INTERNATIONAL STANDARD

ISO 11126-1

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

Part 1:
General introduction and classification

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 1: Introduction générale et classification

Reference number
ISO 11126-1:1993(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.

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.

International Standard ISO 11126-1 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.*

ISO 11126 consists of the following parts, under the general title *Preparation of steel substrates before application of paints and related products — Specifications for non-metallic blast-cleaning abrasives*:

— *Part 1: General introduction and classification*

— *Part 2: Silica sand*

— *Part 3: Copper refinery slag*

— *Part 4: Coal furnace slag*

— *Part 5: Nickel refinery slag*

— *Part 6: Iron furnace slag*

— *Part 7: Fused aluminium oxide*

— *Part 8: Olivine sand*

— *Part 9: Staurolite*

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INTERNATIONAL STANDARD ISO 11126-1:1993
TECHNICAL CORRIGENDUM 1

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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

Part 1:
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TECHNICAL CORRIGENDUM 1

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 1: Introduction générale et classification

RECTIFICATIF TECHNIQUE 1

Technical Corrigendum 1 to International Standard ISO 11126-1:1993 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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Replace the existing table 1 by the following.

ICS 87.020 **Ref. No. ISO 11126-1:1993/Cor.1:1997(E)**

Descriptors: paints, varnishes, substrates, steel products, blast-cleaning, abrasives, non-metallic abrasives, specifications, generalities.

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Table 1 — Commonly used non-metallic (N) blast-cleaning abrasives for steel substrate preparation

Type			Abbreviation	Initial particle shape (see 3.2)	Comparator [1]
Natural	Silica sand		N/SI	G	G
	Olivine sand		N/OL		
	Staurolite		N/ST	S	G
	Garnet		N/GA	G	G
Synthetic	Iron furnace slag	(Calcium silicate slags)	N/FE	G	G
	Copper refinery slag	(Ferrous silicate slags)	N/CU		
	Nickel refinery slag		N/NI		
	Coal furnace slag	(Aluminium silicate slags)	N/CS		
	Fused aluminium oxide		N/FA	G	G

1) Comparator to be used when assessing the resultant surface profile. The method for evaluating surface profile by comparator is described in ISO 8503-2 (see the introduction).

INTERNATIONAL STANDARD ISO 11126-1:1993
TECHNICAL CORRIGENDUM 2

Published 1997-05-15

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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

Part 1:
General introduction and classification

TECHNICAL CORRIGENDUM 2

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 1: Introduction générale et classification

RECTIFICATIF TECHNIQUE 2

Technical Corrigendum 2 to International Standard ISO 11126-1:1993 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*.

Page 2

In table 2, delete the note.

ICS 87.020 **Ref. No. ISO 11126-1:1993/Cor.2:1997(E)**

Descriptors: paints, varnishes, substrates, steel products, blast-cleaning, abrasives, non-metallic abrasives, specifications, generalities.

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— *Part 10: Garnet*

At the time of publication of this part of ISO 11126, parts 2, 7, 9 and 10 were in course of preparation.

Annex A of this part of ISO 11126 is for information only.

Introduction

This is one of a number of parts of ISO 11126 specifying requirements for non-metallic abrasives for blast-cleaning.

Test methods for non-metallic blast-cleaning abrasives are given in the various parts of ISO 11127 (see annex A).

The requirements for metallic abrasives commonly used for blast-cleaning are specified in the various parts of ISO 11124. Test methods to be used to define these requirements are contained in the various parts of ISO 11125 (see annex A).

Abrasive blast-cleaning techniques are widely used to clean and prepare surfaces. During work on development of a series of International Standards dealing with the preparation of steel substrates before application of paints and related products, it was decided that a need existed for a series of International Standards covering those blast-cleaning abrasives commonly used in preparation of steelwork.

The type of blast-cleaning abrasive used and its particle shape can significantly affect the surface appearance and profile form of the treated surface.

The informative supplement to ISO 8501-1[1] provides photographic examples of the change in appearance imparted to steel when blast-cleaned with different abrasive types.

ISO 8503-2[2] describes the assessment of the surface roughness of prepared surfaces using comparators. Table 1 of this part of ISO 11126 identifies the type of comparator to be used with each of the blast-cleaning abrasives considered.

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1) ISO 8501-1:1988/Suppl, *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness — Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings — Informative supplement to Part 1: Representative photographic examples of the change of appearance imparted to steel when blast-cleaned with different abrasives.* (To be published.)

2) ISO 8503-2:1988, *Preparation of steel substrates before application of paints and related products — Surface roughness characteristics of blast-cleaned steel substrates — Part 2: Method for the grading of surface profile of abrasive blast-cleaned steel — Comparator procedure.*

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

Part 1:
General introduction and classification

WARNING — Equipment, materials and abrasives used for surface preparation can be hazardous if used carelessly. Many national regulations exist for those materials and abrasives that are considered to be hazardous during or after use (waste management), such as free silica or carcinogenic or toxic substances. These regulations are therefore to be observed. It is important to ensure that adequate instructions are given and that all required precautions are exercised.

1 Scope

This part of ISO 11126 describes a classification of non-metalllic blast-cleaning abrasives for the preparation of steel substrates before application of paints and related products.

It specifies the characteristics which are required for the complete designation of such abrasives.

This part of ISO 11126 applies to abrasives supplied in the "new" or unused condition only. It does not apply to abrasives either during or after use.

