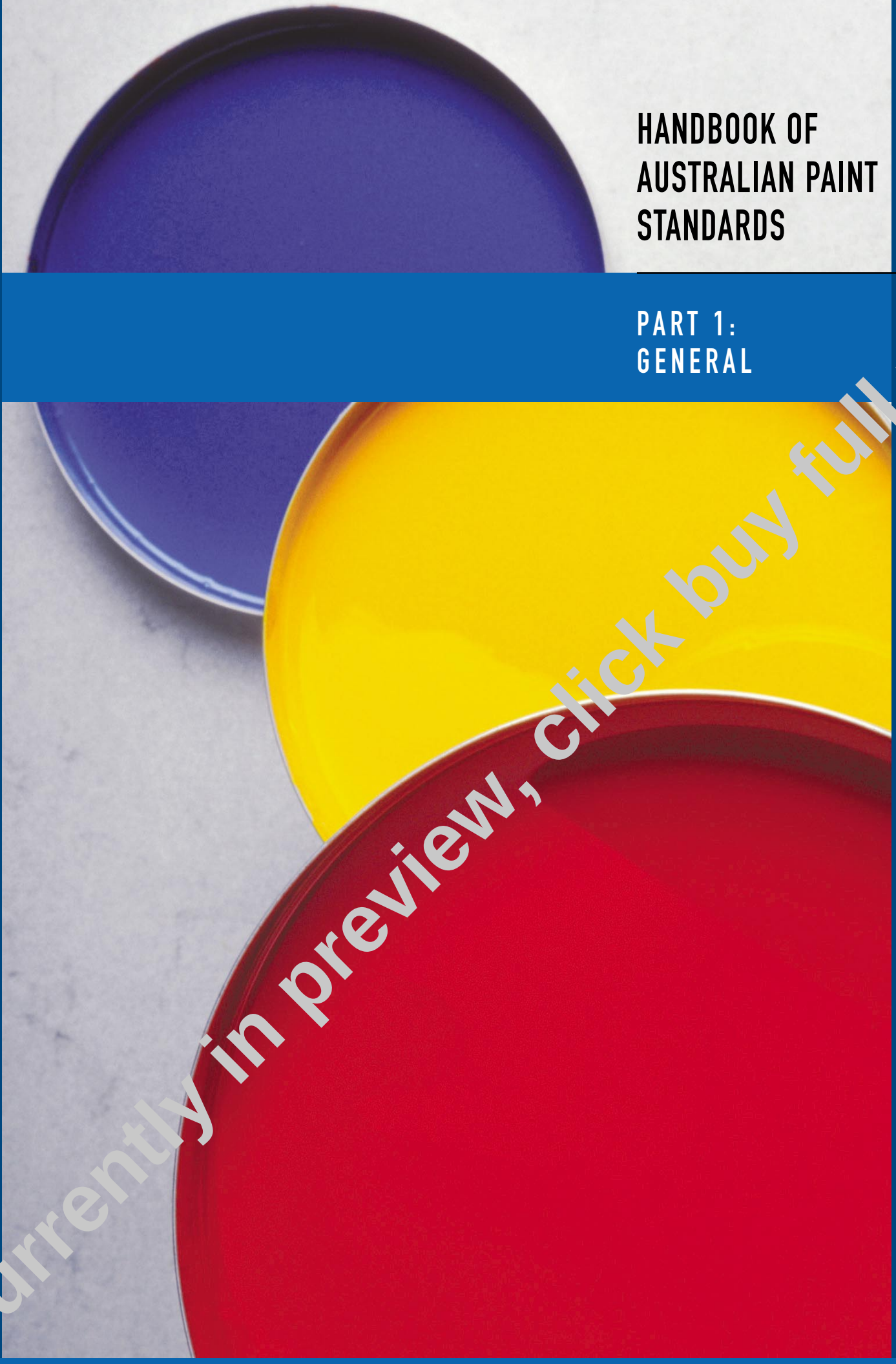
HANDBOOK OF AUSTRALIAN PAINT STANDARDS

PART 1: GENERAL



STANDARDS AUSTRALIA

Handbook

Handbook of Australian Paint Standards

Part 1: General

Originally as HB 73.1—1995.
Second edition 2005.

Published by Standards Australia GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 6413 4

PREFACE

This Handbook was prepared by Standards Australia, to provide practitioners in the paint industry with a compact reference containing most Joint Standards dealing with paints and related materials.

The Handbook, in four convenient volumes, collects together almost 190 Australian and Australian/New Zealand Standards dealing with paint application, paint testing and paint products. The *Handbook of Australian Paint Standards* is divided into a number of parts including:

Part 1: General
Part 2: Test methods
Part 3: Industrial paints
Part 4: Architectural paints

This Part 1 contains AS/NZS 2310, AS/NZS 2311 and AS/NZS 2312. Each of the current Standards has been reproduced and, where necessary, updated to incorporate amendments issued since the original publication of the document.

