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ISO 11126-7

Second edition
2018-08

Preparation of steel substrates before application of paints and related products — Specifications for non-metallic blast-cleaning abrasives —

Part 7: Fused aluminium oxide

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Préparation des subjectiles d'acier avant application de peintures et de produits assimilés — Spécifications pour abrasifs non métalliques destinés à la préparation par projection —

Partie 7: Oxyde d'aluminium fondu

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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This document was prepared by Technical Committee ISO/TC 35 *Paints and varnishes,* Subcommittee SC 12 *Preparation of steel substrates before application of paints and related products.*

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This second edition cancels and replaces the first edition (ISO 11126-7:1995), which has been technically revised. It also incorporates Technical Corrigendum ISO 11126-7:1995/Cor 1:1999.

The main changes compared to the previous edition are as follows:

— Tables 1 and 2 and Annex A have been technically revised.

— Annex B has been added.

A list of all parts in the ISO 11126 series can be found on the ISO website.

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Preparation of steel substrates before application of paints and related products — Specifications for non-metallic blast-cleaning abrasives —

Part 7:
Fused aluminium oxide

WARNING — Equipment, materials and abrasives used for surface preparation can be hazardous. It is important to ensure that adequate instructions are given and that all required precautions are exercised

1 Scope

This document specifies requirements for fused aluminium oxide abrasives, as supplied for blast-cleaning processes. It specifies ranges of particle sizes and values for apparent density, bulk density, Mohs hardness, moisture content, conductivity of aqueous extract and water-soluble chlorides.

The requirements specified in this document apply to abrasives supplied in the "new" condition only. They do not apply to abrasives either during or after use.

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Test methods for non-metallic blast-cleaning abrasives are given in the various parts of ISO 11127.

NOTE 1 Information on commonly referenced national and international standards is given in Bibliography.

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NOTE 2 Although this document has been developed specifically to meet requirements for preparation of steelwork, the properties specified will generally be appropriate for use when preparing other material surfaces, or components, using blast-cleaning techniques. These techniques are described in ISO 8504-2.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 11127-1, *Preparation of steel substrates before application of paints and related products — Test methods for non-metallic blast-cleaning abrasives — Part 1: Sampling*

ISO 11127-2, *Preparation of steel substrates before application of paints and related products — Test methods for non-metallic blast-cleaning abrasives — Part 2: Determination of particle size distribution*

ISO 11127-3, *Preparation of steel substrates before application of paints and related products — Test methods for non-metallic blast-cleaning abrasives — Part 3: Determination of apparent density*

ISO 11127-4, *Preparation of steel substrates before application of paints and related products — Test methods for non-metallic blast-cleaning abrasives — Part 4: Assessment of hardness by a glass slide test*

ISO 11127-5, *Preparation of steel substrates before application of paints and related products — Test methods for non-metallic blast-cleaning abrasives — Part 5: Determination of moisture*

ISO 11127-6, *Preparation of steel substrates before application of paints and related products — Test methods for non-metallic blast-cleaning abrasives — Part 6: Determination of water-soluble contaminants by conductivity measurement*

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ISO 11127-7, *Preparation of steel substrates before application of paints and related products — Test methods for non-metallic blast-cleaning abrasives — Part 7: Determination of water-soluble chlorides*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
fused aluminium oxide
synthetic mineral blast-cleaning abrasive, which is classified as two types, A and WA

Note 1 to entry: Type A: This type is mainly composed of crystalline corundum which is brown in colour and consists of a solid solution containing a minimum of 94 % aluminium oxide and a maximum of 4 % titanium dioxide.

Note 2 to entry: Type A is produced by fusing bauxite with the appropriate quantity of titanium dioxide and reducing agent in an electric furnace, cooling to form lumps and then crushing and sieving to size.

Note 3 to entry: Type WA: This type consists of crystalline corundum which is whitish in colour and contains at least 99 % aluminium oxide. It is produced by fusing pure grade Bayer alumina in an electric arc furnace followed by a slow solidification process.

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4 Designation of abrasives

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Fused aluminium oxide abrasives shall be identified by "Abrasive ISO 11126" and the abbreviation N/FA-A or N/FA-WA indicating non-metallic, fused aluminium oxide abrasive type A or WA. This shall be followed, without spaces, by an oblique stroke and then the symbol G to indicate the required particle shape of the abrasive, when purchased, as grit.

The designation shall be completed by numbers denoting the particle size range, in millimetres, required (see Table 1).

