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Non-destructive testing - Visual testing method of long material

无损检测 长材视觉检测方法

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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.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document is proposed and coordinated by the National Technical Committee for Standardization of Non-destructive Testing (SAC/TC56).

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Non-destructive testing of long products - Visual inspection methods

1 Scope

This document describes the basic principles of vision inspection of long products using line laser profilometry and specifies the general principles of the vision inspection method.

Requirements, testing procedures, test records and test reports.

This document is applicable to metal bars, pipes, wires and long products with diameter not less than 12mm and silver, black skin or sand peeling surface.

Visual inspection of external surface for open defects, pits and deformation. Long products with other cross-sectional shapes shall be subject to the same procedures.

Note. The line laser profile measurement method is to obtain the three-dimensional profile information of the object surface by emitting a laser beam and receiving the light reflected from the object surface, and then use the image to measure the three-dimensional profile of the object surface.

A method for high-precision measurement of object size, form and position tolerances, and surface defects using image and point cloud processing technology.

2 Normative references

GB/T 12604.14

3 Terms and Definitions

The terms and definitions defined in GB/T 12604.14 and the following apply to this document.

3.1 long material

A long product whose length is significantly greater than the maximum dimension of its cross section.

Note. Generally, the ratio of length to maximum cross-sectional dimension is 10 times or more.

3.2 clear distance; CD

The minimum distance from the instrument lens to the surface of the object being measured at which a clear image can be obtained. Note. See Figure 1.