In Australia the Australian Paint Approval Scheme (APAS) prepares specifications for paints used by both Commonwealth and State Governments. This part of the Handbook provides a listing of APAS specifications that are equivalent to the Paint Reference Numbers identified in AS/NZS 2311 and AS/NZS 2312 respectively. The Numerical Index to APAS specifications has been reproduced with the permission of the APAS.

CONTENTS

Australian/New Zealand Standard™

Glossary of paint and painting terms

Originated as AS 2310—1980.
Previous edition AS/NZS 2310:1995.
Third edition 2002.

Jointly published by Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 4643 8

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee CH-003, Paints and Related Material, to supersede AS/NZS 2310:1995.

Definitions include terms dealing with paint types, paint materials, paint characteristics, paint defects, the application of paints and other relevant aspects of paint technology.

The objective of the Standard is to provide a better understanding of the terminology used in the paint industry, for the use of those involved in the manufacture, supply, purchase and use of paint, and those involved in the writing of Standards for paints and the framing of painting specifications.

During the preparation of this Standard, account was taken of definitions given in ISO 4618:1998, *Paints and varnishes—Terms and definitions for coating materials*, Part 1: *General terms*, Part 2: *Special terms relating to paint characteristics and properties*, Part 3: *Surface preparation and methods of application*, and Part 4: *Terms relating to raw materials*. Terms that are the same as ISO definitions are marked with (*). Terms marked with a dagger (†) indicate accepted Australian definitions, which have been adopted where the ISO definitions were considered inappropriate or less definitive. Terms that are preferred for general usage have been highlighted in bold print. Some alternative terms that are not preferred have also been listed, but are not highlighted in bold print.

It should be pointed out that this Standard does not include many commonly used terms that are not specific to the paint industry. For such words, reference should be made to *The Macquarie Dictionary*.

Appendix A includes a list of all referenced documents.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard
Glossary of paint and painting terms

Terms	Definitions
abrasive blast-cleaning*	The impingement of a high-kinetic-energy stream of a blast cleaning abrasive on the surface to be prepared.
accelerated weathering	The process of evaluating products to obtain information on durability and performance more quickly than by in service testing. NOTE: Examples of accelerated weathering include the use of inclined panels, Tator panels, and artificial weathering.
accelerator	*See* catalyst
acrylic paint	Paint manufactured with acrylic resins as the main binder, which may be of latex or solvent-borne type.
acrylic resin	Synthetic resin resulting from the polymerization or copolymerization of various acrylate or methacrylate monomers, with no more than minor quantities of other monomers.†
activator	*See* catalyst
additive*	Any substance, added in small quantities to a coating material, to improve or modify one or more properties.
adhesion/adhesive strength	The sum total of the forces of attachment between a dry film and its substrate.* NOTES: 1 The substrate may be bare or already painted. 2 Refer to the AS 1580 series of tests for assessment of adhesion.
aeration	Incorporation of bubbles of air in paint during stirring, shaking or application.
ageing*	The irreversible changes in the properties of a film, which occur with the passage of time.* NOTE: For liquid paints, *see also* shelf life.
air drying	The formation of a solid paint film from a liquid paint film under natural ambient conditions.
airless spraying	Application of paint by means of equipment consisting of fluid pump, hose and spray nozzle to produce atomization of the paint without the use of compressed air or other propellant (*see also* spraying). NOTE: Refer to AS 1580.205.4 for assessment of airless spraying properties.

Terms	Definitions
algal growth	A deposit of highly diverse microorganisms that undergo photosynthesis to produce discolouration which may vary from green to brown. NOTE: Refer to AS 1580.481.1.13 for assessment of algal growth
alkyd resin*	Polyester resin resulting from the polycondensation of polyacids and fatty acids (or oils) with polyhydric alcohols. NOTE: For oil-free alkyds, *see* polyester.
alligatoring	*See* crocodiling
aluminium paint	A paint that includes particles or flakes of aluminium, which form a silvery metallic finish.
amino resin*	Synthetic resin resulting from the condensation of melamine or urea or the derivatives such as benzoguanamine with formaldehyde. These resins are often etherified with alcohols.
anodizing*	The treatment of aluminium or another suitable material by an electrolytic oxidation process to produce a coat of oxidized material.
anti-carbonation coating	Coatings applied to concrete and other cement-based substrates to retard their carbonation by atmospheric carbon dioxide.
anti-condensation paint	Paint that is formulated to minimize the effects of condensation of moisture under intermittent dry and humid conditions.
anti-corrosive paint*	A paint used to protect metal substrates against corrosion.
anti-foaming agent*	Additive, that prevents foaming, reduces the foaming tendency or destroys the foam occurring during manufacture and/or application of the coating material.
anti-fouling paint	A paint formulated to prevent the growth of barnacles and other water organisms on hulls of ships or other underwater surfaces.
anti-graffiti paint	A pigmented or clear paint finish applied to a surface either to inhibit its defacement by graffiti by virtue of its impervious or sacrificial nature, or enable the graffiti or the paint film to be readily removed.
anti-mould additive	An additive that inhibits mould growth.
anti-mould solution	A preparation consisting of mildewcides or fungicides, used singly or together in solution, applied to mould-affected surfaces prior to painting. Available as a pre-painting treatment to be washed off or a long-lasting treatment with residual effects that may be overcoated.
antique finish*	A paint system to simulate the appearance of old age.
anti-settling agent*	Additive that prevents or retards the settling of pigments and/or extenders and that maintains a uniform consistency during the storage of the coating material.
anti-skinning agent	An additive that is used to prevent the premature oxidation and formation of an insoluble surface layer when storing of paints containing drying oils before application as a thin film.

