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Surface plates —

Part 1:
Cast iron

Marbres de traçage et de contrôle —
Partie 1: Marbres en fonte

Reference number
ISO 8512-1:1990(E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8512-1 was prepared by Technical Committee ISO/TC 3, *Limits and fits*.

ISO 8512 consists of the following parts, under the general title *Surface plates*:

— *Part 1: Cast iron*

— *Part 2: Granite*

Annexes A, B, C and D of this part of ISO 8512 are for information only.

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Introduction

Surface plates, for many practical purposes, serve the user as a plane or datum surface.

Surface plates are made usually of cast iron or granite; other materials may be used provided that they comply with the requirements for quality and accuracy specified in this International Standard.

For convenience of presentation ISO 8512 comprises two parts, each complete in itself, dealing with cast iron and granite surface plates respectively.

The choice between cast iron and granite surface plates depends on the conditions of use; some general information about care and use, testing, and moderation in loading of plates is given in annex A, annex B and annex C, respectively.

Surface plates —

Part 1:
Cast iron

1 Scope

This part of ISO 8512 specifies requirements for rectangular or square cast iron surface plates ranging from 160 mm × 100 mm to 2 500 mm × 1 600 mm, as preferred sizes, in four grades of accuracy 0, 1, 2 and 3.

This part of ISO 8512 applies to new cast iron surface plates, cast iron surface plates in use, and those reconditioned according to their grade.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 8512. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8512 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 185:1988, *Grey cast iron — Classification.*

3 Definition

For the purposes of this part of ISO 8512, the following definition applies.

deviation from flatness of the working surface: The minimum distance separating two parallel planes between which the working surface can just be contained.

4 Nomenclature

For the purposes of this part of ISO 8512, the nomenclature shown in figure 1 applies.

5 Material

Good quality, close-grained, plain cast iron or alloy cast iron at least equal to grade 250 of ISO 185 shall be used; the material shall be sound and free from blow holes and porous patches. Minor defects in working surfaces of grades 2 and 3 only may be repaired by plugging with material of composition similar to that of the plate.

6 Stress relief

After being cast and rough machined, all plates of grades 0 and 1 and of size up to and including 400 mm × 250 mm shall be given a suitable treatment to relieve internal stresses before being finished. It is strongly recommended that larger plates of all grades be stress-relieved by similar means; however, where facilities for this purpose are not available, such plates may be stabilized by natural ageing by agreement with the purchaser.

The manufacturer shall, on request, supply the purchaser with a statement of the stress-relieving process which the plate has received.