

AS 2177, Part 2—1982

Australian Standard<sup>®</sup>

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**RADIOGRAPHY OF WELDED  
BUTT JOINTS IN METAL**

**Part 2—IMAGE QUALITY  
INDICATORS (IQI) AND  
RECOMMENDATIONS  
FOR THEIR USE**

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This standard, prepared by Committee MT/7, Non-destructive Testing of Metals and Materials, was approved on behalf of the Council of the Standards Association of Australia on 14 January 1982, and was published on 19 April 1982.

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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 Pipeline Industry Association  
Australian Welding Institute  
Bureau of Steel Manufacturers of Australia  
Commonwealth Aircraft Corporation  
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  
Metal Trades Industries Association of Australia  
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## PREFACE

This edition of this standard was prepared by the Association's Committee on Non-destructive Testing of Metals and Materials at the request of the Metals Standards Board to supersede the 1979 edition, which constituted the revision, metrication and replacement of AS B262—1968.

Because of the widespread use in Australia of image quality indicator (IQI) systems specified by various standards bodies\*, the committee, during the revision, resolved to retain those systems in this standard.

Imperial units of measurement for plaque/hole type IQI based on the ASME series have also been retained because of the impracticability of changing to the International (SI) System of units. The committee proposes to amend the published standard when the American system is changed and new plaque IQI are available for commercial use in Australia.

During preparation of this edition, consideration was given to matters raised at seminars held to discuss the standard. Changes incorporated in this standard are intended to remove any ambiguity which might have existed in the 1979 edition. Known errors have also been eliminated.

Relevant tables and appendices have been updated to align with the new edition of Part I of the standard.

Graphical presentations of readily achievable IQI sensitivity percent have also been included.

Data used in the compilation of the relationships between different types of IQI were taken from a paper by E.L. Criscuolo, 'Radiographic Image Quality Standards'†, and from ASME, SE 142.

This standard may require reference to the following documents:

AS 1929	Non-destructive Testing—Glossary of Terms
AS 2177	Radiography of Welded Butt Joints in Metal Part 1—Methods of Test
SAA MP19	Report on Preferred Numbers and Their Use
DIN 54109	Non-destructive Testing—Image Quality of X-ray and Gamma-ray Radiographs of Metallic Materials, Definitions, Wire Penetrameter
BS 3971	Image Quality Indicators for Radiography and Recommendations for Their Use
AFNOR A04-304	Radiographic Examination of Steel of Thickness up to and including 180 mm
ASME, SE 142	Standard Methods for Controlling Quality of Radiographic Testing
ISO 1027	Radiographic Image Quality Indicators—Principles and Identification
ISO 2504	Radiography of Welds and Viewing Conditions for Films—Utilization and Recommended Patterns of Image Quality Indicators (IQI)

\* International Organization for Standardization (ISO)  
British Standards Institution (BSI)  
Deutsches Institut für Normung (DIN)  
American Society of Mechanical Engineers (ASME)  
Association Française de Normalisation (AFNOR)

† Presented at the Inter-American Conference on Materials Technology, 20-24 May 1968, San Antonio, Texas, and published by ASME in 'Materials Technology—An Inter-American Approach', pp 496-499

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