Terms	Definitions
application rate* (spreading rate)	The quantity of a coating material that is required to produce, under defined working conditions, a dry film of a given thickness on unit area (e.g., L/m^2 or kg/m^2).
approximate colour match	When a test sample is separated from a reference sample by 20 mm and is viewed under specified conditions, a small colour difference can be seen. However, the colour difference is undetectable when the separation distance is increased to 100 mm. Metamerism may or may not be present. NOTE: Refer to AS 1580.601.1 for assessment of colour matching.
artificial weathering	The testing of coatings in which ageing is induced by exposure to simulated conditions such as ultraviolet radiation or moisture (*see* ageing).
bagging	Application of a thin layer of cement-based coating by wiping with hessian or similar material, usually to brickwork or concrete to provide a characteristic uneven, textured finish.
baking*	*See* stoving
barrier coat	1 A type of sealer used to isolate paint from the underlying surface to prevent chemical or physical interaction between them. 2 For industrial coatings, a coating designed to isolate the substrate from the environment.
Bénard cells	A surface phenomenon occurring during the drying of a paint film characterized by the formation of hexagon-shaped cells. The edges of the cells may show differential colour effects due to pigment flotation. NOTE: The mechanism of cell formation has been attributed to vortex action in the film induced by rapid solvent evaporation.
binder*	The non-volatile part of the medium that forms the film.
biocide	Additive intended to prevent attack by any harmful organism in a coating material or the film thereof.
bituminous paint	A black or dark-coloured paint formulated with bitumen as the binder.
bitty film	A film containing bits of skin, gel, flocculated material or foreign particles, which project above the surface of the film.
black japan	A black bitumen-based coating used in earlier times for the decorative painting of timber coating and ironwork.
blast-cleaning abrasive*	A solid material intended to be used for abrasive blast-cleaning.
bleeding*	The process of diffusion of a coloured substance into and through a film from beneath, thus producing an undesirable staining or colour change.
blistering*	The convex deformation in the film, arising from local detachment of one or more of the constituent coats.

Terms	Definitions
blocking*	The unwanted adhesion between two painted surfaces, one of which at least has been coated, when the articles are left in contact under load after a given drying period.
blocking resistance	The ability of a coating to resist blocking.
blooming	The formation of a thin film on top of a paint film thereby reducing the lustre or veiling its depth of colour.†
blowing	*See* popping
blushing	The formation of milky opalescence in clear finishes caused by the deposition of moisture from the atmosphere or the precipitation of one or more of the solid constituents of the finish.†
body	*See* consistency
bodying	The increase of consistency of a paint.
boxing	Mixing paint by repeated pouring of the contents of two or more containers from one container to another.
breathing	The passage of vapour through a paint film without the paint film exhibiting blistering, cracking or peeling.
bridging	The separation of a paint film from the substrate at internal corners or other depressions due to shrinkage of the film or the formation of a paint film over a depression or crack.
brightness	The attribute of a visual sensation according to which an area appears to emit or reflect more or less light.
bronzing	The formation in a paint film of a characteristic red or yellow metallic lustre that is visible only at certain angles of illumination.†
brushability	The ease with which a paint can be uniformly applied with a paintbrush. NOTE: Refer to AS 1580.205.1 for assessment of brushing properties.
brush blasting	*See* whip blasting
brush marks	Lines of unevenness, which remain in the dried paint film after brush application.
bubbling*	The formation of temporary or permanent bubbles in the applied film.
build	Thickness of dried paint film.
burning-off	The removal of a coating by a process in which the film is softened by heat and then scraped off while still soft.
burnishing	1 Shiny or lustrous spots on a paint surface caused by rubbing the painted surface. 2 The polished or glossy appearance of a metal surface produced by mechanical action, such as the use of a power wire brush.
caking	Hard settling (*see also* settling).
carbonation	The reaction of atmospheric CO_2 with alkaline materials such as cement, lime and plaster.

