

# SVENSK STANDARD

## SS-EN ISO 1927-2:2012

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### **Eldfasta massor – Del 2: Provtagning (ISO 1927-2:2012)**

### **Monolithic (unshaped) refractory products – Part 2: Sampling for testing (ISO 1927-2:2012)**



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Europastandarden EN ISO 1927-2:2012 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN ISO 1927-2:2012.

Denna standard ersätter SS-EN 1402-2, utgåva 1.

The European Standard EN ISO 1927-2:2012 has the status of a Swedish Standard. This document contains the official version of EN ISO 1927-2:2012.

This standard supersedes the Swedish Standard SS-EN 1402-2, edition 1.

**Förhållandet till övriga delar under samma huvudtitel - Utdrag ur Förord i ISO 1927-2:2012/  
Relations to other parts under the same general title - Extract from the Foreword of  
ISO 1927-2:2012**

ISO 1927 consists of the following parts, under the general title *Monolithic (unshaped) refractory products*:

- *Part 1: Introduction and classification*
- *Part 2: Sampling for testing*
- *Part 3: Characterization as received*
- *Part 4: Determination of consistency of castables*
- *Part 5: Preparation and treatment of test pieces*
- *Part 6: Measurement of physical properties*
- *Part 7: Tests on pre-formed shapes*
- *Part 8: Determination of complementary properties*

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN ISO 1927-2**

December 2012

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English Version

## Monolithic (unshaped) refractory products - Part 2: Sampling for testing (ISO 1927-2:2012)

Produits réfractaires monolithiques (non façonnés) - Partie  
2: Échantillonnage (ISO 1927-2:2012)

Ungeformte (monolithische) feuerfeste Erzeugnisse - Teil 2:  
Probenahme (ISO 1927-2:2012)

This European Standard was approved by CEN on 30 November 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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**Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## Foreword

This document (EN ISO 1927-2:2012) has been prepared by Technical Committee ISO/TC 33 "Refractories" in collaboration with Technical Committee CEN/TC 187 "Refractory products and materials" the secretariat of which is held by BSI.

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 June 2013, and conflicting national standards shall be withdrawn at the latest by June 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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### Endorsement notice

The text of ISO 1927-2:2012 has been approved by CEN as a EN ISO 1927-2:2012 without any modification.





# Monolithic (unshaped) refractory materials —

## Part 2: Sampling for testing

### 1 Scope

This part of ISO 1927 gives guidance on the sampling of monolithic (unshaped) refractory materials for the purpose of inspection and testing for quality and general information on the reduction and treatment of samples prior to testing. It covers all materials formulated as monolithic refractory materials.

NOTE The term “monolithic” is the preferred term, whereas “unshaped” is commonly used in Europe. For the purposes of this part of ISO 1927, the terms “monolithic” and “unshaped” can be used interchangeably.

### 2 Normative references

The following referenced documents are indispensable for the application 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 5022, *Shaped refractory products – Sampling and acceptance testing*

ISO 8656-1, *Refractory products — Sampling of raw materials and unshaped products — Part 1: Sampling scheme*

ISO 10725, *Acceptance sampling plans and procedures for the inspection of bulk materials*

### 3 Terms and definitions

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

#### 3.1

##### **batch**

quantity of material from which a sample is to be achieved for testing to determine the quality of the material

NOTE A batch consists of material characterized as being of the same type, composition, grading and which, as far as practical, has been manufactured under the same conditions.

#### 3.2

##### **consignment**

quantity of material supplied at one time

NOTE A consignment may consist of one or more batches or parts of batches.

#### 3.3

##### **unit package**

packaged part of a batch which can be a bag or a big bag (castables, gunning material, ramming mixes), a carton (plastics), wrapped block (tap-hole mixes), a drum or a can (injection material, refractory grout)

NOTE A pallet is not a unit package.

#### 3.4

##### **increment**

quantity of material taken at one time from a larger quantity

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### 3.4.1

#### **elementary increment**

quantity of material taken at one time from a unit package

NOTE This operation repeated a number of times will constitute a package increment after mixing.

