SLOVENSKI STANDARD
oSIST prEN ISO 11124-2:2017

01-december-2017

Priprava jeklenih podlag pred nanašanjem barv in sorodnih premazov - Specifikacije za kovinske granulate za peskanje - 2. del: Sekanec iz kaljenega železa (ISO/DIS 11124-2:2017)

Preparation of steel substrates before application of paints and related products - Specifications for metallic blast-cleaning abrasives - Part 2: Chilled-iron grit (ISO/DIS 11124-2:2017)

Vorbereitung von Stahloberflächen vor dem Auftragen von Beschichtungsstoffen - Anforderungen an metallische Strahlmittel - Teil 2: Hartguss, kantig (Grit) (ISO/DIS 11124-2:2017)

Préparation des subjectiles d□'acier avant application de peintures et de produits assimilés - Spécifications pour abrasifs métalliques destinés à la préparation par projection - Partie 2: Grenaille angulaire en fonte trempée (ISO/DIS 11124-2:2017)

Ta slovenski standard je istoveten z: **prEN ISO 11124-2**

ICS:

25.220.10	Priprava površine	Surface preparation
87.020	Postopki za nanašanje barvnih premazov	Paint coating processes

oSIST prEN ISO 11124-2:2017 **en,fr,de**

DRAFT INTERNATIONAL STANDARD

ISO/DIS 11124-2

ISO/TC **35**/SC **12** Secretariat: **BSI**

Voting begins on: **2017-10-04**

Voting terminates on: **2017-12-27**

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

Part 2: Chilled-iron grit

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

Partie 2: Grenaille angulaire en fonte trempée

ICS: 25.220.10

This document is circulated as received from the committee secretariat.

ISO/CEN PARALLEL PROCESSING

Reference number
ISO/DIS 11124-2:2017(E)

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on 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.

The committee responsible for this document is ISO/ *TC 35, Paints and varnishes, Subcommittee SC 12, Preparation of steel substrates before application of paints and related products.*

This second edition cancels and replaces the first edition (1993), annex A of which has been technically revised.

ISO 11124 consists of the following parts, under the general title *Preparation of steel substrates before application of paints and related products — Specifications 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*

At the time of publication of this part of ISO 11124, ISO 11124-5 was in course of preparation.

Annex A of this part of ISO 11124 are for information only.

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

Part 2: Chilled-iron grit

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

1 Scope

This part of ISO 11124 specifies requirements for 12 grades of chilled-iron grit abrasives, as supplied for blast-cleaning processes. It specifies ranges of particle sizes, together with corresponding grade designations. Values are specified for hardness, density, defect/structural requirements and chemical composition.

The requirements specified in this part of ISO 11124 apply to abrasives supplied in the "new" condition only. They do not apply to abrasives either during or after use.

Test methods for metallic blast-cleaning abrasives are given in the various parts of ISO 11125 .

Chilled-iron grit abrasives are used in both static and site blasting equipment. They are most often selected where a facility exists for recovery and re-use of the abrasive.

Note 1 Information on commonly referenced national standards for metallic abrasives and their approximate relationship with ISO 11124 is given in Annex A.

Note 2 Although this part of ISO 11124 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 standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 11124. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 11124 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 9556, *Steel and iron — Determination of total carbon content — Infrared absorption method after combustion in an induction furnace*

ISO 11125-1, *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 1: Sampling*

ISO 11125-2, *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 2: Determination of particle size distribution*

ISO 11125-3, *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 3: Determination of hardness*

ISO 11125-4, *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 4: Determination of apparent density*

ISO 11125-5, *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 5: Determination of percentage defective particles and of microstructure*

ISO 11125-6, *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 6: Determination of foreign matter*

ISO 11125-7, *Preparation of steel substrates before application of paints and related products — Test methods for metallic blast-cleaning abrasives — Part 7: Determination of moisture*

3 Terms and definitions

For the purposes of this part of ISO 11124, the following definitions apply.

