AS 1929—1981

Australian Standard®

NON-DESTRUCTIVE TESTING GLOSSARY OF TERMS

The following scientific, industrial and governmental organizations and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Atomic Energy Commission

Australian Gas Association

Australian Institute for Non-destructive Testing

Australian Welding Institute

Bureau of Steel Manufacturers of Australia

Confederation of Australian Industry

Department of Defence

Department of Industrial Relations, N.S.W.

Department of Labour and Industry, Victoria

Department of Productivity

Electricity Supply Association of Australia

Institute of Australian Foundrymen (N.S.W. Division)

National Association of Testing Authorities

Railways of Australia Committee

Society of Automotive Engineers—Australasia

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PREFACE

This edition of this standard was prepared by the Association's Committee on Non-destructive Testing to replace the 1977 edition which was a revision of AS B259, Parts 1 to 5—1968.

Some terms have been deleted because their meaning is not restricted to non-destructive testing. Known errors have been corrected and additional terms added. Of significance are those related to radioactivity; in particular the rad, rem and roentgen have been replaced by the SI units gray (Gy), sievert (Sv) and coulombs per kilogram (C/kg) respectively. The numbers allocated to the terms for reference from the Index have been deleted and the Index now gives only the relevant Section number, the terms within the Sections being in alphabetical order.

AS B259, which was BS 3683, Parts 1 to 5, endorsed as the Australian standard, was issued in separate parts. The committee decided that Australian industry would be best served by the issue of one glossary which covered all the fields of non-destructive testing. This standard accordingly reflects that decision.

During preparation of the standard, BS 3683, Parts 1 to 5, and the following publications were considered:

ISO/R 947—Addendum 1	Explanations on the Significance of the Principal Radiographic Terms Used in ISO Recommendations
BS 3455	Glossary of Terms Used in Nuclear Science and Technology
ASTM E 268—1968	Terms Relating to Electromagnetic Testing

The committee also considered a publication issued by the Aerospace Industries Association (USA) 'Glossary of Terms Frequently Used in Non-destructive Testing'. Acknowledgement is made of the assistance obtained from these sources.

Terms which specifically relate to a particular field of testing have been placed in the appropriate section, cross referencing being used where terms are related. General physical terms which have widespread use and are not confined to non-destructive testing have not been included.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
NON-DESTRUCTIVE TESTING—GLOSSARY OF TERMS

SECTION 1. GENERAL TERMS

Term	Definition
acoustic testing	The method of non-destructive testing which uses acoustic energy usually within the frequency range 1 MHz to 5 MHz.
defect	A discontinuity whose size, shape, orientation, location or properties make it detrimental to the useful service of the product in which it occurs or which exceeds the accept/reject criteria for the given design.
discontinuity	Any imperfection or interruption in the normal physical structure or configuration of a product, such as cracks, laps, seams, inclusions, porosity, lamination or change in grain structure. NOTE: A discontinuity may or may not affect the usefulness of the product.
eddy correct testing	The method in which eddy current flow is induced and monitored in the product under test. Changes in current flow are subsequently analysed.
electromagnetic testing	The method of non-destructive testing which uses electromagnetic energy having frequencies less than visible light. It covers eddy current, magnetic field, leakage field pick-up and direct current conduction tests.
indication	A response or evidence of a response in non destructive testing that requires interpretation to determine its significance.
magnetic particle testing	The method of non-destructive testing which involves the generation of a magnetic flux within magnetic materials, used to detect surface or near surface discontinuities. Testing also involves the application of suitable magnetic particles to the surface of the material to give an indication of a discontinuity.
non-destructive testing	Testing of materials to detect internal, surface and concealed defects or discontinuities using methods which do not damage or destroy the material under test.
penetrant testing	The method of non-destructive testing which involves the application of a penetrant to materials to detect and locate discontinuities such as laps, folds, cracks, porosity and fissures which are open to the surface. The method also involves the removal of excess penetrant, and, if necessary, the application of a developer to produce a visible indication of a discontinuity.
radiation testing	The method of non-destructive testing which uses X-rays or gamma rays in order to produce a graphic record on sensitized film which indicates comparative soundness of the material under test.