International Standard 5022

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

Shaped refractory products — Sampling and acceptance testing

Produits réfractaires façonnés — Échantillonnage et contrôle de réception

First edition — 1979-12-01

UDC 666.76-43 : 620.113 **Ref. No. ISO 5022-1979 (E)**

Descriptors : refractory materials, sampling, shaped refractories, acceptance inspection, tests.

Price based on 26 pages

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5022 was developed by Technical Committee ISO/TC 33, *Refractories*, and was circulated to the member bodies in August 1977.

It has been approved by the member bodies of the following countries :

Austria	India	Spain
Brazil	Iran	Sweden
Czechoslovakia	Italy	United Kingdom
Egypt, Arab Rep. of	Mexico	USA
France	Portugal	USSR
Germany, F.R.	Romania	Yugoslavia
Hungary	South Africa, Rep. of	

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Canada
Netherlands

Printed in Switzerland

Contents

This page intentionally left blank

Shaped refractory products — Sampling and acceptance testing

1 Scope and field of application

This International Standard gives directives for sampling shaped refractory products and for obtaining, from a sample of the smallest possible size, the most precise assessment possible, of the quality of a consignment.

The methods described below make it possible to carry out an acceptance test based on an assessment of the extent to which the specifications have been observed, but do not make it possible to determine whether the accepted consignment is suitable for a given application or to compare different qualities of parts for this same purpose.

This International Standard applies to products manufactured from refractory materials.

It may be applied when the parties concerned have agreed to do so and have therefore, by common consent, made a choice between the various possibilities put forward in this International Standard, and have specified the various parameters (see 3.2) which must be defined in order to permit the application of the methods described.

It is also possible to apply the directives forming the subject of this International Standard while modifying, by prior agreement between the parties concerned, those values which, particularly in the tables, do not follow from statistical laws (see 3.3).

2 Statistical terminology and symbols

2.1 population : The totality of items under consideration. Each of the batches formed in accordance with 3.1 represents a population.

2.2 size of the population : Number of items in the population (symbol : N).

2.3 sample : One or more items taken from a population and intended to provide information on the population and possibly to serve as a basis for a decision on the population or the process which had produced it.

2.4 size of the sample : Number of items in the sample (symbol : n).

2.5 observed value : The value of a characteristic determined as a result of an observation or test (symbol for the observed value having the number i : x_i).

2.6 extreme values :

x_{max} : largest observed value in a sample;

x_{min} : smallest observed value in a sample.

2.7 (arithmetic) mean : The arithmetic mean of the observed values in a sample is their sum divided by the size of the sample.

$$\bar{x} = \frac{1}{n}(x_1 + x_2 + \ldots + x_n) = \frac{1}{n}\sum_{i=1}^{n} x_i$$

The mean value of the population is designated by the symbol μ.

2.8 standard deviation : The standard deviation is the quantity most commonly used in statistics to characterize dispersion. It is the square root of the variance.

The standard deviation of the sample is given by the formula :

$$s = \sqrt{\frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})^2}$$

The standard deviation of the population is designated by the symbol σ.

In practice it is generally not convenient to compute $\bar{x}$ and s using the above formulae. Computations are made easier and their results improved using equivalent but different formulae (see [2]).

2.9 confidence interval : When it is possible to define two functions T_1 and T_2 of the values observed such that, when θ is a population parameter to be estimated, the probability

$$P\,[T_1 \leqslant \theta \leqslant T_2] = 1 - \alpha$$

where $1 - \alpha$ is a fixed number which is positive and less than 1, the interval between T_1 and T_2 is a confidence inverval for θ.