# INTERNATIONAL STANDARD ISO 710/I

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# Graphical symbols for use on detailed maps, plans and geological cross-sections — Part I : General rules of representation

*Symboles graphiques à utiliser sur les cartes, les plans et les coupes géologiques détaillés — Partie I : Règles générales de représentation*

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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 documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 82 has reviewed ISO Recommendation R 710/I and found it suitable for transformation. International Standard ISO 710/I therefore replaces ISO Recommendation R 710/I-1968.

ISO Recommendation R 710/I was approved by the Member Bodies of the following countries :

| | | |
|---|---|---|
| Belgium | Hungary | Portugal |
| Brazil | India | Spain |
| Chile | Italy | South Africa, Rep. of |
| Czechoslovakia | Japan | Sweden |
| Egypt, Arab Rep. of | Korea, Rep. of | Turkey |
| France | Netherlands | U.S.S.R. |
| Germany | New Zealand | |
| Greece | Poland | |

The Member Body of the following country expressed disapproval of the Recommendation on technical grounds :

Yugoslavia

The Member Body of the following country disapproved the transformation of ISO/R 710/I into an International Standard :

Poland

Other documents in this series on graphical symbols for use on detailed maps, plans and geological cross-sections include :

Part II : *Representation of sedimentary rocks.*

Part III : *Representation of magmatic rocks.*

Part IV : *Representation of metamorphic rocks.* (In preparation.)

Part V : *Representation of minerals.* (In preparation.)



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# Graphical symbols for use on detailed maps, plans and geological cross-sections — Part I : General rules of representation



## 0 INTRODUCTION

In many spheres of technology, science and economics, data on the geological formations and structure of the earth's crust are indispensable. Often, this information is given in the form of maps and plans annotated by conventional symbols.

Until the present time, different symbols have been used, not only from country to country, but often for various fields of application within the same country, the result being entirely different representations of the same facts or geological data. Under these circumstances, it has become necessary to eliminate these differences as far as possible and to reach some agreement on the use of a standard set of symbols and ornaments, so that maps and plans can be understood in the same way in all countries and in all languages.

## 1 SCOPE AND FIELD OF APPLICATION

This International Standard gives general rules for the representation of rocks and minerals on detailed maps, plans and geological cross-sections.

Particular symbols and ornaments for rocks and minerals are given in the relevant parts of ISO 710.

## 2 PRINCIPLES OF REPRESENTATION

**2.1** In order to represent a type of rock on a map or on a plan, the corresponding surface shall be covered by the ornaments representing the rock in question. The surfaces occupied by rocks of different types shall be separated by a continuous thin line if in nature there is a clear demarcation between the different rock types.

**2.2** The use of ornaments in black and white for the representation of rocks and minerals is recommended so as to facilitate their reproduction on coloured backgrounds which may be used to designate either age or other characteristics. The symbols provided keep their significance independently of the colours of the backgrounds.

**2.3** There is a great variety of rocks and often a considerable degree of differentiation is necessary in certain fields of application. On the other hand, it is impossible to have an individual ornament for each of the rocks that are found in nature. For this reason the relevant parts of ISO 710 are limited to the establishment of ornaments for the most important and the most frequently occurring rocks, and are based on the following principles :

a) In order to characterize the properties of rocks, elementary symbols are chosen which shall

- be as simple as possible and therefore easily traceable;
- express the nature of the rock in question;
- be of such a dimension that several elementary symbols may be placed next to each other on the plan to be covered by the same ornament.

b) Basic rocks shall be represented by the juxtaposition of several identical elementary symbols; the mixed rocks and the intermediary types by the juxtaposition of the different elementary symbols which characterize the constituents.

c) In order to characterize the loose form of a rock an irregular arrangement of ornaments and symbols shall be used, a systematic staggered arrangement shall represent the consolidated form of a rock. Other arrangements may be used to represent other details.

d) The individual elements of the rows of ornaments shall be arranged either parallel to the stratification joints or parallel to the margin of the map. On each plan, therefore, shall be indicated which of these two procedures has been adopted.

e) The colour of the rocks shall only be indicated in exceptional cases, and even then not by means of colours (which are reserved for stratigraphy), but rather by a slight modification of the elementary symbols, by letters or by special symbols. If colour is used this method of representation shall be explained on the map in a key.

Within the framework of these principles, the relevant parts of ISO 710 may be enlarged and adapted to needs in different fields. It is clear that in no case must the individual symbols as given therein be assigned other meanings, and that for any characteristic not represented by these symbols a new one must be chosen.