SLOVENSKI STANDARD
oSIST prEN ISO 945-1:2016

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Mikrostruktura železove litine - 1. del: Razvrščanje grafita z vizualno analizo (ISO/DIS 945-1:2016)

Microstructure of cast irons - Part 1: Graphite classification by visual analysis (ISO/DIS 945-1:2016)

Mikrostruktur von Gusseisen - Teil 1: Graphitklassifizierung durch visuelle Auswertung (ISO/DIS 945-1:2016)

Microstructure des fontes - Partie 1: Classification du graphite par analyse visuelle (ISO/DIS 945-1:2016)

Ta slovenski standard je istoveten z: **prEN ISO 945-1**

ICS:

77.080.10	Železo	Irons

oSIST prEN ISO 945-1:2016 **en,fr,de**

DRAFT INTERNATIONAL STANDARD

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Microstructure of cast irons —

Part 1:
Graphite classification by visual analysis

Microstructure des fontes —

Partie 1: Classification du graphite par analyse visuelle

ICS: 77.080.10

ISO/CEN PARALLEL PROCESSING

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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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.

The procedures used to develop this document and those intended for its further maintenance are described in ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directive Part 2 (see www.iso.org/patents).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword-Supplementary information.

ISO 945-1 was prepared by Technical Committee ISO/TC 25, *Cast irons and pig irons*.

Together with ISO 945-2, this second edition of ISO 945-1 cancels and replaces ISO 945-1:2008, which has been technically revised to take into account the expanding range of cast iron alloys available. In addition, photomicrographs have been included together with schematic images to aid classification.

ISO 945 consists of the following parts, under the general title *Microstructure of cast irons*:

— ISO 945, *Part 1: Graphite classification by visual analysis*

— ISO/TR 945, *Part 2: Microstructure of cast irons - Part 2: Graphite classification by image analysis*

— ISO/TR 945, *Part 3: Microstructure of cast irons- Part 3: Matrix structures*

— ISO 945, *Part 4: Microstructure of cast irons- Part 4: Test method for determining nodularity in spheroidal graphite cast irons [under development]*

Introduction

Microstructure designation is a useful feature that provides a means of classifying the graphite form, distribution and size in cast irons.

Graphite classification by visual analysis is a well-established method which is well recognized within the foundry industry as a means of quickly determining the overall graphite microstructure of a cast iron casting.

Microstructure of cast irons —

Part 1:
Graphite classification by visual analysis

1 Scope

This part of ISO 945 specifies a method of classifying the microstructure of graphite in cast irons by comparative visual analysis.

The purpose of this part of ISO 945 is to provide information about the method of graphite classification. It is not intended to give information on the suitability of cast-iron types and grades for any particular application.

The particular material grades are specified mainly by mechanical properties and, in the case of austenitic and abrasion resistant cast irons, by their chemical composition. The interpretation of graphite form and size does not allow a statistically valid statement on the fulfilment of the requirements specified in the relevant material standard.

2 General

2.1 Designation system for classifying graphite in cast irons

When cast iron materials are examined under a microscope in accordance with this part of ISO 945, the graphite shall be classified by

a) its form, designated by Roman numbers I to VI (see Figure 1 and Annex A);

b) its distribution, designated by capital letters A to E (see Figure 2 and Annex B); the graphite distribution designation is only specified for grey cast iron (form I);

c) its size, designated by numbers 1 to 8 (see Figures 3, 4 and 5 and Table 1).

NOTE Figures 1 to 5 show only the outlines and not the structure of the graphite.

