

भारतीय मानक ब्यूरो

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भारतीय मानक मसौदा

ढलवाँ लोहा की सूक्ष्म संरचना — भाग 3 : मैट्रिक्स संरचनाएं

(आईएस 7754 का पहला पुनरीक्षण)

Draft Indian Standard

MICROSTRUCTURE OF CAST IRONS — PART 3 : MATRIX STRUCTURES

(First Revision of IS 7754)

ICS 77.080.10

Metallography and Heat-Treatment
Sectional Committee, MTD 22

Last date for receipt of comments is
28/08/2023

NATIONAL FOREWORD

This draft standard is identical to ISO/TR 945-3 : 2016 ‘Microstructure of cast irons — Part 3: Matrix structures’ issued by the International Organization for Standardization (ISO), and subject to its finalization, is to be adopted by the Bureau of Indian Standards on the recommendation of the Metallography and Heat-Treatment Sectional Committee and approval of the Metallurgical Engineering Division Council.

This standard was originally published in 1975. The Committee has decided to revise this standard to bring it in line with International Practices by splitting in 4 parts as the requirements of IS 7754 : 1975 are covered in multiple ISO standards. This standard Part 3 is being formulated to align it with the latest version of ISO/TR 945-3 : 2016 under dual numbering system.

This Indian Standard is published in four parts. The other parts in this series are:

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|--------|---|
| Part 1 | Graphite classification by visual analysis |
| Part 2 | Graphite classification by image analysis |
| Part 4 | Test method for evaluating nodularity in spheroidal graphite cast irons |

The text of ISO standard has been approved as suitable for publication as an Indian Standard without deviations. Certain terminologies and conventions are, however, not identical with those used in Indian Standard. Attention is especially drawn to the following:

- a) Wherever the words 'International Standard' appear referring to this standard, it should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker while in Indian Standards the current practice is to use a point (.) as the decimal marker.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical-values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

The scope of the standard is as follows:

SCOPE

This Technical Report gives the designations, descriptions and reference micrographs of the matrix structures of cast irons.

It applies to the following types of cast irons:

- grey cast irons (Table 4.1);
- spheroidal graphite cast irons (Table 4.2);
- austenitic cast irons (Table 4.3);
- malleable cast irons (Table 4.4);
- compacted (vermicular) graphite cast irons (Table 4.5);
- ausferritic spheroidal graphite cast irons (Table 4.6);
- abrasion-resistant cast irons (Table 4.7).

Each matrix structure is defined with explanations and micrographs.

Unless otherwise stated in Clause 4, the micrographs shown correspond to samples etched with a solution of 2 % nitric acid in ethanol (Nital).

The complete document/text of ISO/TR 945-3 : 2016 'Microstructure of cast irons — Part 3 : Matrix structures' may be made available, on request to:

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