

Transformed

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

**ISO RECOMMENDATION
R 1247**

ALUMINIUM PIGMENTS

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 1247, *Aluminium pigments*, was drawn up by Technical Committee ISO/TC 35, *Paints and varnishes*, the Secretariat of which is held by the Nederlands Normalisatie-instituut (NNI).

Work on this question led to the adoption of Draft ISO Recommendation No. 1247, which was circulated to all the ISO Member Bodies for enquiry in October 1968. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Austria	Israel	Spain
Brazil	Italy	Sweden
Chile	Netherlands	Switzerland
Denmark	New Zealand	Turkey
Germany	Peru	U.A.R.
Greece	Poland	United Kingdom
India	Portugal	U.S.S.R.
Iran	South Africa, Rep. of	

The following Member Body opposed the approval of the Draft :

France

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

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ALUMINIUM PIGMENTS

1. SCOPE

This ISO Recommendation specifies the requirements and the corresponding methods of test for aluminium pigments used in paints including

- (a) general purpose, decorative and protective paints, and
- (b) speciality finishing paints.

2. DESCRIPTION

The material should be composed essentially of finely divided aluminium metal. The particles of aluminium metal should be lamellar in shape as examined microscopically. The material should be in the form of a powder or a homogeneous paste.

NOTE. – Mica and other adulterants should be absent. If when carrying out the solution of the sample in hydrochloric acid as described in clause 14.1.3.3 a non-fatty residue is obtained, the residue should be examined.

3. CLASSIFICATION

3.1 Types

This ISO Recommendation covers four types of aluminium pigments, as follows :

- Type 1** : Aluminium powder, leafing
- Type 2** : Aluminium paste, leafing
- Type 3** : Aluminium powder, non-leafing
- Type 4** : Aluminium paste, non-leafing

3.2 Classes

Pigments of Types 1 and 2 are further classified by their water-covering capacity as shown in Table 1.

TABLE 1 – Classes of Types 1 and 2

Type	Class	Water-covering capacity
		m ² /g
1	a	up to 0.8
	b	over 0.8 up to 1.5
	c	over 1.5 up to 2.2
	d	over 2.2
2	p	up to 1.7
	q	over 1.7 up to 2.4
	r	over 2.4

NOTE. – Attention is drawn to the reproducibility limits given in clause 10.9.

4. REQUIRED CHARACTERISTICS AND THEIR TOLERANCES

The material should have the characteristics given in the appropriate column of Table 2.

The liquid contained in paste pigment should be category A mineral solvent complying with ISO Recommendation R 1250, *Mineral solvents for paints (white spirits and related hydrocarbon solvents)*, or other appropriate liquid as may be agreed between purchaser and vendor.

TABLE 2 - Required characteristics and their tolerances

Characteristic	Requirements according to Type				Test method
	Type 1 Leafing powder	Type 2 Leafing paste	Type 3 Non-leafing powder	Type 4 Non-leafing paste	
Matter volatile at 105 °C % max.	1.0	35.0*	1.0	35.0*	ISO/R 787** Part II
Matter soluble in organic solvents % max.	6.0	4.0	1.5	6.0	clause 7.1 (Types 1 and 2) clause 7.2 (Types 3 and 4)
Appearance of paint prepared in an agreed vehicle	To match closely the appearance of paint prepared similarly from an agreed sample				section 8
Residue on sieve***	Nil on 250 µm	Nil on 180 µm	Nil on 250 µm	Nil on 180 µm	section 9
Water-covering capacity, m ² /g	Within the limits for the agreed class (see clause 3.2)			-	section 10
Leafing power	65 % min.	65 % min.	Nil	Nil	section 11 (Types 1 and 2) section 12 (Types 3 and 4)
Water content % max.	0.2	0.15	0.2	0.15	section 13
Metallic impurities, % max. on dry pigment	1.0 for Cu + Fe + Pb + Si + Zn 0.03 for Pb Separate limits for metals other than lead may be agreed between purchaser and vendor		Limits to be agreed between purchaser and vendor		section 14

* Alternative limits for volatile content of pastes may be agreed between purchaser and vendor.

** ISO Recommendation R 787, *General methods of test for pigments*.

*** Additional limits for residue on sieves of smaller aperture may be agreed between purchaser and vendor.

5. PACKING

The material should be packed in air-tight containers.

6. SAMPLING

6.1 For the purpose of testing a pigment in accordance with this ISO Recommendation, a sample representative of the bulk material should be taken by the appropriate procedure described in ISO Recommendation R 842, *Sampling raw materials for paints and varnishes*. The sample should have a mass of not less than 250 g and should be packed in the manner described in ISO Recommendation R 842.

For both pastes and powders a sampling tube should be used which enables the whole depth (and, preferably, the longest diagonal) of the container to be sampled. For powders, which may be compacted, a sharply pointed sampling tube should be used, and the container should be rolled vigorously before sampling.

Suitable designs of sampling tubes are illustrated in Figure 1.

6.2 Except where otherwise agreed between purchaser and vendor, the agreed sample referred to in Table 2 and section 8 should comply in all respects with the requirements of this ISO Recommendation. The sample should have a mass of not less than 250 g and should be packed in the manner described in ISO Recommendation R 842.