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Non-destructive testing — Magnetic particle testing — Vocabulary

Essais non destructifs — Magnétoscopie — Vocabulaire

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Contents

Page

Foreword

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This first edition of ISO 12707 is based on, and constitutes a technical revision of, European Standard EN 1330-7:2005.

Non-destructive testing — Magnetic particle testing — Vocabulary

1 Scope

This International Standard defines general terms specifically associated with magnetic particle testing.

2 Terms and definitions

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
arcing strike
poor electrical contact causing burn damage

2.4
carrier liquid
liquid in which the *magnetic particles* (2.30) are suspended for the wet technique

2.5
central conductor
threaded conductor positioned in the centre of an aperture of the component

2.6
circular magnetization
continuous lines of force within a test piece produced by current flow or a conductor surrounded by the test piece

2.7
coil technique
magnetization using a flexible cable or a rigid coil to test all or a part of a component

2.8
coloured detection medium
detection medium for testing with visible light

2.9
concentrate
detection medium supplied in a form requiring dilution before use

2.10
conditioning agent
additive in water-based media used to improve their properties which may include wetting, antifoaming and corrosion inhibitors

2.11
constant current control
device to maintain the pre-set current

2.12
contact pad
replaceable pad usually copper braid, placed at contact points to improve electrical connection

2.13
continuous magnetization technique
technique where detection medium is applied during magnetization

2.14
contrast aid paint
thin coating or film applied to a surface to improve the visibility of indications using *coloured detection medium* (2.8)

2.15
current flow technique
magnetization by passing a current through a component

2.16
current generator
source of current for magnetization

2.17
detection medium
magnetic particles (2.30) suspended in a carrier liquid or in dry powder form, ready for use

2.18
dry powder technique
application of *magnetic particles* (2.30), air suspended in use

2.19
fixed installation
stationary equipment providing a magnetic field for testing of components

2.20
flexible coil technique
magnetization using a conductor wrapped closely around a component

2.21
fluorescent detection medium
detection medium that emits visible light when excited by a different radiation, usually UV-A radiation

2.22
flux indicator
magnetic flux shunting detector containing artificial discontinuities

2.23
fluorescent stability
capability of a detection medium to maintain fluorescent properties

2.24
induced current flow technique
current flow in a ring type component produced by making it the secondary of a transformer

2.25
lift test
functional check of portable electromagnets assessed by attractive force

2.26
magnetic bench
stationary equipment for general applications employing *magnetic flow techniques* (2.28) and/or *current flow techniques* (2.15)

2.27
magnetic extender
ferromagnetic piece placed at the end of a component to improve the magnetization

2.28
magnetic flow technique
magnetization by inducing a magnetic flux through the component

2.29
magnetic ink
magnetic particles (2.30) suspended in a carrier liquid

2.30
magnetic particle
finely distributed ferromagnetic material attracted by the magnetic flux leakage

2.31
magnetic particle content
measurement of *magnetic particles* (2.30) in magnetic ink

2.32
magnetic particle testing
non-destructive test method using magnetic fields and detection media to reveal surface and near surface discontinuities in ferromagnetic materials

2.33
magnetic writing
form of false indication due to local, random magnetization, sometimes caused when a magnetized component comes in contact with the test item

2.34
magnetizing coil
arrangement of a rigid or flexible conductor to encircle the entire component or part of it

2.35
mechanical stability
capability of detection medium to maintain performance under working conditions

2.36
multidirectional magnetization
single magnetizing operation that produces a directionally varying field in the test part

2.37
portable electromagnet (yoke)
hand-held, electrical equipment used for *magnetic flow techniques* (2.28)

2.38
prods
hand-held electrodes

2.39
residual field
magnetic field remaining after magnetization

2.40
rigid coil technique
magnetization using a coil with fixed dimensions

2.41
tangential field
component of a magnetizing field parallel to the surface

2.42
tangential field strength
value of the *tangential field* (2.41)

2.43
threaded conductor technique
bar or cable through a hole or an aperture used for magnetization

Bibliography

[1] ISO 12706[1)], *Non-destructive testing — Terminology — Terms used in penetrant testing*

[2] ISO 12718[2)], *Non-destructive testing — Eddy current testing — Vocabulary*

[3] EN 1330-7:2005, *Non-destructive testing — Terminology — Part 7: Terms used in magnetic particle testing*

1) Formerly published as European Standard EN 1330–6.

2) Formerly published as European Standard EN 1330–5.

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