Terms	Definitions
catalyst	A substance whose presence increases the rate of a chemical reaction. In some cases the catalyst functions by being consumed and regenerated; in other cases the catalyst seems not to enter the reaction and functions by surface characteristics of some kind. A negative catalyst (inhibitor) slows down a chemical reaction.
cement-based paint	A dry powder formulated with inorganic cement and other materials, mixed with water just before use.
chalking*	The appearance of a loosely adherent fine powder on the surface of a film arising from the degradation of one or more of its constituents.* NOTE: Refer to AS 1580.481.1.11 for assessment of chalking.
checking	Breaks in the surface of a paint film, which do not render the underlying surface visible when the film is viewed at a magnification of 10 × (*see also* crazing). NOTE: Refer to AS 1580.481.1.7 for assessment of checking.
crows-foot type	Checking in which the breaks are in a series of three-pronged formations in which the prongs radiate from a point with an angle of approximately 120 degrees between prongs.
irregular pattern type	Checking in which the breaks are in no definite pattern.
line type	Checking in which the breaks are, in general, in parallel lines.
cheesy	The rather soft and mechanically weak condition of a dry-to-touch film but not a fully cured film.
chemical pre-treatment*	General term for any chemical process applied to a surface prior to the application of a coating material (*see also* chromating and phosphating).
chipping*	The removal, in flakes, of paint. or rust and mill scale, by use of hand or power tools.
chlorinated rubber*	Polymeric material resulting from the action of chlorine on natural or synthetic rubber.
chromating*	The chemical pre-treatment of the surface of certain metals using solutions usually consisting essentially of chromic acid and/or chromates.
chromaticity	The property of a colour stimulus (involving the attributes of hue and saturation but not lightness), which may be defined by coordinates on a plane diagram in the CIE trichromatic system.
cissing	A defect caused by the contraction of a wet paint film from a surface leaving small circular areas uncoated or of low film build† (*see also* crawling).
class of blast	Cleanliness of steel stubstrate series of Standards. NOTE: Refer to AS 1627 series of Standards.

Terms	Definitions
coat	A continuous layer of a coating material resulting from a single application.
coating system*	The sum total of the coats of a coating materials that are to be applied in a pre-determined order or which have been applied to a substrate.
coal tar	The refined liquid or solid distillation product of coke oven operations; also known as coal tar pitch.
coalescing agent	Additive to a coating material based on a polymer dispersion to facilitate film formation by the temporary softening of the polymer particles.
cobwebbing	The formation of fine filaments of partly dried paint during the spray application of a fast drying paint.
cohesion	The forces that bind the constituents of a film into a whole. NOTE: Cohesion should not be confused with adhesion.
cold cracking*	The formation of cracks in the film resulting from exposure to low temperatures.
cold curing	Chemical hardening without the application of heat.
colour*	The sensation resulting from the visual perception of radiation of a given spectral compensation.
colorant	A pigment concentrate that can be added to paints to make a range of colours.
colour change	Any change in the colour of the film other than that due to chalking or dirt collection. NOTE: Refer to AS 1580.481.1.12 for assessment of colour change.
colour rendering	A general expression for the effect of a light source on the colour appearance of objects in comparison with their colour appearance under a reference light source.
colourfast	Resistant to changes in colour.
commercial match (*deprecated*)	*See* approximate colour match.
compatibility (of products)	The ability of a product to mix with another without causing undesirable effects such as precipitation, coagulation and thickening.*
compatibility* (of a paint with the substrate)	1 *Materials* The ability of two or more materials to be mixed together without causing undersirable effects. 2 *Coating material with the substrate* The ability of a coating material to be applied to a substrate without causing undesirable effects.
component	The term used to describe two or more parts, which, when mixed together in the proportions recommended, form the paint.
consistency	The flow properties of a material measured in an empirical manner, typically by its resistance to a shear force. NOTE: Refer to the AS 1580.214 series for assessment of consistency.

Terms	Definitions
contrast ratio	An instrumental measure of the ability of a coat of paint to hide contrasts in colour of the underlying surface. NOTE: Refer to AS 1580.213.2 for assessment of contrast ratio.
conventional spraying	A method of spraying using compressed air to atomize the paint and to direct it on to the substrate to be coated. NOTE: Refer to AS 1580.205.2 for assessment of conventional spraying properties.
corrosion (of substrate)	Degradation of a metallic surface under a paint system that is subjected to weathering or immersion. In some circumstances, the presence of corrosion may readily be detected by the appearance of blistering or visible corrosion products at the surface of the test film, otherwise the paint system will first need to be carefully removed. Types of corrosion are as follows: (a) *Rusting (ferrous corrosion)* The formation of brown or black ferrous oxidation products on iron or steel substrates, which may be accompanied by brown or red discolouration of the paint film. (b) *Filiform corrosion* A series of threadlike lines, typically 0.1 to 0.5 mm wide, that appear under paint films, which occur on a wide variety of metals, but only occur on steel in air of high relative humidity, e.g., 65–95 percent RH. NOTE: Filiform corrosion is sometimes called underfilm corrosion. At 100% RH, the threads broaden to form blisters in the paint film. Causes of the corrosion are varied, with the most common being porosity, pinholing and localized damage of the paint film. (c) *Non-ferrous corrosion* Degradation of non-ferrous metal substrates such as aluminium or zinc, which is evidenced by the presence of corrosion products or pitting of the metal substrate, and may be accompanied by blistering or flaking of the paint film due to the presence of a voluminous corrosion product. NOTE: Refer to AS 1580.481.3 for assessment of substrate corrosion. (d) *Pitting corrosion* Localized corrosion of the substrate which may lead to perforation in severe circumstances. (e) *Undercut corrosion* Progression of corrosion under the paint film away from a scribed line or a sheared edge. (f) *Uniform corrosion* Even degradation of the metal substrate over the whole surface of the test panel.
covering power	*See* opacity
coverage	*See* application rate
cracking	Formation of breaks in a paint film, which expose its substrate.
crows-foot type	Cracking in which the breaks are in a series of three-pronged formations in which the prongs radiate from a point with an angle of approximately 120 degrees between prongs.
irregular pattern type	Cracking in which the breaks are in no definite pattern.

