
Specification for
Zinc dust pigment

[ISO title : Zinc dust pigment for paints]

Spécification pour les pigments de poudre du zinc

Spezifikation für Zinkstaubpigmente

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National foreword

This first revision of this British Standard has been prepared under the direction of the Pigments, Paints and Varnishes Standards Committee. BS 3982 was first published in 1966 in response to a request for a zinc dust pigment suitable for use in protective coatings. This revision is identical with ISO 3549 'Zinc dust pigments for paints', which was published in 1976 by the International Organization for Standardization (ISO).

Terminology and conventions. The text of the international standard has been approved as suitable for publication, without deviation, as a British Standard. Some terminology and certain conventions are not identical with those used in British Standards; attention is especially drawn to the following.

The comma has been used throughout as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'British Standard'.

Cross-references

International standard	Corresponding British Standard
ISO 713-1975	BS 3630 Methods for the sampling and analysis of zinc and zinc alloys Part 7 : 1967 Lead in zinc (Grades Zn 3 and Zn 4) (polarographic method) (Technically equivalent)
ISO 714-1975	Part 5 : 1963 Iron in ingot zinc and zinc alloys (photometric method) (Technically equivalent)
ISO 787/Part XVIII-1973	BS 3483 Methods for testing pigments for paints Part B4 : 1974 Determination of residue on sieve (water method using a mechanical flushing procedure) (Technically equivalent)
ISO 842-1974	BS 4726 : 1971 Methods for sampling raw materials for paints and varnishes (Technically equivalent)
ISO 2590-1973	BS 4404 : 1968 Method for the determination of arsenic (silver diethyldithiocarbamate procedure) (Technically equivalent)

Additional information. Water complying with the requirements of the methods of test is specified in BS 3978 'Water for laboratory use'.

British Standard Specification for Zinc dust pigment

0 INTRODUCTION

This International Standard deals with zinc dust pigment for use in protective coatings. The material complying with this International Standard is quite suitable for the usual types of zinc paint but it does not necessarily cover the requirements of industries other than the paint industry. The possibility of including a requirement for particle size has been carefully considered, and it has been decided to include a clause that particle size distribution limits may be specified but both the method and limits should be agreed between the interested parties. With regard to the analytical methods given in this International Standard, more up-to-date methods such as atomic absorption methods are currently being developed by Technical Committee ISO/TC 18, *Zinc and zinc alloys*, and Technical Committee ISO/TC 35; when these are finalized, they may be included in any future revision. Meanwhile, such methods may be used by agreement between the interested parties.

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies requirements for zinc dust pigment manufactured by a distillation process, suitable for use in protective coatings. It does not cover zinc pigments of other physical form such as zinc flake, as this would make the document unduly complex.

2 REFERENCES

ISO 713, *Zinc – Determination of lead and cadmium contents – Polarographic method.*

ISO 714, *Zinc – Determination of iron content – Photometric method.*

ISO 787/XVIII, *General methods of test for pigments – Part XVIII: Determination of residue on sieve by a mechanical flushing procedure.*

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

ISO 2590, *General method for the determination of arsenic – Silver diethyldithiocarbamate photometric method.*

3 REQUIRED CHARACTERISTICS AND THEIR TOLERANCES

Zinc dust pigment for paints shall have the characteristics shown in table 1.

4 RESIDUE ON SIEVE AND PARTICLE SIZE [OPTIONAL]

The material shall meet the sieve residue requirements shown in table 2 when examined by the method described in ISO 787/XVIII, or other methods as agreed between the interested parties. A 50 g test portion should be used for the test.

If required, mean particle size or the particle size distribution may be specified but both the limits and the method shall be agreed between the interested parties.

TABLE 1 – Composition of zinc dust pigment

Characteristic	Requirement % (m/m)	Test method
Total zinc content expressed as zinc (Zn)	98 min.	Clause 6
Metallic zinc content (Zn)	94 min.	Clause 7 or 8; the particular method to be agreed between the interested parties
Lead (Pb)	0,2 max.	ISO 713 and clause 9 ¹⁾
Cadmium (Cd)	0,2 max.	ISO 713 and clause 9 ¹⁾
Iron (Fe)	0,2 max.	ISO 714 and clause 10 ¹⁾
Arsenic (As)	0,000 4 (4 mg/kg) max.	ISO 2590 and clause 11
Matter insoluble in acid	0,2 max.	Clause 12

1) or other suitable methods such as atomic absorption methods, as agreed between the interested parties.

NOTE – If the zinc oxide content is required, this should be calculated from the difference between the total zinc content and the metallic zinc content.

TABLE 2 – Residue on sieve requirements

Nominal size of sieve aperture μm	Residue on sieve % max.
125	0
90	0,1
45	3,0

NOTE – For certain uses, zinc dust is required with lower residues on the 90 and 45 μm sieves than those shown in table 2. In these cases the residue on sieve limits should be agreed between the interested parties.

5 SAMPLING

A representative sample of the material shall be taken in accordance with ISO 842.

NOTE – It is pointed out that the sample should on no account be dried before testing and any portion of the sample not used should not be returned to the sample container.