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

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Non-destructive testing - Terminology - Part 14: Visual testing

无损检测 术语 第14部分：视觉检测

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Table of Contents

- 1 Scope
- 2 Normative references
- 3 General terms for visual inspection
- 4 Terminology of visual inspection principles and methods
- 5 Visual Inspection Terms Related to "Light"
- 7 Index
- 14 Visual testing

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. This document is part 14 of GB/T 12604 "Non-destructive testing terminology". GB/T 12604 has been published in the following parts.

- 12604.1 Nondestructive testing terminology Ultrasonic testing;
- 12604.2 Nondestructive testing terminology Radiographic testing;
- 12604.3 Nondestructive testing terminology Penetrant testing;
- 12604.4 Nondestructive testing terminology Acoustic emission testing;
- 12604.5 Nondestructive testing terminology Magnetic particle testing;
- 12604.6 Nondestructive testing terminology Eddy current testing;
- 12604.7 Nondestructive testing terminology Leak detection;
- 12604.8 Nondestructive testing terminology Neutron testing;
- 12604.9 Nondestructive testing terminology infrared thermography;
- 12604.10 Non-destructive testing terminology Part
- 10. Magnetic memory testing;
- 12604.11 Nondestructive testing terminology X-ray digital imaging testing;

1 Scope

Part 14 of China's non-destructive testing vocabulary, covering visual testing - the oldest and most used of all the NDT methods, and the one whose terminology has historically been the loosest precisely because everybody assumes they know what looking at something means. This document defines the terms related to direct visual testing and to indirect visual testing. The terminology applies both to direct visual inspection based on human observation and to indirect visual inspection carried out with instruments such as industrial borescopes. Visual testing is the first method applied to almost any component and the one that finds the largest number of defects in practice, but it is also the method where the result depends most on the conditions and on the observer - the illumination, the angle, the distance, the surface preparation, the visual acuity of the person and whether they were looking for that particular thing. Everything a visual procedure specifies is one of those, so the terms in which they are written have to be unambiguous or the procedure cannot be repeated. The distinction between direct and indirect testing, which the document turns on, is the practical one: direct means an unobstructed line of sight, with defined limits on distance and angle, and indirect means an instrument in between - a borescope, a camera, a mirror - which introduces its own resolution, field of view, illumination and distortion, and which changes what may be claimed from the examination. The document defines the terms for both, together with those for the equipment, the conditions, the illumination and the recording, and it is used with Part 1 of the series. Issued on 28 November 2024.

This document defines the terms related to direct vision inspection and indirect vision inspection. The terminology provided in this document applies to both direct visual inspection based on human observation and indirect visual inspection with the aid of instruments such as industrial sight glasses. Detection.

2 Normative references

This document has no normative references.

3 General terms for visual inspection

3.1 visual The sensory function of light acting on photosensitive tissue, enabling it to sense target information and then classify, identify, track and judge.

Note. Generally divided into artificial vision and computer vision.

3.2 Visual testing A nondestructive testing method based on artificial vision or computer vision to observe, measure and judge the state of the workpiece surface.

3.3 Direct visual testingdirectvisual testing There is a continuous and uninterrupted optical path from the inspector's eyes to the inspection area, without the aid of any tools or mirrors, lenses, etc. Visual inspection (3.2). [Source: GB/T 20967-2007, 3.1, modified]

3.4 remote visual testing There is a discontinuous, intermittent optical path between the

inspector's eyes and the inspection area, with the help of a camera system, a video system or a camera. Visual inspection of equipment such as robots (3.2). [Source: GB/T 20967-2007, 3.2, modified]

3.5 Speculum visual testing scopyvisual testing Visual inspection (3.2) using a peephole inspection system to detect and evaluate optical images or photoelectric converted video images.

3.6 A measure of the variation in illumination (5.3) within the effective depth of field (4.8) of visual inspection (3.2).

Note. It can be expressed as the ratio of the minimum illuminance to the average illuminance of a given plane, or as the ratio of the minimum illuminance to the maximum illuminance.

3.7 Visual adjustmentvisualadjustment Under appropriate observation conditions, the best observation state can be achieved by adjusting the spotlight or floodlight size of the vision (3.1).