

ICS 77.140.80

CCS J 31



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 45167-2024

**Steels, nickel alloys and cobalt alloys investment castings -
Visual testing of surface quality**

熔模铸钢件、镍合金铸件和钴合金铸件 表面质量目视检测方法

(English Translation)

Issued on: December 31, 2024

Implemented on: July 1, 2025

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Foreword
1 Scope
2 Normative references
3 Terms and definitions

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting is required.

This document is modified to adopt ISO.19959.2020 "Visual inspection of the surface quality of investment castings of steel, nickel alloy castings and cobalt alloy castings" method".

Compared with ISO.19959.2020, this document has more structural adjustments. Appendix A lists the differences between this document and ISO.19959.

2020 chapter and article number comparison table.

This document has more technical differences than ISO.19959.2020.

A single line (|) is used to indicate these technical differences. A list of these technical differences and their reasons is given in Appendix B.

Compared with ISO.19959.2020, the following editorial changes have been made to this document.

--The format of the annotation content in Table 1 has been modified;

--Added informative Appendix C.

1 Scope

This document specifies ordering information, surface quality visual inspection methods, acceptance criteria, and Standard and test report.

This document applies to the visual inspection of surface quality and quality grade determination of investment castings of steel, nickel alloy and cobalt alloy.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

GB/T 5611 Casting Terminology

3 Terms and definitions

The terms and definitions defined in GB/T 5611 and the following apply to this document.

surface pit

A concave defect on the surface of a casting with a width-to-depth ratio of less than 3.

Linear discontinuity A concave linear defect on the casting surface with an aspect ratio greater than or equal to 3.

positive surface

A protruding defect on the surface of a casting.

parting line

The mark left by the mold parting surface on the casting surface.

ejector pin mark

The mark formed by the ejector pin on the casting surface during demoulding.

Gate stub

Cut away the protrusions remaining after the gating system has been cast.

contrasting photos

A set of photographs used to compare and evaluate the different surface appearances and linear discontinuities of the inspected casting.