

Glossary of

Terms used in non-destructive testing —

Part 2: Magnetic particle flaw detection

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Foreword

This revision of BS 3683-2 has been prepared under the direction of the General Mechanical Engineering Standards Committee and supersedes the 1963 edition which is withdrawn.

In this revision, the opportunity has been taken to update existing terms and introduce new terms and definitions used in the application of magnetic particle flaw detection techniques. As with the first edition, this revision has been prepared to promote understanding of the subject particularly with regard to the terms encountered in technical literature and reports. The drafting committee accordingly decided not to include general physical terms which are defined in other standards except in those cases where such terms have a particular application in this field of non-destructive testing.

In the interests of simplicity, the terms defined in this Part of the glossary are arranged alphabetically, and where two or more terms have come into use with virtually the same meaning, the term to be preferred has been selected for definition.

Other Parts of BS 3683 respectively define the terms commonly used in penetrant, radiological, ultrasonic and eddy-current flaw detection.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Glossary

Term	Definition
adjacent cable technique	A technique of magnetization in which an insulated, current-carrying cable is laid close to the surface of the component, adjacent to the area to be tested.
alternating current	An electric current that alternately reverses its direction in a circuit in a periodic manner.
alternating current magnetization	Magnetization by the magnetic field induced when alternating current is flowing.
ampere/metre (A/m)	The field strength in air, at the centre of a single-turn circular coil having a diameter of 1 m, through which a current of 1 A is flowing. NOTE This is the SI unit of field strength which has replaced the oersted (1 oersted = 79.58 A/m).
ampere turns	The product of the number of turns (N) of a coil and the current in amperes (I) flowing through the coil.
aperture type coil	An alternating current carrying coil constructed in such a way that components may be passed through it for the purpose of demagnetization.
arc	A luminous high temperature discharge produced when a current of electricity flows across a gap.
background	The general appearance of the surface on which indications are viewed.
background paint	See “contrast aid”.
Berthold penetrameter	A flux indicator that contains an artificial flaw in the shape of a cross, mounted below an adjustable cover plate. NOTE It is placed on a magnetized component during magnetization to check the magnetizing technique and/or the ink.
black light (<i>deprecated</i>)	See “UV-A”.
burning	Local overheating of the component at the electrical contact area arising from high resistance, or the production of an arc, or prolonged contact.
captive fluid indicator	A device comprising a quantity of magnetic ink sealed in a transparent container, the ink behaving in the same way on a magnetized component as free magnetic ink.
carrier fluid	The fluid in which ferromagnetic particles are suspended to facilitate their application.
central conductor	See “threading bar”.
centrifugal tube settlement flask	A settlement flask used to determine the solids content of magnetic flaw detection inks.
circular magnetic field	The magnetic field surrounding an electric conductor, resulting from the passage of a current through the conductor.
circular magnetization	Magnetization in a component resulting from current passed through a threading bar.
circumferential magnetization	Magnetization that establishes a flux around the periphery of a component.
“clip-on” ammeter (clampmeter)	A portable instrument for measuring the current flowing in a conductor without breaking the circuit.