ICS 35.240.50
CCS J 07

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 45575-2025

Technical requirements of automatic inspection system for surface defect of industrial product

工业产品表面缺陷自动检测系统技术要求

Issued on: April 25, 2025 **Implemented on: November 1, 2025**

Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC

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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.

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This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Automation System and Integration Standardization Technical Committee (SAC/TC159).

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Technical requirements for automatic detection system of surface defects of industrial products

1 Scope

This document specifies the architecture and composition of the industrial product surface defect automatic detection system, system functional requirements, automatic detection core technology, Testing process and deployment and integration technical requirements.

This document is applicable to the construction and application of automatic detection system for surface defects of industrial products based on deep neural network technology.

2 Normative references

This document has no normative references.

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Surface imperfection

Units, groups of units, or irregularities in the actual surface that are generated unintentionally or accidentally during processing, storage, or use.

[Source. GB/T 40810.1-2021, 3.12]

3.2 machine learning

The process by which a functional unit improves its performance by acquiring new knowledge or skills, or by organizing existing knowledge or skills.

[Source. GB/T 5271.31-2006, 2.31.01.02]

3.3 neuralnetwork

A network of basic processing elements connected by weighted paths with adjustable weights, which makes each element Each unit generates a value and transmits it to other units or represents it as an output value.

[Source. GB/T 5271.34-2006, 34.01.06]

4 Abbreviations

The following abbreviations apply to this document. CCD. Charge-coupled Device

5.1 System Architecture

The architecture of the automatic detection system for industrial product surface defects is shown in Figure 1.