NOTE 1 Although this part of ISO 11126 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 8504-2:1992, *Preparation of steel substrates before application of paints and related products — Surface preparation methods — Part 2: Abrasive blast-cleaning.*

2 Definitions

For the purposes of this part of ISO 11126, the following definitions apply.

2.1 blast-cleaning abrasive: A solid material intended to be used for abrasive blast-cleaning.

2.2 abrasive blast-cleaning: The impingement of a high-kinetic-energy stream of blast-cleaning abrasive on to the surface to be prepared.

2.3 shot: Particles that are predominantly round, that have a length of less than twice the maximum particle width and that do not have edges, broken faces or other sharp surface defects.

2.4 grit: Particles that are predominantly angular, that have fractured faces and sharp edges and that are less than half-round in shape.

3 Classification

3.1 Abrasive type

Blast-cleaning abrasives shall be classified according to material, origin or manufacture. Table 1 gives the abbreviated coding which shall be used to identify each of the types considered.

Table 1 — Commonly used non-metallic (N) blast-cleaning abrasives for steel substrate preparation

Type			Abbreviation	Initial particle shape (see 3.2)	Comparator[1]
Natural	Silica sand		N/SI	G	G
	Olivine sand		N/OL		
	Staurolite		N/ST	S/G	S
	Garnet		N/GA	G	G
Synthetic	Iron furnace slag	(Calcium silicate slags)	N/FE	G	G
	Copper refinery slag	(Ferrous silicate slags)	N/CU		
	Nickel refinery slag		N/NI		
	Coal furnace slag	(Aluminium silicate slags)	N/CS		
	Fused aluminium oxide		N/FA	G	G

1) Comparator to be used when assessing the resultant surface profile. The method for evaluating surface profile by comparator is described in ISO 8503-2 (see the introduction).

NOTE 2 The non-metallic blast-cleaning abrasives listed in table 1 are those commonly used for the preparation of steel substrates before application of paints and related products. The list is not intended to be exhaustive.

3.2 Initial particle shape

The particle shape characterizes the geometric form of the abrasive particles. Basic forms of non-metallic blast-cleaning abrasives are specified in table 2, together with the symbol which shall be used to describe each.

NOTE 3 As the particle shape of an abrasive may change during use, only the initial particle shape is given in the various parts of ISO 11126.

3.3 Particle size range

Non-metallic blast-cleaning abrasives consist of mixtures of differently sized particles. These shall be classified into size ranges.

Table 2 — Initial particle shape

Designation and initial particle shape	Symbol
Shot — round	S
Grit — angular, irregular	G

NOTE — Staurolite is designated S/G in table 1 as its particle shape is between S and G and is subangular, i.e. the edges and corners of the particles are rounded but the irregular grain shape is maintained.

4 Designation of abrasives

Non-metallic abrasives shall be identified by using the full product designation which consists of the term "Abrasive" followed by "ISO 11126" and the abbreviation specified in table 1. This shall be followed, without spaces, by an oblique stroke and then by the symbol specified in table 2 to indicate the required particle shape of the abrasive as purchased. The designation shall be completed by numbers denoting the particle size range, in millimetres, required.

EXAMPLE 1

Abrasive ISO 11126 N/CS/G 0,2-0,5

denotes an abrasive of the non-metallic coal furnace slag type, complying with the requirements of the appropriate part of ISO 11126, of initial particle shape grit and particle size range 0,2 mm to 0,5 mm.

It is essential that this full product designation is quoted on all orders.

5 Identification and marking

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

Annex A
(informative)

International Standards for metallic and non-metallic blast-cleaning abrasives

A.1 Requirements and test methods for metallic blast-cleaning abrasives are contained in ISO 11124 and ISO 11125, respectively.

ISO 11124 will consist of the following parts, under the general title:

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

— *Part 1: General introduction and classification*

— *Part 2: Chilled-iron grit*

— *Part 3: High-carbon cast-steel shot and grit*

— *Part 4: Low-carbon cast-steel shot*

— *Part 5: Cut steel wire*

ISO 11125 will consist of the following parts, under the general title:

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

— *Part 1: Sampling*

— *Part 2: Determination of particle size distribution*

— *Part 3: Determination of hardness*

— *Part 4: Determination of apparent density*

— *Part 5: Determination of percentage defective particles and of microstructure*

— *Part 6: Determination of foreign matter*

— *Part 7: Determination of moisture*

— *Part 8: Determination of abrasive mechanical properties*

A.2 Requirements and test methods for non-metallic blast-cleaning abrasives are contained in ISO 11126 and ISO 11127, respectively.

ISO 11126 will consist of the following parts, under the general title:

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

— *Part 1: General introduction and classification*

— *Part 2: Silica sand*

— *Part 3: Copper refinery slag*

— *Part 4: Coal furnace slag*

— *Part 5: Nickel refinery slag*

— *Part 6: Iron furnace slag*

— *Part 7: Fused aluminium oxide*

— *Part 8: Olivine sand*

— *Part 9: Staurolite*

— *Part 10: Garnet*

ISO 11127 will consist of the following parts, under the general title:

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

— *Part 1: Sampling*

— *Part 2: Determination of particle size distribution*

— *Part 3: Determination of apparent density*

— *Part 4: Assessment of hardness by a glass slide test*

— *Part 5: Determination of moisture*

— *Part 6: Determination of water-soluble contaminants by conductivity measurement*

— *Part 7: Determination of water-soluble chlorides*

— *Part 8: Determination of abrasive mechanical properties*

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Descriptors: paints, varnishes, substrates, steel products, blast-cleaning, abrasives, non-metallic abrasives, specifications, generalities.

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