BRITISH STANDARD

BS EN ISO
3262-21:2000

Incorporating
Corrigendum No. 1

Extenders for paints — Specifications and methods of test —

Part 21: Silica sand (unground natural quartz)

The European Standard EN ISO 3262-21:2000 has the status of a British Standard

ICS 87.060.10

National foreword

This British Standard is the official English language version of EN ISO 3262-21:2000. It is identical with ISO 3262-21:2000. Together with the other parts of BS EN ISO 3262, it will supersede BS 1795:1976 which is declared obsolescent.

The UK participation in its preparation was entrusted to Technical Committee STI/1, Pigments and extenders, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

Attention is drawn to the fact that CEN and CENELEC Standards normally include an annex which lists normative references to international publications with their corresponding European publications. The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled "International Standards Correspondence Index", or by using the "Find" facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN ISO title page, the EN ISO foreword page, the ISO title page, pages ii to iv, pages 1 to 4, the annex ZA page and a back cover.

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Amendments issued since publication

Amd. No.	Date	Comments
11075 Corrigendum No. 1	September 2000	Addition of annex ZA page

This British Standard, having been prepared under the direction of the Sector Committee for Materials and Chemicals, was published under the authority of the Standards Committee and comes into effect on 15 August 2000

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 3262-21

April 2000

ICS 87.060.10

English version

Extenders for paints - Specifications and methods of test - Part 21: Silica sand (unground natural quartz) (ISO 3262:2000)

Matières de charge pour peintures - Spécifications et méthodes d'essai - Partie 21: Sable de silice (quartz naturel non broyé (ISO 3262-21:2000)

Füllstoffe für Beschichtungsstoffe - Anforderungen und Prüfverfahren - Teil 21: Quarzsand (ungemahlener natürlicher Quarz) (ISO 3262-21:2000)

This European Standard was approved by CEN on 15 April 2000.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN ISO 3262-21:2000 E

Foreword

The text of the International Standard ISO 3262-21:2000 has been prepared by Technical Committee ISO/TC 35 "Paints and varnishes" in collaboration with Technical Committee CEN/TC 298 "Pigments and extenders", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2000, and conflicting national standards shall be withdrawn at the latest by October 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 3262-21:2000 has been approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standards are listed in annex ZA (normative).

EN ISO 3262-21:2000

INTERNATIONAL STANDARD

ISO 3262-21

First edition
2000-04-15

Extenders for paints — Specifications and methods of test —

Part 21: Silica sand (unground natural quartz)

Matières de charge pour peintures — Spécifications et méthodes d'essai —

Partie 21: Sable de silice (quartz naturel non broyé)

Reference number
ISO 3262-21:2000(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 3262 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 3262-21 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 2, *Pigments and extenders*.

Together with the other parts (see below), this part of ISO 3262 cancels and replaces ISO 3262:1975, which has been technically revised. Part 1 comprises the definition of the term extender and a number of test methods that are applicable to most extenders, whilst part 2 and the following parts specify requirements and, where appropriate, particular test methods for individual extenders.

ISO 3262 consists of the following parts, under the general title *Extenders for paints — Specifications and methods of test*:

— *Part 1: Introduction and general test methods*

— *Part 2: Barytes (natural barium sulfate)*

— *Part 3: Blanc fixe*

— *Part 4: Whiting*

— *Part 5: Natural crystalline calcium carbonate*

— *Part 6: Precipitated calcium carbonate*

— *Part 7: Dolomite*

— *Part 8: Natural clay*

— *Part 9: Calcined clay*

— *Part 10: Natural talc/chlorite in lamellar form*

— *Part 11: Natural talc, in lamellar form, containing carbonates*

— *Part 12: Muscovite-type mica*

— *Part 13: Natural quartz (ground)*

— *Part 14: Cristobalite*

— *Part 15: Vitreous silica*

— *Part 16: Aluminium hydroxides*

— *Part 17: Precipitated calcium silicate*

— *Part 18: Precipitated sodium aluminium silicate*

— *Part 19: Precipitated silica*

— *Part 20: Fumed silica*

— *Part 21: Silica sand (unground natural quartz)*

— *Part 22: Flux-calcined kieselguhr*

Extenders for paints — Specifications and methods of test —

Part 21: Silica sand (unground natural quartz)

1 Scope

This part of ISO 3262 specifies requirements and corresponding methods of test for silica sand (unground natural quartz).

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 3262. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 3262 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 787-2:1981, *General methods of test for pigments and extenders — Part 2: Determination of matter volatile at 105 °C.*

ISO 787-3:—[1)], *General methods of test for pigments and extenders — Part 3: Determination of matter soluble in water — Hot extraction method.*

ISO 787-7:—[2)], *General methods of test for pigments and extenders — Part 7: Determination of residue on sieve — Water method — Manual procedure.*

ISO 787-9:1981, *General methods of test for pigments and extenders — Part 9: Determination of pH value of an aqueous suspension.*

ISO 787-14:1973, *General methods of test for pigments — Part 14: Determination of resistivity of aqueous extract.*

ISO 3262-1:1997, *Extenders for paints — Specifications and methods of test — Part 1: Introduction and general test methods*.

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods.*

ISO 3819:1985, *Laboratory glassware — Beakers.*

ISO 15528:—[3)], *Paints, varnishes and raw materials for paints and varnishes — Sampling.*

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1) To be published. (Revision of ISO 787-3:1979)

2) To be published. (Revision of ISO 787-7:1981)

3) To be published. (Revision of ISO 842:1984 and ISO 1512:1991)

3 Term and definition

For the purposes of this part of ISO 3262, the following term and definition apply:

3.1
silica sand
material consisting of unground natural quartz

4 Requirements and test methods

For silica sand complying with this part of ISO 3262, the essential requirements are specified in Table 1 and the conditional requirements are listed in Table 2.

