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Non-destructive testing — Terminology — Terms used in magnetic particle testing

Essais non destructifs — Terminologie — Termes utilisés en magnétoscopie

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This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

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Foreword

This document (prEN 12707:2013) has been prepared by Technical Committee CEN/TC 138 “Non-destructive testing”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

Introduction

This document replaces the standard EN 1330-7:2005 Non-destructive testing - Terminology - Part 7: Terms used in magnetic particle testing

To date, it is anticipated that EN 1330 will comprise at least 10 parts prepared separately by groups of experts, each group consisting of experts in a given NDT method (for parts 3 to 10).

A comparative examination of these parts has shown the existence of common terms that are often defined differently. These terms have been taken from parts 3 to 10 and then split into two categories :

- general terms corresponding to other fields such as physics, electricity, metrology... and already defined in international documents. These terms are the subject of part 1.

- common terms specific to NDT. These terms, the definitions of which have been harmonized in an Ad Hoc group, are the subject of part 2.

In view of the nature of the approach taken, the lists of terms in parts 1 and 2 are in no way exhaustive.

This European Standard consists of the following parts :

In view of the nature of the approach taken, the lists of terms in parts 1 and 2 are in no way exhaustive.

This European Standard consists of the following parts :

Part 1 : List of general terms

Part 2 : Terms common to the non-destructive testing methods

Part 3: Terms used in industrial radiology testing

Part 4: Terms used in ultrasonic testing

Part 5: Terms used in Eddy current testing

Part 8: Terms used in leak tightness testing

Part 9: Terms used in acoustic emission testing

Part 10: Terms used in visual examination

NOTE EN ISO 12706 Non-destructive testing – Terminology - Terms used in penetrant testing was published formerly as draft European Standard prEN 1330-6

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1 Scope

This document defines terms used in magnetic particle testing.

2 General terms specifically associated with magnetic particle testing

2.1 adjacent conductor technique

magnetization using a bar or cable close to, but isolated from the test surface

2.2 ampere turns

product of the number of turns of a coil and the current in amperes flowing through the coil

2.3 arc strike

burn damage due to poor electrical contact

2.4 blue haze

shady view due to the fluorescence emitted by organic molecules in the vitreous humour of the eye under the influence of UV-A if UV blocking goggles are not worn

2.5 carrier liquid

liquid in which the magnetic particles are suspended for the wet technique

2.6 central conductor

threaded conductor positioned in the centre of an aperture of the component

2.7 circular magnetization

continuous lines of force within a test piece produced by current flow or a conductor surrounded by the test piece

2.8 coil technique

magnetization using a flexible cable or a rigid coil to test the totality or a part of a component

2.9 colour contrast detection medium

detection medium that gives indications which can be viewed in white light

2.10 coloured detection media

detection media for testing with visible light

2.11 combined radiometer/luxmeter

digital meter used to measure both the (UV-A or blue light) irradiance and the (visible light) illuminance

2.12 concentrate

detection media supplied in a form requiring dilution before use

2.13 conditioning agent

additives in water based media used to improve proprieties e.g.: wetting, foaming or to improve corrosion resistance

2.14 constant current control

device to maintain the preset current

2.15 contact pad

replaceable pad usually copper braid, placed on electrodes to improve electrical connection

2.16 continuous magnetization technique

technique where detection medium is applied during magnetization

2.17 contrast

ratio between the illuminance from a discontinuity indication and that from the surrounding background

2.18 contrast aid paint

thin coating or film applied to a surface to improve the visibility of indications using coloured detection media

2.19 current flow technique

magnetization by passing a current through a component

2.20 current generator

source of current for magnetization

2.21 cut-off

wavelengths at which the irradiance or the illuminance (as appropriate) is at 50% (generally chosen value) of the peak value

2.22 detection medium

magnetic particles suspended in liquid or in dry powder form, ready for use

2.23 demagnetizing unit

equipment used to set the residual magnetization to the level required by the relevant specification

2.24 digital luxmeter

digital meter used to measure the (visible light) illuminance

2.25 digital radiometer

digital meter used to measure the (UV-A or blue light) irradiance

2.26 dry powder technique

application of magnetic particles, air suspended in use

2.27 dual purpose detection medium

detection medium visible both under UV-A radiation and white light

2.28 fixed installation

stationary equipment providing a magnetic field for components testing

2.29 flexible coil technique

magnetization using a conductor wrapped closely around a component

2.30 fluorescent detection medium

detection medium that fluoresces under UVA radiation

2.31 flux indicator

device containing deflecting needle which, placed on the test surface indicates magnetization

2.32 fluorescent stability

capability of a detection media to maintain its fluorescent properties over a period of time

2.33 fluorescent transparent comparator

transparent stiff plastic ruler containing drawings of geometrical shapes (lines, circles, etc.) of generally green colour in visible light and fluorescent under UV-A radiation allowing for assessing the dimensions of indications

2.34 headstock

mass in full or laminated ferromagnetic material being a part of the magnetic circuit (or electromagnet) of a magnetic bench and which is used as interface with the part under inspection to provide an adequate magnetic flux circuit. A bench comes with two stocks, generally one fixed (headstock) and one mobile (tailstock: see this term)

2.35 induced current flow technique

current flow in a ring type component produced by making it the secondary of a transformer