditions of the test film and type of overcoating;
- d) any deviation, by agreement or otherwise, from the test procedure specified;
- e) whether the comparison was made in natural or artificial daylight;
- f) the result of the test : bleeding less than, equal to, or greater than that of the agreed sample of pigment;
- g) the date of the test.