Table 1 — Particle size distribution

Particle size range[a] mm			**0,045 to 0,180**	**0,125 to 0,300**	**0,212 to 0,500**	**0,300 to 0,710**	**0,355 to 0,850**	**0,500 to 1,18**	**0,850 to 2,00**	**1,18 to 2,80**
Oversize	Sieve size	mm	0,180	0,300	0,500	0,710	0,850	1,18	2,00	2,80
	Residue % (mass fraction)	max.	0	0	0	0	0	0	0	0
Nominal size	Sieve size	mm	0,045	0,125	0,212	0,300	0,355	0,500	0,850	1,18
	Residue % (mass fraction)	min.	97	97	97	97	97	97	97	97
Undersize	Sieve size	mm	0,045	0,125	0,212	0,300	0,355	0,500	0,850	1,18
	Through-flow % (mass fraction)	max.	3	3	3	3	3	3	3	3

[a] By agreement between the interested parties, abrasives of different particle size ranges may be mixed together. Details of proportions of nominal size, oversize and undersize shall be specified.

EXAMPLE

Abrasive ISO 11126 N/FA-A/G 0,85-2,00

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denotes a non-metallic abrasive of fused aluminium oxide, type A, complying with the requirements of this document, of initial particle shape grit and particle size range 0,85 mm to 2,00 mm.

NOTE Approximately equivalent codings for fused aluminium oxide abrasives referenced in other standards are given in Annex A.

This full product designation shall be quoted on all orders.

5 Sampling

Sampling procedures shall be as specified in ISO 11127-1.

6 Requirements

6.1 General requirements

Fused aluminium oxide abrasives shall absorb no water but can be wetted on the surface only.

Fused aluminium oxide used as an abrasive shall contain no free silica. All silica shall be chemically bound or present in glass form within the corundum crystal matrix.

The material shall be free from corrosive and adhesion-impairing contaminants.

6.2 Particular requirements

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Particular requirements for fused aluminium oxide abrasive shall be as specified in Table 2.

Table 2 — Particular requirements for fused aluminium oxide abrasives

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Property		Requirement	Test method
Particle size range and distribution		See Table 1	ISO 11127-2
Apparent density	kg/m^3	(3,9 to 4,0) × 10^3	ISO 11127-3
	(kg/dm^3)	(3,9 to 4,0)	
Mohs hardness		min. 6	ISO 11127-4
Moisture	% (mass fraction)	max. 0,2	ISO 11127-5
Conductivity of aqueous extract	µS/cm	max. 250	ISO 11127-6
Water-soluble chlorides	% (mass fraction)	max. 0,002 5	ISO 11127-7

7 Identification and marking

All materials shall be clearly marked or identified using the appropriate designation as specified in Clause 4, either directly or by the accompanying delivery note.

8 Information to be supplied by the manufacturer or supplier

The manufacturer or supplier shall supply, if requested, a test report detailing results for any relevant property as determined by the appropriate method specified in Table 2.

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Annex A
(informative)

Approximately equivalent codings for fused aluminium oxide abrasives

Commonly referenced ISO standards for fused alumina abrasives are based on different coding systems for particle size range or grade.

Approximately equivalent codings for fused aluminium oxide abrasives in one of these standards are shown in Table B.1 and the nearest equivalent codings in this document are shown alongside.

This list is purely informative and should not be taken as indicating that grades are equal. This document might may not contain all the codings listed.

Table B.1 — Approximately equivalent codings

	ISO 8486-1	ISO 11126-7
Grit	F12	1,18 to 2,80
	F14	
	F16	0,850 to 2,00
	F20	
	F22	
	F24	0,500 to 1,18
	F30	
	F36	0,355 to 0,850
	F40	0,300 to 0,710
	F46	
	F54	0,212 to 0,500
	F60	
	F70	
	F80	0,125 to 0,300
	F90	
	F100	
	F120	0,045 to 0,180

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[1] ISO 3310-1, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

[2] ISO 8486-1, *Bonded abrasives — Determination and of grain size distribution — Part 1: Macrogrits F4 to F220*

[3] ISO 8486-2, *Bonded abrasives — Determination and designation of grain size distribution — Part 2: Microgrits F230 to F2000*

[4] ISO 8504-2, *Preparation of steel substrates before application of paints and related products — Surface preparation methods — Part 2: Abrasive blast-cleaning*

[5] ISO 9284, *Abrasive grains — Test sieving machines*

[6] JIS R 6001:1987, *Abrasive grain sizes*

[7] JIS R 6002:1987, *Testing methods for abrasive grain size*

[8] JIS R 6003:1973, *Methods of sampling of abrasive grains*

[9] JIS R 6111:1987, *Artificial abrasives*

[10] JIS R 6123:1987, *Method for chemical analysis of aluminous abrasives*

[11] JIS R 6125:1976, *Testing method for specific gravity of artificial abrasives*

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