AS 2168.2—2009

Australian Standard®

Non-destructive testing—Computerized radiography

Part 2: Testing of metallic materials using X-rays and gamma rays

This Australian Standard® was prepared by Committee MT-007, Non-destructive Testing of Metals and Materials. It was approved on behalf of the Council of Standards Australia on 17 June 2009.
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The following are represented on Committee MT-007:

- Australian Aerospace Non-Destructive Testing Committee
- Australian Industry Group
- Australian Institute for Non-Destructive Testing
- Australian Nuclear Science & Technology Organisation
- Australian Pipeline Industry Association
- Bureau of Steel Manufacturers of Australia
- Engineers Australia
- Metals Trade Industry Association
- National Association of Testing Authorities, Australia
- New Zealand Non-Destructive Testing Association
- NSW WorkCover Authority
- Victorian WorkCover Authority
- Welding Technology Institute of Australia

This Standard was issued in draft form for comment as DR 06539.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Part 2: Testing of metallic materials using X-rays and gamma rays

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PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee MT-007, Non-destructive Testing of Metals and Materials. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to ensure that the parameter of computed radiography systems as a progression for the next generation of radiographic methods are achieved.

In the preparation of this Standard cognizance was taken of the following Standards:

EN	
14784	Non-destructive testing—Industrial computed radiograph with storage phosphor imaging plates
14784-1	Part 1: Classification of systems
14784-2	Part 2: General principles for testing of metallic materials using X-rays and gamma rays

This Standard is one of a series of Standards covering the range radiography of metals and materials.

AS	
2168	Non-destructive testing—Computerized radiography
2168.1	Part 1: Systems
2168.2	Part 2: Testing of metallic materials using X-rays and gamma rays (this Standard)
2177	Non-destructive testing—Radiography of welded butt joints in metal
2314	Radiography of metals—Image quality indicators (IQI) and recommendations for their use
3507	Non-destructive testing
3507.1	Part 1: Guide to radiography for ferrous castings
3507.2	Part 2: Radiographic determination of quality of ferrous castings
3669	Non-destructive testing—Qualification and approval of personnel—Aerospace
4749	Non-destructive testing—Terminology of and abbreviations for fusion weld imperfections as revealed by radiography

Statements expressed in mandatory terms in footnotes to tables are deemed to be requirements of this Standard.

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STANDARDS AUSTRALIA

Australian Standard

Non-destructive testing—Computerized radiography

Part 2: Testing of metallic materials using X-rays and gamma rays

1 SCOPE

This Standard specifies fundamental techniques of computed radiography with the aim of enabling satisfactory and repeatable results to be obtained economically. The techniques are based on the fundamental theory of the subject and test measurements. This Standard specifies the general rules for industrial computed X-ray and gamma radiography for flaw detection purposes, using storage phosphor imaging plates (IP). It is based on the general principles for radiographic examination of metallic materials on the basis of films, (refer to AS 2177.)

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS
1929 Non-destructive testing—Glossary of terms
2177 Non-destructive testing—Radiography of welded butt joints in metals
2314 Radiography of metals—Image quality indicators (IQI) and recommendations for their use
2168 Non-destructive testing—Computerized radiography
2168.1 Part 1: Systems
2243 Safety in laboratories
2243.4 Part 4: Ionizing radiations
2452 Non-destructive testing—Determination of thickness
2452.1 Part 1: Determination of wall thickness of pipe by the use of radiography
3507 Non-destructive testing
3507.1 Part 1: Guide to radiography for ferrous castings
3669 Non-destructive testing—Qualification and approval of personnel—Aerospace
3998 Non-destructive testing—Qualification and certification of personnel

EN
462 Non-destructive testing—Image quality of radiographs
462-5 Part 5: Image quality indicators (duplex wire type), determination of image unsharpness value

3 DEFINITIONS

For the purposes of this Standard the following definitions and those in AS 1929 apply.

3.1 Computed radiography system (CR system)

Complete system of a storage phosphor imaging plate (IP) and corresponding read out unit (scanner or reader), and system software, which converts the information of the IP into a digital image.