FORM

Magnification ×100

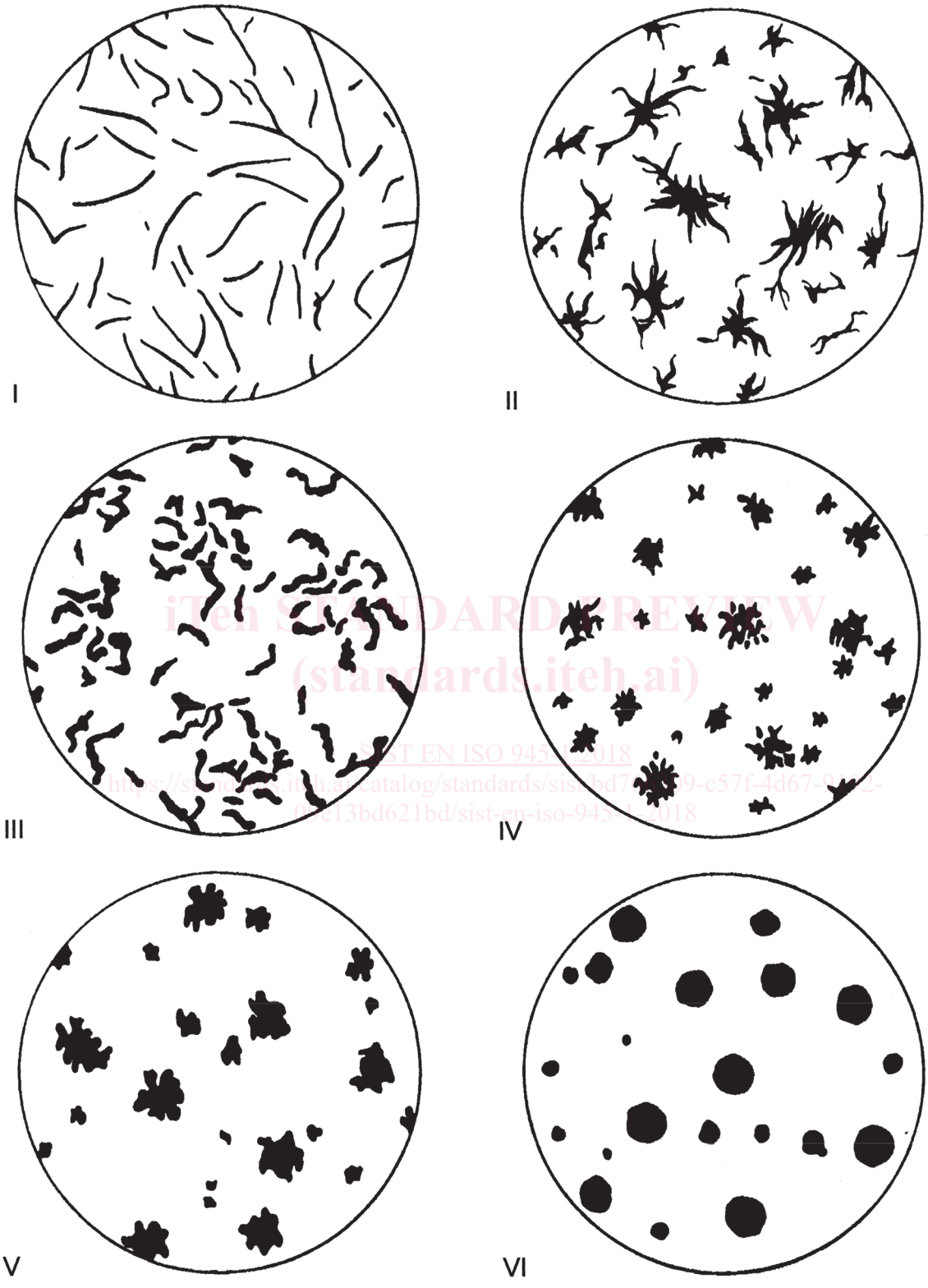


Figure 1 — Principal graphite forms in cast iron materials — Reference images

DISTRIBUTION

Magnification ×100

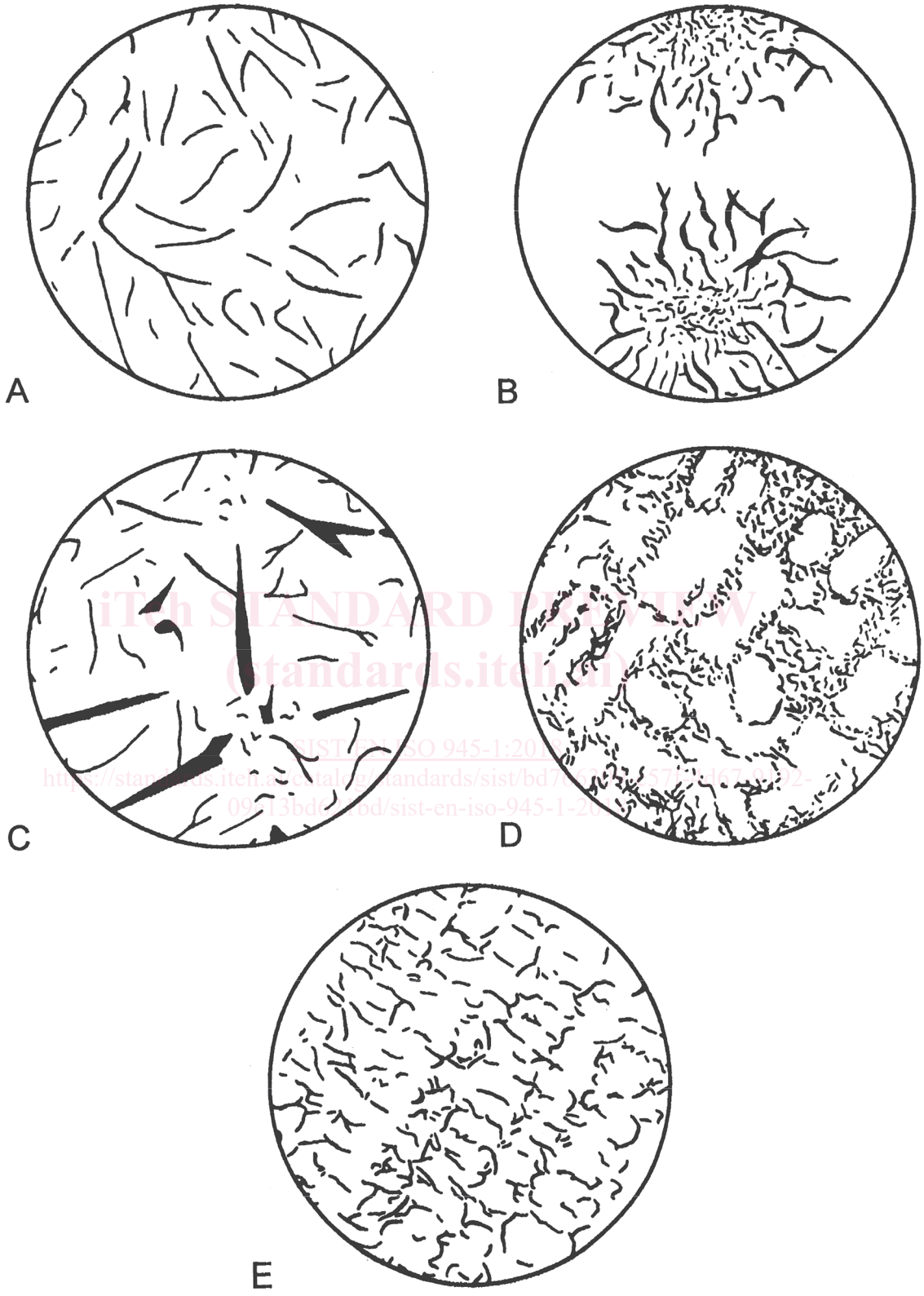
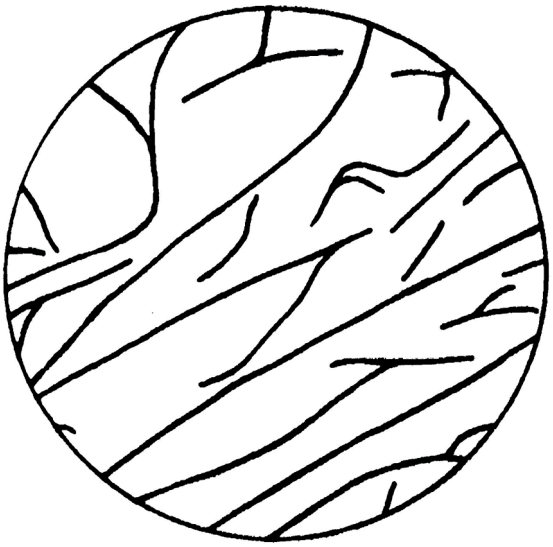