### 3.4.2

#### **package increment**

increment that is representative of the unit package

NOTE 1 It can be the unit package itself or the result of mixing a certain number of elementary increments.

NOTE 2 The mass and number of elementary increments which are necessary to form the package increment are defined in accordance with ISO 8656-1.

### 3.4.3

#### **laboratory increment**

package increment that has been reduced by an approved method

### 3.4.4

#### **test-piece increment**

test bars or cylinders obtained by shaping the laboratory increment necessary to carry out several physical tests

EXAMPLE Castable test bars for cold modulus of rupture testing.

## 3.5

### **sample**

one or more increments taken from a batch which are to be used to provide information on the batch and to allow a decision concerning the quality of the batch

### 3.5.1

#### **batch sample**

set of package increments representative of the batch

NOTE The number of package increments which are to form the batch sample should be agreed by the principal parties involved. ISO 5022 or other sampling schemes may be used.

### 3.5.2

#### **laboratory sample**

set of laboratory increments

NOTE The number of laboratory increments is the same as the number of package increments.

### 3.5.3

#### **test-piece sample**

set of test-piece increments

NOTE The number of test increments can be higher than the number of laboratory increments and is governed by international test standards.

## 4 Sampling scheme

### 4.1 General principles

4.1.1 It is essential that the adoption of a particular sampling scheme be agreed by the principal parties and that a detailed sampling plan be documented and made available to those responsible for the taking and testing of the increments. The basic framework of a scheme requires decisions and documentation on the following:

- a) the constitution and description of the total material to be sampled;
- b) the identification of batches and quantities which make up the total material;

- c) the type of packaging and mass content for each type of material;
- d) the parties responsible for sampling and testing who may be third parties;
- e) the location, timing and method of sampling;
- f) the level of sampling, population of increments;
- g) the properties to be measured;
- h) the methods of test (reference to International Standard number);
- i) the criteria for assessing values of measured properties for deciding batch quality.

**4.1.2** In all cases during sampling, increment division, preparation and storage of the increments, care shall be taken to protect against any changes in the properties to be tested.

**4.1.3** Sampling shall be performed under the supervision of a person having adequate experience on sampling. The sampler shall be approved either by the interested parties or by the appropriate body or bodies. The sampler shall be informed of the aim of the sampling.

**4.1.4** When individual batches are identified, agreement should be made between the parties on whether, or to what degree, a large batch should be subdivided into smaller batches. This may be undertaken to avoid the possibility of the whole of a large batch being rejected because of a problem with a proportion of it.

**4.1.5** When a sample is required for third-party certification of factory production control as the product is being made, the sample shall be achieved by the same method that the producer uses to obtain a sample for production control purposes.

**4.1.6** Where required, the consignment may be subdivided into individual test batches, for example, if it is clear that the consignment consists of various batches or should be treated in separate partial quantities.

**4.1.7** The sampling framework is presented in Figures A.1 to A.3.

## **4.2 Procurement of the batch sample**

### **4.2.1 Method**

Identify the test batch, i.e. of the consignment or part of the consignment to be sampled (nature of the product, mass, transport conditions, etc.).

Identify the unit package. The average mass ( $m$ ) of this unit package shall be known.

Obtain the number of package increments which form the batch sample as agreed between parties. The sampling scheme of ISO 5022 can be agreed by the parties if the unit packages, considered as equivalent to shaped pieces, weigh less than 35 kg.

Randomly, select this number of the unit packages from the batch.

Proceed to sample the selected unit packages, if their mass is more than 35 kg. This means obtain a package increment of each of these unit packages. In this case, ISO 8656-1 shall be applied to determine the mass and the number of elementary increments which are necessary to obtain the package increment:

- a) Estimate the maximum grain size of the material. This estimation is important because the minimum mass of the elementary increment shall be determined, taking into account the maximum grain size of the material in order to avoid systematic errors during sampling (see Table 1).