3.1
chilled-iron shot
metallic blast-cleaning abrasive produced by a casting process in which molten iron is formed into shot (see also 3.3) by means of an atomization process

3.2
chilled-iron grit
metallic blast-cleaning abrasive obtained by crushing various chilled iron-shot sizes into sharp-edged angular particles

3.3
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

3.4
grit
particles that are predominantly angular, that have fractured faces and sharp edges and that are less than half-round in shape

3.5
defect
fault or weakness in an abrasive which, if present at or above a given level, may be detrimental to the performance of the abrasive (see Table 2)

3.5.1
void
smooth-surfaced internal cavity considered undesirable when greater than 10% of the cross-sectional area of a particle

3.5.2
shrinkage defect
internal cavity with a rough dendritic surface or a zone of microporosity, considered undesirable when greater than 40 % of the cross-sectional area of a particle

3.5.3
crack
linear discontinuity that has a length-to-width ratio of 3:1 or greater, that extends over more than 20 % of the diameter or shortest dimension of a particle and that is radial in direction

3.6
foreign matter
material or particles mixed with the abrasive which are not attached to the abrasive particles and which are nonmagnetic

4 Designation of abrasives

Chilled-iron abrasives shall be identified by "Abrasive ISO 11124" and the abbreviation "M/CI" indicating metallic, chilled-iron abrasive. The symbol "G" shall follow to indicate the required particle shape of the grit as purchased. The designation shall be completed by a 3-digit number denoting the grade, or nominal particle size, required.

EXAMPLE

Abrasive ISO 11124 M/CI/G100

denotes an abrasive of the metallic, chilled-iron type, complying with the requirements of this part of ISO 11124, of particle shape grit and of grade 100 (i.e. nominal particle size 1,00 mm).

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

Note 1 Grade requirements and codes are specified in Table 1. The grade code is based on a number indicating the approximate middle of the particle size range, or nominal diameter, for each grade, expressed in millimetres × 100.

Note 2 Annex A provides guidance on approximately equivalent grades and codings in other commonly referenced national standards for cast-metal abrasives.

5 Sampling

Sampling procedures shall be as specified in ISO 11125-1.

6 Requirements for chilled-iron grit abrasives

The requirements for chilled-iron grit abrasives shall be as specified in Table 2.

7 Package identification and lot traceability

All supplies shall be clearly marked and identified using the designation specified in Clause 4. The unit of sale, i.e. commercial packaging unit, shall be clearly labelled with the full product coding.

Sub-units, i.e. bags, shall be marked with the particle shape and grade codes.

Note Inclusion of additional marking to allow product traceability to a particular production period or lot is strongly recommended. Traceability references should be included at least at the pallet, drum or box level of package marking.

8 Information to be provided by the manufacturer or supplier

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

Table 1 — Screening specifications by grade — Chilled-iron grit — Cumulative % retained

Grade code	Sieve mesh aperture, mm																	
	2,80	2,36	2,00	1,70	1,40	1,18	1,00	0,85	0,71	0,60	0,50	0,425	0,355	0,300	0,180	0,125	0,075	0,045
G240	0		> 80	> 90														
G200		0		> 80	> 90													
G170			0		> 80	> 90												
G140				0		> 75	> 85											
G120					0		> 75		> 85									
G100						0			> 70			> 80						
G070							0					> 70		> 80				
G050									0					> 65	> 75			
G030												0			> 65	> 75		
G020														0		> 60	> 70	
G010															0		> 55	> 65
G005																0		> 20
NOTE — For convenience, a similar table is used in most parts of ISO 11124. Not all sieve mesh apertures are relevant in each case.																		

Table 2 — Requirements for chilled-iron grit abrasives

Property	Requirement	Test method
Grade	See Table 1.	ISO 11125-2
Hardness	90 % of the particles tested shall have a hardness above 650 HV.	ISO 11125-3
	Metallic abrasives sometimes contain internal shrinkage defects or voids which remain undetected beneath the surface in a mounted and polished sample. These hidden cavities cause a non-uniform hardness indentation and give an erroneous hardness reading. These indentations shall be ignored.	
Apparent density	min. 7,0 x 10^3 kg/m^3 (7,0 kg/dm^3)	ISO 11125-4
Defects (see 3.5)	The level of defects present in the particles examined shall not exceed the following levels:	ISO 11125-5
Particle shape	max. 10 % shot or more than half-round	
Voids	max. 10 %	
Shrinkage defect	max. 10 %	
Cracks	max. 40 %	
Total defects	max. 40 %	
Particles with more than one of the above defects shall be counted only once in this total.		
Foreign matter (including slag)	max. 1 % (*mass fraction*)	ISO 11125-6
Structure	Chilled-iron grit abrasives shall have a white iron type microstructure of iron carbide in martensite. Partial decarburization, free graphite or ferrite shall be less than 5 % in any single particle. NOTE — This type of structure is essential to produce the combination of high hardness, rapid abrasion and durability typical of this particular abrasive type. The specific method of manufacture is at the discretion of the producer. No more than 15 % of the particles tested shall have undesirable microstructure.	ISO 11125-5