Terms	Definitions
line type	Cracking in which the breaks are, in general, in parallel lines.
sigmoid type	Cracking in which the breaks are in relatively large curves that meet or intersect. NOTE: Refer to AS 1580.481.1.8 for assessment of cracking.
cratering*	The formation in the film of small circular depressions that persist after drying. NOTE: Not to be confused with cissing in which the underlying substrate is exposed.
crawling	An extreme form of cissing.
crazing	The formation of minute criss-cross cracks on the surface of a paint film.† NOTE: Crazing resembles 'checking' but the cracks are deeper and broader and exhibit a polygonal pattern resembling crazy paving.
crinkling	*See* wrinkling
critical pigment volume concentration (cpvc)*	The particular value of the pigment volume concentration for which the voids, between the solid particles that are nominally touching, are just filled with binder and beyond which certain properties are markedly changed.
crocodiling	The formation of criss-cross cracks and checks in a paint film, which resemble the hide of a crocodile.†
crosslinking	Applied to polymer molecules, the setting up of chemical links between the molecular chains to form a three-dimensional or network polymer, generally by covalent bonding. When extensive, as in most thermosetting resins, crosslinking makes one infusible molecule of all the linked chains. Crosslinking generally toughens and stiffens coatings and makes them insoluble.
crosslinking agent	A substance that will react chemically with polymeric material, giving rise to a three-dimensional network that is substantially insoluble in common solvents.
curing	The process of condensation or polymerization of paint by heat, radiation or chemical means, resulting in the full development of desirable properties.
curtain coating*	The application of a coating material by passing the article to be coated horizontally through a descending sheet of a continuously recirculated coating material.
curtaining	*See* sagging
curtain spraying	The technique of passing objects to be coated through a curtain of sprayed paint.
cutting-in	Careful painting of an edge, such as the wall colour at the ceiling line or at the edge of woodwork, to avoid spreading onto an adjacent area.
defect	A failure of a coating system to achieve one or more of its intended functions.

Terms	Definitions
degreasing*	The removal from a surface, prior to painting, of oil, greases and similar substances by suitable means, either of an organic solvent or a water-based cleaning agent.
de-nibbing*	The removal of small particles that stand proud of the surface of a paint film.
de-scaling*	The removal of mill scale or laminated rust from steel or other ferrous substrates.
DFT	*See* dry film thickness
dilatancy	The property of a paint or pigment paste that is manifested as a thickening or solidification on application of a shearing force.
diluent	A volatile liquid, single or blended, which, while not a solvent, may be used in conjunction with the solvent without causing any deleterious effects (*see also* reactive diluent).*
dipping	Application of a coating material by immersing the object to be coated in a bath containing a coating material and then after the withdrawal allowing it to drain.
dirt pick-up*	The tendency of a dry film to attract to the surface appreciable amounts of soiling material.
dirt retention	The tendency of a dry film to retain on the surface soiling material that cannot be removed by simple cleaning.
discolouration	Any change in the colour exhibited by a paint film as a result of exposure, including that due to chalking, dirt collection and biological organisms such as mould.
dispersing agent*/dispersant	Additive that facilitates the dispersion of solids in the medium and that increases the stability of the mixture.
distemper	An interior waterborne coating material in which the solid pigment is bound predominantly with natural glue.
doctor blade	A flat bar or similar tool, which is drawn over a surface to evenly spread wet paint at a uniform thickness.
drag	The resistance encountered when paint is spread by contact application methods.
drier*	A compound, usually a metallic soap, that is added to products drying by oxidation in order to accelerate this process. NOTE: Water-dispersible driers also exist.
drop-on beads	Glass beads of the appropriate size having retroreflective properties and intended for application to a wet film paint.
dry to handle	A state during the drying or curing process when the paint film has hardened sufficiently for the object to be moved carefully without marring the film.
dry to sand	A state during the drying or curing process when the paint film can be sanded to remove imperfections without sticking or clogging of the abrasive paper or tearing of the film.