Figure 2 — Reference images for graphite distribution (form I)

SIZE

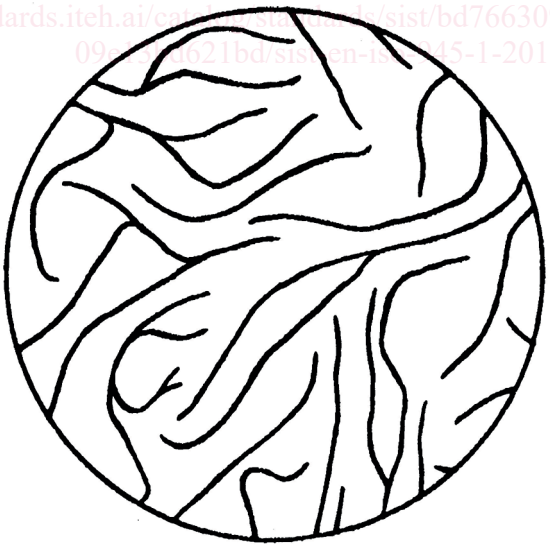


1

Magnification ×100

Figure 3 a — Reference image for graphite size 1: ≥ 1 mm (form I)

SIZE



2

Magnification ×100

Figure 3 b — Reference image for graphite size 2: 0,5 to < 1 mm (form I)