

CCS J 31



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

GB/T 39428-2020

**Visual inspection method for surface quality of sand casting
steel parts**

Issued on: November 19, 2020

Implemented on: June 1, 2021

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

Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Detection method	1
5 Test results	2
6 Inspection report	3
Appendix A (informative appendix) This standard and ISO 11971.2020 chapter number comparison table	4
Appendix B (informative appendix) Technical differences between this standard and ISO 11971.2020 and their reasons	6
Appendix C (informative appendix) Comparison photos of surface appearance and discontinuities	8

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method to amend and adopt ISO 11971.2020 "Visual Inspection of the Surface Quality of Cast Steel and Iron Castings". This standard and

Compared with ISO 11971.2020, there are more adjustments in the structure. Appendix A lists the chapter number pairs between this standard and ISO 11971.2020.

According to the list. For other technical differences between this standard and ISO 11971.2020 and their reasons, see Appendix B.

Compared with ISO 11971.2020, this standard has also made the following editorial changes.

---Modified the name of ISO 11971.2020, from "Visual Inspection of the Surface Quality of Cast Steel Castings" to "Sand Steel Castings"

The Visual Inspection Method for Surface Quality defines the scope of application of the standard so that the content of the standard is consistent with the standard name.

This standard was proposed and managed by the National Foundry Standardization Technical Committee (SAC/TC54).

Drafting organizations of this standard. Sharing Steel Casting Co., Ltd., Anhui Yingliu Group Huoshan Casting Co., Ltd., Zhejiang Yingluohua Equipment Manufacturing Co., Ltd.

Company, Hebei Guohua Dingzhou Power Generation Co., Ltd., Xiangyang Jinnet Machinery Co., Ltd., Qingdao Lianshan Casting Co., Ltd., Dongguan De

Wei Casting Products Co., Ltd., Chengde Rongmao Cast Steel Co., Ltd., Shenyang Foundry Research Institute Co., Ltd., China Guangdong Nuclear Engineering Co., Ltd.

1 Scope

This standard specifies the visual inspection methods and quality grades for the surface quality of sand casting steel castings.

This standard applies to steel castings made by sand casting.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 5611 Casting Terminology

3 Terms and definitions

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

3.1

Compare photos

A set of photos used to compare and evaluate different surface appearances and surface discontinuities of the tested castings.

4.1.1 The inspector shall have the ability to carry out visual inspection.

4.1.2 The inspector shall conduct a visual inspection every year, and the results of the visual inspection must meet the following requirements.

a) Within a distance of not less than 30cm, the near vision of one or both eyes should be able to read Jaejer 1 or TimesNewRoman

4.5 or the same size characters (1.6mm height);

b) The inspector should have sufficient color vision to be able to distinguish and distinguish the difference in color or gray level involved in visual inspection.

4.2 Surface condition

The surface to be inspected should be clean and free of any substances that affect visual inspection. Before the visual inspection, the castings should undergo surface cleaning treatments such as sandblasting and shot blasting.

4.3 Observation conditions

Visual inspection should be carried out under the condition of illumination not less than 1000lx. Under certain conditions, portable lighting can also be used as auxiliary lighting.

4.4 Operation method

4.4.1 During visual inspection, the distance between the eyes and the tested casting should be less than 600mm