Terms	Definitions
drying*	The sum total of the processes by which a film passes from the liquid to the solid state.
drying oil	An oil, usually of vegetable origin, having the property of hardening by oxidation to a tough film, when exposed to air (*see also* semi-drying oil). NOTE: The most common example is linseed oil.
dry to recoat	The stage during the drying or curing process when the next coat can be applied without deleterious effects.
dry spray	A rough, powdery, non-coherent film produced when atomized paint dries before reaching the surface.
dry film thickness (DFT)	The thickness of the applied surface coating(s) after the curing or drying time has elapsed.
durability	The degree to which films of paint and paint materials withstand the destructive effect of the service conditions to which they are subjected.
dust free	A stage during the drying or curing process when particles of fine dust that settle on the surface do not stick to the paint film.
dye stuff*	A natural or synthetic substance which imparts the requisite colour to the coating material in which it is dissolved. NOTE: These are typically found in wood stains.
efflorescence	A deposit of salts, which remains on a surface after diffusion of the salt solution through the substrate and the evaporation of water.
egg shell	*See* low-gloss
electro deposition	The process whereby a film of a water-based coating material is deposited, under the influence of electric current, on an object that forms either the anode or cathode, depending on the nature of the coating material.
electro beam curing	A process for the rapid curing of specially formulated coating materials by means of a concentrated stream of electrons.
electrostatic spraying	A method of application by which an electrostatic potential difference is applied between the article to be coated and the atomized coating material particles.
emulsion	*See* latex
enamel paint	1 Paint consisting of pigments, extenders, alkyd or modified alkyd blend in a hydrocarbon blended solvent. 2 Pigmented organic polymeric binders that simulate the appearance, flow, smoothness and gloss of fused inorganic coatings.
epoxy ester*	Synthetic resin resulting from the reaction between an epoxy resin and fatty acids or drying oils.
epoxy resin*	Synthetic resin containing epoxy groups generally prepared from epichlorohydrin and a bisphenol.

Terms	Definitions
erosion	1 Attrition of the paint film by natural weathering, which may expose the substrate. 2 Attrition of the paint film by physico-chemical action, such as ultraviolet (UV) radiation or water, or by mechanical means such as windborne particles, which may render the underlying surface or substrate visible. NOTE: Refer to AS 1580.481.1.6 for assessment of erosion.
etching*	Cleaning and roughening a surface using a chemical agent, prior to painting, in order to increase adhesion.
etch-primer	A primer that chemically etches the substrate to promote adhesion of the subsequent coats.
extender	A substance in powder form, which is practically insoluble in media, usually white or slightly coloured, having a refractive index usually less than 1.7, which is used to modify or influence some of its physical or chemical properties other than colour or opacity. NOTE: Examples of the use of extenders occur where a modification of gloss or viscosity properties is required.
exudation*	The emergence, on the surface of a film, of one or more of the liquid constituents.
fading	The loss of colour of one or more of the colour pigments within the film of a coating material.
false body	The development of thixotropy, which has unintended effects on application.
fat edge, fatty edge	Accumulation of paint caused by defective brushing across the edge of a painted surface.
feather edging	The tapering of the edge of a film of paint by laying off with a comparatively dry brush.
feathering, feather sanding	The tapering of the edge of a dried paint film with abrasive paper.
filiform corrosion	*See* corrosion, filiform
filler*	A preparation of pastelike consistency, which is applied to eliminate minor surface defects and/or to produce a smooth, even surface prior to painting (*see also* stopper). NOTE: The term filler is also used synonymously with extender.
filling*	The application of a filler to give a level surface.
film*	A continuous layer resulting from the application of one or more coats to a substrate.
fineness of grind	The reading, in micrometres, obtained on a standard gauge under specified conditions of test indicating the depth of the gauge at which discrete solid particles in the product are first readily discernible. NOTE: It is a means of determining the maximum particle size of pigment extender in the liquid medium (refer to AS 1580.204.1).
finish coat, finishing*	The final coat of a coating system.

Terms	Definitions
fire-retardant (or intumescent) paint	A paint that significantly reduces the rate of flame spread on a surface or delays ignition of the paint film or substrate at high temperature. NOTE: Most fire retardant paints are intumescent paints.
fish eyes*	The presence of craters in a coat each having a small particle of impurity in the centre.
flaking	The complete detachment of pieces of paint film from the underlying surface or substrate.
flat (finish**)**	A surface with a specular gloss reading not greater than 5 gloss units when the specular direction is 60 degrees (*see also* low-gloss, semi-gloss and full gloss).
flame cleaning*	The process by which a reducing flame is applied to a surface, followed by manual or mechanical cleaning operations.
flame treatment*	A method of pre-treatment, by a flame, where the surface of a plastics material (e.g., polyethylene) is oxidized, to improve the wetting properties of the coating material and the adhesion of the coating, or even to render these possible.
flash-off time*	The time necessary between the application of successive coats wet-on-wet or the time for the evaporation of most of the volatile matter before stoving or curing by radiation.
flash rust*	The rapid formation of— (a) a very thin layer of rust on ferrous substrates after blast-cleaning; or (b) rust stains after the application of a water-based coating material on a ferrous substrate.
flatting-down	Rubbing down a painted surface with fine abrasives, to produce a smooth dull finish.
flatting agent	An additive designed to reduce the specular gloss level of a coating material.
flexibility*	The ability of a dried film to follow without damage the deformations of the substrate to which it is applied.
floating/flotation*	The separation of one or more pigments from a coloured coating material containing mixtures of different pigments, causing streaks or areas on the surface of the coating material.
flocculation*	The formation of loosely coherent pigment agglomerates in a coating material.
flooding*	The separation of pigment particles in a coating material giving rise to a colour, which, although uniform over the whole surface, is markedly different from that of the freshly applied wet film. NOTE: An extreme form of floating.
flow	The ability of a paint to spread to a uniform thickness after application.

