INTERNATIONAL STANDARD 1109

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

Refractory products — Classification of dense shaped refractory products

Produits réfractaires — Classification des produits réfractaires façonnés denses

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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.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these document are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 33 has reviewed ISO Recommendation R 1109 and found it technically suitable for transformation. International Standard ISO 1109 therefore replaces ISO Recommendation R 1109-1969 to which it is technically identical.

ISO Recommendation R 1109 was approved by the Member Bodies of the following countries :

Australia	India	Romania
Austria	Israel	South Africa, Rep. of
Canada	Italy	Spain
Denmark	Japan	Sweden
Egypt, Arab Rep. of	Korea, Dem. P. Rep. of	Turkey
France	Netherlands	United Kingdom
Germany	New Zealand	U.S.S.R
Greece	Poland	Yugoslavia
Hungary	Portugal	

No Member Body expressed disapproval of the Recommendation.

The Member Body of the following country disapproved the transformation of ISO/R 1109 into an International Standard :

U.S.A.

Printed in Switzerland

Refractory products — Classification of dense shaped refractory products

1 SCOPE AND FIELD OF APPLICATION

This International Standard establishes a classification of dense shaped refractory products.

The terminology used is in accordance with ISO/R 836, *Vocabulary for the refractories industry.*

NOTE — The classification of prepared unshaped refractory materials and that of shaped insulating refractory products are given in ISO 1927 and ISO 2245 respectively.

2 CLASSIFICATION

Products	Limiting content of principal constituent	Criteria of subdivision and general observations
High alumina products Group 1	$Al_2O_3 \geqslant 56$ %	A complete designation of these products shall include an indication of either the raw material actually used or the mineralogical constitution of the final product. In the latter case, the method of ascertaining this constitution shall be stated
High alumina products Group 2	$45\ \% \leqslant Al_2O_3 < 56\ \%$	
Fireclay products	$30\ \% \leqslant Al_2O_3 < 45\ \%$	
Low alumina fireclay products[1]	$10\ \% \leqslant Al_2O_3 < 30\ \%$ $SiO_2 < 85\ \%$	
Siliceous products[1]	$85\ \% \leqslant SiO_2 < 93\ \%$	
Silica products	$SiO_2 \geqslant 93\ \%$	Quality specifications according to use
Basic products		In view of recent and possible future developments in basic products, new subdivisions and new criteria of classification may become necessary
— magnesite	$MgO \geqslant 80\ \%$	Products in which the principal constituent is magnesite
— magnesite-chrome	$55\ \% \leqslant MgO < 80\ \%$	Products in which the principal constituents are magnesite and chromite
— chrome-magnesite	$25\ \% \leqslant MgO < 55\ \%$	Products in which the principal constituents are chromite and magnesite
— chromite	$Cr_2O_3 \geqslant 25\ \%$ $MgO \leqslant 25\ \%$	Products in which the principal constituent is chromite
— forsterite		Products in which the principal constituent is forsterite
— dolomite		Products in which the principal constituent is dolomite
Special products		Products based on — carbon — graphite — zircon — zirconia — silicon carbide — carbides (other than silicon carbide) — nitrides — borides — spinels (other than chromite) Products based on several oxides (other than those of basic products) Products based on pure oxides, including alumina, silica, magnesia, zirconia; products of high purity

1) Products designated in certain countries by the name "semi-silica products" may belong either to the low alumina fireclay class or to the siliceous products class.

NOTE — It is necessary, in order to determine the class of a particular product, to take account of the accuracy of chemical analysis.