

Australian Standard™

**Metal finishing—Preparation and
pretreatment of surfaces**

Part 5: Pickling

This Australian Standard was prepared by Committee MT-009, Metal Finishing. It was approved on behalf of the Council of Standards Australia on 23 May 2003 and published on 11 July 2003.

The following are represented on Committee MT-009:

Australian Aluminium Council
Australian Institute of Metal Finishing
Australasian Chamber of Commerce and Industry
Australian Industry Group
Australian Paint Manufacturers Federation
Department of Defence
Galvanizers Association of Australia
Institute of Materials Engineering Australia
The Royal Australian Chemical Institute
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STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 1627.5—2003

**Metal finishing—Preparation and pretreatment of surfaces
Part 5: Pickling**

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Technical Committee MT-009 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

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Galvanizers Association of Australia
Galvanizing Association of New Zealand
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NOTES

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Part 5: Pickling

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PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee MT-009, Metal Finishing, to supersede AS 1627.5—1994, *Metal finishing—Preparation and pretreatment of surfaces, Part 5: Pickling, descaling and oxide removal*. 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.

During the revision of this Standard, the Committee changed the title to *Metal finishing—Preparation and pre-treatment of surfaces, Part: 5 Pickling*.

The objective of this Standard is to revise the technology in the Standard so that it meets the current practices, which are being applied in Australian industry.

This Standard is Part 5 of a series of Standards covering the preparation and pretreatment of metal surfaces used in metal finishing. The series is as follows:

AS

1627		Metal finishing—Preparation and pretreatment of surfaces
1627.0	Part 0:	Method selection guide
1627.1	Part 1:	Removal of oil, grease and related contamination
1627.2	Part 2:	Power tool cleaning
1627.4	Part 4:	Abrasive blast cleaning
1627.5	Part 5:	Pickling
1627.6	Part 6:	Chemical conversion treatment of metals
1627.9	Part 9:	Pictorial surface preparation standards for painting steel surfaces

The terms ‘normative’ and ‘informative’ have been used in this Standard to determine 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.

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FOREWORD

Pickling is the removal of surface oxides (scale) and similar contaminants from a metal by immersion in strong chemical solution, usually an acid. It is used as pre-treatment before processes such as hot dip galvanizing, electroplating, auto catalytic plating and application of conversion coatings. It is also easily adapted to continuous applications, so used for removal of scale from large tonnage objects such as bars, blooms, sheet, strip, wire and tubing.

The surface produced by pickling is generally smooth, and may not be suitable for the application of most heavy duty coatings, e.g. inorganic zinc and high-build epoxy coatings, or for metal spray coatings. Corrosion inhibitors used in rinse solutions to prevent flash rusting of a pickled surface may deposit surface residues, which are incompatible with some coatings. Coating manufacturers or suppliers should be consulted before the application of coating systems to pickled surfaces is carried out.

STANDARDS AUSTRALIA**Australian Standard****Metal finishing—Preparation and pretreatment of surfaces****Part 5: Pickling****SECTION 1 SCOPE AND GENERAL****1.1 SCOPE**

This Standard sets out procedures for preparing metal surfaces by immersion, or by other means, employing chemical solutions to remove oxidation products (scale), corrosion products and related foreign materials.

The Standard includes acid and alkaline descaling for ferrous materials and also includes acid descaling for non-ferrous materials as follows:

- (a) Steels.
- (b) Cast iron.
- (c) Aluminium and aluminium alloys.
- (d) Copper and copper alloys.
- (e) Zinc and zinc alloys.
- (f) Nickel and nickel alloys.

NOTE: Advice and recommendations on information to be supplied by the purchaser at the time of enquiry or order are contained in Appendix A.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

- 1319 Safety signs for the occupational environment
- 1470 Health and safety at work—Principles and practices
- 1627 Metal finishing—Preparation and pretreatment of surfaces
- 1627.1 Part 1: Removal of oil, grease and related contamination
- 1627.2 Part 2: Power tool cleaning
- 1874 Aluminium and aluminium alloys—Ingots and castings
- 4291 Mechanical properties of fasteners made of carbon steel and alloy steel
- 4291.1 Part 1: Bolts, screws and studs

AS/NZS

- 1337 Eye protectors for industrial applications
- 1715 Selection, use and maintenance of respiratory protective devices
- 1716 Respiratory protective devices
- 2161 Occupational protective gloves
- 2161.1 Part 1: Selection use and maintenance