AS 1627.4—1989

Australian Standard®

Metal finishing — Preparation and pretreatment of surfaces

Part 4: Abrasive blast cleaning

This Australian Standard was prepared by Committee MT/9, Metal Finishing. It was approved on behalf of the Council of Standards Australia on 3 January 1989 and published on 10 April 1989.

The following interests are represented on Committee MT/9:

Aluminium Development Council

Australasian Institute of Metal Finishing

Bureau of Steel Manufacturers of Australia

Confederation of Australian Industry

Department of Defence

Metal Trades Industry Association of Australia

Royal Australian Chemical Institute

Society of Automotive Engineers — Australasia

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University of Queensland

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Abrasive Blast Cleaning and Protective Coating Association of New South Wales

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PREFACE

This Standard was prepared by the Standards Australia Committee on Metal Finishing to supersede AS 1627.4–1974, *Code of practice for preparation and pretreatment of metal surfaces prior to protective coating — Abrasive blast cleaning of steel surfaces*. In this edition the technical details have been upgraded and expanded.

This Standard is one in the AS 1627 series of Standards covering the preparation and pretreatment of metal surfaces used in metal finishing. Others in the series are as follows:

1627.0 — *Method selection guide for preparation and pretreatment of steel surfaces.*

1627.1 — *Cleaning using liquid solvents and alkaline solutions.*

1627.2 — *Power tool cleaning.*

1627.3 — *Flame descaling.*

1627.5 — *Pickling steel surfaces.*

1627.6 — *Phosphate treatment of iron and steel surfaces.*

1627.7 — *Hand tool cleaning of metal surfaces.*

1627.8 — *Wash primer pretreatment of metal surfaces.*

1627.9 — *Pictorial surface preparation standards for painting steel surfaces.*

1627.10 — *Cleaning and preparation of metal surfaces using acid solutions (non–immersion).*

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FOREWORD

Abrasive blast cleaning utilizes a stream of abrasive particles directed onto a metal surface to remove millscale, rust, corrosion products, process scales and foreign particles. The abrasive may be propelled by centrifugal force, or carried in an air or water stream.

Abrasive propelled by centrifugal force using impeller wheels in closed recirculating systems is suited to production line work and other specialized applications. Airborne abrasive is projected through a nozzle and is suitable for open field or on-site conditions, enclosed blasting chambers and portable enclosed circulating systems.

The various forms of wet blasting are usually carried out with non-metallic abrasives with a corrosion inhibitor added to the water. The method serves to minimize dust levels. The high velocity of water, with or without abrasive, aids in removal of contaminants such as salts and process fallout, especially so in pitted steel.

There are two general classes of abrasive, metallic and non-metallic. Practitioners should be aware that a general dust hazard exists for all forms of dry abrasive blast cleaning, and that the use of silica abrasives in dry abrasive blast cleaning represents a specific health hazard to blasters and other people close by. Silica abrasives are banned for dry blasting by many statutory authorities, but may be permitted in wet abrasive blast cleaning, subject to the granting of a special licence and strict observance of safety precautions and conditions laid down by the Statutory Authority.

The texture and colour of the blasted surface may vary depending upon the type of abrasive and method used.

The surface roughness or profile achieved depends on several factors. These include metal substrate, blasting process, abrasive type, abrasive velocity at impact (affected by distance between the workface and nozzle, or wheel), and angle of the blast stream to the workface.

Blast-cleaned surfaces may start to rust quickly and should always be coated before any discolouration occurs. The use of inhibitors in wet abrasive blast cleaning can maintain the condition of blasted surfaces.