Table 1 — Essential requirements

Characteristic	Unit	Requirement		Test method
		Grade A	Grade B	
Quartz content, min.	% (m/m)	99	80	X-ray diffraction
Silica content. min.		97	80	X-ray fluorescence or clause 6
Matter volatile at 105 °C, max.	% (m/m)	0,5		ISO 787-2
Loss on ignition, max.	% (m/m)	0,4	2,5	ISO 3262-1
pH value of aqueous suspension	—	6,5 to 8,5	7 to 9	ISO 787-9
Matter soluble in water, max.	% (m/m)	0,2	0,6	ISO 787-3

Table 2 — Conditional requirements

Characteristic	Unit	Requirement	Test method
Residue on sieve	% (m/m)	To be agreed between the interested parties	ISO 787-7
Colour	—		ISO 3262-1
Lightness	%		To be agreed between the interested parties[a]
Resistivity of aqueous extract	Ω·m		ISO 787-14
[a] Test method in preparation.			

5 Sampling

Take a representative sample of the product to be tested, as described in ISO 15528.

6 Determination of silica content

6.1 Principle

A test portion is ignited, weighed and treated with sulfuric acid and hydrofluoric acid. The silicon tetrafluoride thus formed is evaporated off and the silica content is calculated from the resulting loss in mass.

As the silica content is very high, a previous separation from the impurities is not required.

6.2 Reagents

Use only reagents of recognized analytical grade and only water of at least grade 3 purity as defined in ISO 3696.

6.2.1 Sulfuric acid, diluted 1 + 1.

Add 1 part by volume of concentrated sulfuric acid, approximately 96 % (m/m), $\rho \approx 1{,}84$ g/ml, slowly to 1 part by volume of water.

6.2.2 Hydrofluoric acid, concentrated, approximately 40 % (m/m), $\rho \approx 1{,}13$ g/ml.

6.3 Apparatus

Use ordinary laboratory apparatus and glassware, together with the following:

6.3.1 Platinum dish.

6.3.2 Muffle furnace, capable of being maintained at (1 000 ± 20) °C.

6.3.3 Hotplate.

6.3.4 Desiccator, containing phosphorus pentoxide as desiccant.

6.4 Procedure

6.4.1 Number of determinations

Carry out the determination in duplicate.

6.4.2 Test portion

Weigh, to the nearest 1 mg, approximately 2 g (m_0) of the sample (see clause 5), previously dried at 105 °C in accordance with ISO 787-2, into the tared platinum dish (6.3.1).

6.4.3 Determination

Ignite the test portion to constant mass in the muffle furnace (6.3.2) at (1 000 ± 20) °C (this should take approximately 2 h) and allow to cool in the desiccator (6.3.4). Weigh the test portion again (m_1).

Add approximately 1 ml of sulfuric acid (6.2.1). Heat the platinum dish gently until fuming ceases and then continue heating at 900 °C for 15 min in the muffle furnace. Remove from the furnace, allow to cool in the dessiccator and weigh (m_2).

Add to the residue in the platinum dish 15 ml of hydrofluoric acid (6.2.2) and 1 ml of sulfuric acid (6.1.1) and evaporate to a syrup, taking care to avoid loss by spitting. Allow to cool and wash the sides down with small quantities of water. Then add a further 10 ml of hydrofluoric acid and evaporate to dryness.

Heat the residue on a hot-plate (6.3.3) until white fumes are no longer evolved, then ignite for 15 min in the muffle furnace at 900 °C. Remove from the furnace, allow to cool in the desiccator and weigh (m_3).

6.5 Expression of results

Calculate the silica content $w(SiO_2)$, expressed as a percentage by mass, using the equation

$$w(SiO_2) = \frac{(m_2 - m_3)}{m_1} \times 100$$

where

m_1 is the mass, in grams, of the ignited residue;

m_2 is the mass, in grams, after treatment with sulfuric acid and ignition.

m_3 is the mass, in grams, after treatment with hydrofluoric acid and ignition.

Calculate the mean of the two determinations and report the result to the nearest 0,1 %.

6.6 Precision

No precision data are currently available.

7 Test report

The test report shall contain at least the following information:

a) all details necessary to identify the product tested;

b) a reference to this part of ISO 3262 (ISO 3262-21);

c) the results of the tests and whether or not the product complies with the relevant specification limits;

d) any deviation from the test methods specified;

e) the dates of the tests.

Annex ZA (normative)
Normative references to international publications with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

Publication	Year	Title	EN	Year
ISO 787-2	1981	General methods of test for pigments and extenders - Part 2: Determination of matter volatile at 105 degrees C	EN ISO 787-2	1995
SO 787-3	1979	General methods of test for pigments and extenders - Part 3: Determination of matter soluble in water - Hot extraction method	EN ISO 787-3	1995
ISO 787-9	1981	General methods of test for pigments and extenders - Part 9: Determination of pH value of aqueous suspension	EN ISO 787-9	1995
ISO 3262-1	1997	Extenders for paints - Specifications and methods of test - Part 1:Introduction and general test methods	EN ISO 3262-1	1998
ISO 3696	1987	Water for analytical laboratory use - Specification and test methods	EN ISO 3696	1995

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