Terms	Definitions
flow agent/flow control agent*	Additive that improves the flow properties of a coating material.
flow (flood) coating*	The application of a coating material either by pouring or by allowing it to flow over the object to be coated, and allowing the excess to drain off.
fluorescence	The property exhibited by certain substances whereby light is absorbed at one wavelength band of the invisible spectrum and this energy is then re-emitted as a band of light at other frequencies in the visible spectrum.
fly-off (flying)	*See* spatter
force drying	A process in which the drying of a coating material is accelerated by exposing it to a temperature higher than ambient, but below that normally used for stoving materials.
french polish	A material composed essentially of shellac and methylated spirit applied in multiple applications to enhance interior timber, notably furniture. It is applied with a fabric-covered pad.
frying	Wrinkling and crazing caused by the interaction of the solvent component of a topcoat that has been applied either to an insufficientlycured previous coating or one that is incompatible with the topcoat.
full-gloss (finish)	A surface with a specular gloss reading above 85 gloss units when the specular direction is 60 degrees.
full coat	A paint coating that has been applied in accordance with the manufacturer's recommended wet film thickness.
fungicidal paint	A coating material that discourages the growth of surface moulds on the dry film. This property is normally conferred by the use of special additives, although certain pigments may themselves contribute to the fungicidal property of the paint.
fungal growth	The appearance of non-photosynthesizing microorganisms consisting of spores, hyphae, or both, which may be characterized by filamented branched structures.
gassing*	The formation of gas during storage of a coating material.
gas checking frosting (*deprecated*)	A translucent, finely wrinkled surface effect on the film of a coating material, which occurs during drying particularly when the film is exposed to the fumes that arise from combustion of fuel in a gas oven.
gelling	1 The deterioration of a coating material by irreversible change, partial or complete, to an insoluble gel unworkable even by the addition of solvent. NOTE: This is often termed livering, in the early stages of deterioration. 2 The reversible formation, usually intentional, of a gel-like condition that reverts to a useable state by the application of forces such as stirring or brushing. NOTE: See also thixotropy.

Terms	Definitions
glaze	A translucent or transparent coating usually applied over a previous finish, to seal, enrich or modify the appearance.
glaze coat	A translucent or transparent coating material, sometimes coloured, applied thinly with the object of sealing or enhancing, but not obscuring, the ground coat.
gloss	The optical property of a surface, characterized by its ability to reflect light specularly.*
gloss (finish)	A surface with a specular gloss reading above 50 gloss units but not exceeding 85 gloss units when the specular direction is 60 degrees (*see also* flat, low-gloss, semi-gloss and full-gloss).
gold size	An oleo-resinous varnish used in two forms— (a) a composition that dries rapidly to a tacky condition and hardens slowly, used as an adhesive for fixing gold leaf to a substrate; or (b) a composition, containing a high proportion of driers, that rapidly dries hard after application, used in the preparation of stoppers and fillers.
graining	The simulation of wood grain by the application of coating materials.
grain raising	The swelling and standing-up of wood fibre resulting from the absorption of water or solvent(s).
grinning through	The effect observed when a paint does not totally obscure the underlying surface.
grit blasting*	A process of abrasive blast-cleaning using particulate material such as iron, steel slag or alumina (corundum).
ground coat	A coating material with good hiding power, which is applied before a glaze coat or a scumble.
hair cracks	Very fine superficial cracks.
hammer finish (tone)	A finish similar in appearance to hammered metal obtained from specially formulated paints.
hard dry condition (time)	The stage reached during a drying or curing process when a paint film has sufficient strength to withstand mechanical damage. NOTE: Refer to AS 1580.401.6 for assessment of hard dry condition.
hardener*	One component of a multi-component system, which together by chemical reaction, form the film having the desired properties.
hardness (of a film)*	The ability of a dried film to resist indentation or penetration of a solid object.

Terms	Definitions
hazardous paint	A dry paint containing ingredients that have the potential to create human health risk, toxic workplace atmospheres, hazardous wastes and pollution if disturbed or eroded. NOTE: Toxic ingredients of paints can include lead, chromates, arsenic, cadmium, asbestos, and coal tar derivatives such as phenols or polycyclic aromatic hydrocarbons.
heat-resistant paint	A coating material that retains its specified properties at temperatures above 120°C. NOTE: The term is used in a comparative sense but is of little value unless it is referred to some standard of performance under specified conditions.
heritage paint	Paint, either coloured or with texture of pattern, that reflects the appearance of those earlier times of an actual formula of an earlier composition.
hiding power*	The ability of a coating material to obliterate the colour or the colour difference of a substrate.
high build coating (paint)	A paint that enables the application in one coat of a thick film of paint greater than 100 μm.
high-gloss	*See* full gloss
holding primer	*See* shop primer
holiday	A localized defect, characterized by a coating having areas of very low or zero coating thickness.
hot spraying	The spraying of a coating material that has been reduced in viscosity by heating rather than by addition of solvents.
hue	The attribute of colour perception by means of which an object is judged to be red, green, yellow, blue or intermediate between some adjacent pair of these NOTE: Black, white and neutral grey have no hue.
hungry (surface)	A surface that is highly absorbent of paint.
impact resistance	The ability of the film of a coating material to resist a sudden blow without cracking or flaking. NOTE: Refer to AS/NZS 1580.406.1.
impingement/impinging	The action of blast cleaning that causes or places (impinges) the profile on to the surface of the steel (can also mean a foreign body or particle embedded in the coating or substrate).
incorporation	The thorough mixing of a paint to ensure that no layering or sediment remains.
induction period	The period of time, recommended by the manufacturer, after mixing, which multipack product must be allowed to sit prior to the use of the product.
inhibitor	A material used in small proportion, to slow a chemical reaction.

