AS 3545—2004

Australian Standard™

Welding positions

STANDARDS AUSTRALIA

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Australian Industry Group
Bureau of Steel Manufacturers of Australia
New Zealand Engineering Research Association
Welding Technology Institute of Australia

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PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee WD-001, Welding Definitions and Symbols, to supersede AS 3545—1988. 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 define working positions for welding.

This Standard is based on ISO 6947:1990, *Welding—Working positions—Definitions of angles of slope and rotation*, but contains additional information to assist users working with the AWS based alphanumeric system

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An informative appendix is only for information and guidance.

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1 SCOPE

This Standard defines working positions for welding, and makes it possible to locate welds in space with reference to the horizontal reference plane (usually parallel to the workshop floor) by means of angles of slope and rotation, which are independent from surrounding construction.

NOTE: For guidance on alternative position descriptions, see Appendix A.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS
2812 Welding, brazing and cutting of metals—Glossary of terms)

ISO
6947 Welding—Working positions—Definitions of angles of slope and rotation

3 DEFINITIONS

For the purposes of this Standard, the definitions below apply.

3.1 Rotation (*R*)

1 The angle between the centre-line of the weld (that is, the line joining the centres of the weld root and the capping layer) and the positive y-axis or a line parallel to the y-axis, measured in the mathematically positive (that is counter-clockwise) direction in the plane of the transverse cross-section of the weld in question.

2 The viewing direction for the weld cross-section is directed towards the co-ordinate origin, i.e., opposite to the working direction (see Figure 2).

NOTES:

1 In the case of slopes where $S = 90°$ or $S = 270°$ (see Figure 1), it is not necessary to determine the rotation because all angles may occur. Examples of how rotation is determined on symmetrical and asymmetrical butt and fillet welds arc given in Figures 3 to 5.

2 The centre-line usually coincides with the position of the filler material, e.g., covered electrode.

3 For pipes with inclined axes, the rotation is intrinsically expressed by the angle of inclination.

