

Australian Standard™

**Qualification of welders for fusion
welding of steels**

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The following are represented on Committee WD-003:

Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Steel Institute
AUSTROADS
Bureau of Steel Manufacturers of Australia
Electricity Supply Association of Australia
Institution of Engineers Australia
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PREFACE

This Standard was prepared by the Standards Australia's Committee WD-003, Welding of Structures, to supersede AS 2980—1987.

Whilst the 1987 edition generally followed the requirements of the then current edition of AWS D1.1—85, *Structural Welding Code—Steel*, the methods of testing and criteria of acceptance were based on current Australian Standards. This edition gives cognizance to the ISO welder qualifications Standard for steels ISO 9606-1:1994, *Approval testing of Welders—Fusion Welding, Part 1: Steels*, by adopting largely its principles and methodologies; however, due to incompatibilities between the European-based approach of the ISO Standard and the North American basis for many of the Australian and New Zealand welding Standards, it could not be adopted in its entirety.

The key differences and similarities with ISO 9606-1 and this revision of the Standard are as follows:

- (a) Requirements are included for the qualification of welders using mechanized and automatic welding processes for which no equivalent ISO requirements currently exist.
- (b) Requirements for the qualification of welders producing plug welds has been maintained from the previous edition of AS 2980 plus requirements for the oxy-acetylene gas welding process recognized in ISO 9606-1 included.
- (c) ISO 9606-1 does not incorporate allowance for the use of welding consumables whose properties are based on tensile strength, this being the system of classification in use in Australia and New Zealand and many other Pacific Rim countries.
- (d) Reference to the Australian weld testing Standards series AS 2205 has been retained.
- (e) The criteria of acceptance remains based on the current Australian and New Zealand Standards AS/NZS 1554.1 category SP.
- (f) The optional technical knowledge requirements of ISO 9606-1 have been included.
- (g) The requirements for welders to demonstrate maintenance of their qualifications (conformation) have now been included and are consistent with the requirements of the major application Standards used in Australia and New Zealand.
- (h) Requirements have been included for a system of prolongation where welders can demonstrate a higher level of ongoing confirmation than that possible under previous editions of this Standard.

Readers should note that whilst this Standard provides the welder with a broad range of approvals, application Standards may offer the welder a limited approval option, which in some cases may be of some economic benefit to the fabricator.

As drawings in this Standard are complete only to the extent necessary for illustration, reference is to be made to the requirements specified in the text.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this Standard.

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FOREWORD

The ability of a welder to follow verbal or written instructions and verification of a person's skills are important factors in ensuring the quality of the welded product.

The testing of a welder's skill in accordance with this Standard depends on welding techniques and conditions used in which uniform rules are complied with, and standard test pieces are used.

The principle of this Standard is that a qualification test qualifies the welder not only for the conditions used in the test, but also for all joints that are considered easier to weld particularly where the welder has received appropriate training and/or has industrial practice within the range of qualification.

The qualification test may be used to qualify a welding procedure and a welder provided that all the relevant requirements, e.g., test piece dimensions, are satisfied.

Qualifications in accordance with AS 2980 existing at the date of publication of this Standard are to be interpreted in accordance with the requirements of the Standard.

STANDARDS AUSTRALIA

Australian Standard

Qualification of welders for fusion welding of steels

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard defines the qualification test of welders for the welding of steels. It provides a set of technical rules for a systematic qualification test of the welder, and enables such qualifications to be uniformly accepted independently of the type of product, location and examiner/examining body.

When qualifying manual welders, the emphasis is placed on the welder's ability to manually manipulate the electrode/welding torch and thereby to produce a weld of acceptable quality.

This Standard is intended to complement existing Standards such as AS 1796 and AS/NZS 3992 whilst enhancing the requirements for the qualification of welders from the previous edition of AS 2980 in accordance with international expectations. It does not deal with the certification of welders.

NOTE: Certification of welder is covered by AS 1796.

1.2 APPLICATION

The qualification tests prescribed in this Standard are intended to provide a method to qualify welders for the welding of steel structures; however, they may also be suitable for the qualification of welders for other applications by agreement. These tests are not intended to be used as a guide for welding during actual construction. The latter should be performed in accordance with the requirements of a welding procedure specification (WPS) produced for the purpose.

This Standard deals specifically with qualifications for welders using manual or semi-automatic welding equipment and includes requirements for welders using mechanized or fully automatic equipment.

NOTE: Where a welder fails the specified tests, the performance may be used as a basis for measuring the value of further training.

1.3 REFERENCED DOCUMENTS

The documents referred to in this Standard are listed in Appendix A.

1.4 DEFINITIONS

For the purpose of this Standard, the definitions given in AS 2812 and those below apply.

1.4.1 Examiner

Person who has been appointed to verify compliance with the applicable standard.

NOTE: In certain cases, an external independent examiner may be required.

1.4.2 Examining body

Organization that has been appointed to verify compliance with the applicable standard.

NOTE: In certain cases, an external independent examining body may be required.