
Steel and iron castings — Visual testing of surface quality

Pièces moulées en acier ou en fonte — Contrôle visuel de l'état de surface

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Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative References	1
3 Terms and Definitions	1
4 Ordering information	1
5 Test method	2
6 Acceptance criteria	2
7 Test report	3
Annex A (informative)	4
Bibliography	5

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the 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 Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 11, *Steel castings*.

This third edition cancels and replaces the second edition (ISO 11971:2008), which has been technically revised. The main changes compared to the previous edition are as follows:

- “Normative References” added as new [Clause 2](#) and “Terms and Definitions” added as new [Clause 3](#); subsequent Clauses were renumbered
- Correction in [Clause 5](#) (previously [Clause 3](#)) regarding the use of SCRATA comparators for iron castings
- Table 3 and Table 4 in the previous edition were moved to new [Annex A](#)

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The surface roughness of a casting is influenced by the manufacturing process (moulding, grinding, finishing, etc.), the moulding materials used (sand, coating, etc.), the equipment available and the alloy cast.

Since cast surfaces do not exhibit the same cyclic regularity as machined surfaces, it is difficult to evaluate their roughness using conventional mechanical, optical, or pneumatic devices.

The use of visual/tactile comparators is therefore preferred in these circumstances.

Moreover, in order to take account of the irregularities on as-cast surfaces, ground surfaces or other means of finishing of castings, comparators should have relatively large dimensions (greater than or equal to 15 000 mm²) in order to make them more reliable and their results repeatable and consistent.

Two sets of comparators¹⁾ are in widespread use:

1. *SCRATA or CTI comparators for the definition of surface quality of steel castings*, available from Castings Technology International (CTI), Advanced Manufacturing Park, Brunel Way, Rotherham, South Yorkshire, United Kingdom, info@castingstechnology.com;
2. *BNIF 359, Recommandation technique du Bureau de Normalisation des Industries de la Fonderie. Caractérisation d'états de surface des pièces moulées — Utilisation des échantillons types de 110 × 160 mm*, available from CTIF, 44 avenue de la Division Leclerc, 92310 Sèvres, France, www.ctif-editions.com.

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