Terms	Definitions
intumescent paint	A paint that, when heated by a flame, swells into a crust that insulates the substrate and retards substrate ignition (*see also* fire-retardant paint).
isocyanate resin*	Synthetic resin containing free or blocked isocyanate groups based on aromatic, aliphatic or cyclo-aliphatic isocyanates. NOTE: Isocyanates, either as monomers or more commonly as polymers, adducts or prepolymers, are used in conjunction with moisture or compounds containing reactive hydroxyl groups in the formation of polyurethane coatings.
joint tape	A special tape used over joints to provide reinforcement or to conceal the joint for painting.
kalsomine	A dry powder from which paint is made by mixing with water. Consists essentially of calcium carbonate or clay and glue or casein (*see also* distemper).
key	Any special quality, such as roughness of the substrate, which assists adhesion of a paint film to a substrate.
knotting compound	A quick-drying composition used to paint knots or other resinous areas to prevent bleeding of resin through subsequent finish coats.
lacquer	A fast-drying clear or pigmented coating that dries solely by evaporation of solvent.
ladder (paint)	A pattern due to a miss in laying-off (*see also* laying-off).
lap	That part of a freshly applied coat which overlaps and blends with a previously applied coat that has not reached the hard dry condition (*see also* wet edge).
lapping defect	Defect characterized by obtrusive joins at the extremities of areas of the substrate painted at different times during the same day's painting schedule.
latex*	Stable dispersions of microscopic, insoluble resin particles in water. (*Synonymous with* emulsion.)
laying-off	The final light strokes of a brush on a paint film which has been spread so as to even and smooth the film as much as possible.
lead paint	A dry paint film containing more than 1.0% lead by weight. NOTE: Refer to AS 4361.1 and AS 4361.2.
leafing	The orientation of particles of flaky pigments, to form a continuous sheet at the surface of the film.
levelling	The flowing-out of a paint film after application so as to produce a level surface.
life, of coating	The period of time during which a paint film continues to serve the purpose for which it was intended.
lifting	The softening, swelling or separation from the substrate, of a dry film resulting from the application of a subsequent coat or chemicals used as solvents.
light bodied	A paint of low consistency.

Terms	Definitions
livering	1 Early stage of gelling. 2 Thickening of a paint material caused by a chemical reaction between the pigment and binder.
low sheen	*See* low-gloss
low temperature coalescence	The ability of a latex paint coating to form a continuous film when dried at low temperatures typically less than 10°C. NOTE: Refer to AS 1580.409.2 for assessment.
low-gloss (finish)	A surface with a specular gloss reading above 5 gloss units but not exceeding 20 gloss units when the specular direction is 60 degrees.
luminance factor	The ratio of the luminance of a reflecting surface in a given direction to that of an ideal white diffusing surface when viewed in the same direction and when illuminated in the same way.
luminosity	*See* brightness
luminous fractional reflectance	The ratio of the luminous flux reflected from, to that incident on, a specimen for specified angles.
lustreless	A surface finish practically free from gloss or side sheen. Usually defined as having less than 5 percent reflectance when viewed at 15 degrees to the surface.
marbling	1 A specialized decorative paint effect creating a finish resembling the appearance of marble. 2 The imitation of the appearance of polished marble by the skilful use of suitable tools and coating materials.
marine varnish	Varnish specially formulated for either intermittent immersion in water or exposure to marine atmospheres.
masking	A temporary covering of that part of a surface which is to remain unpainted.
masking-tape	A strip of paper or cloth similar to adhesive tape which can be used to temporarily cover areas not to be painted and then easily removed.
mastic	A heavy-bodied paste-like material often applied with a trowel to produce a thick protective film.
matting agent*	A product incorporated in a coating material to reduce the gloss of the dry film.
matt(e)	*See* flat
medium*	The sum total of the constituents of the liquid phase of a coating material.
membrane	A high or ultra-high-build coating usually intended to provide a moisture or vapour barrier, or to mask imperfections in the substrate.
metallic finish	*See* aluminium paint *and* polychromatic finish.

Terms	Definitions
metamerism	The phenomenon exhibited by two surfaces, which appear to be the same colour when viewed under one light source (e.g., daylight) but which do not match when viewed under a different light source (e.g., incandescent lamp).
micaceous iron oxide (MIO)	A grey lamellar pigment used as a major component of paint, which enhances the weathering and corrosion resistance of the paint.
mill scale*	The layer of iron oxides that are formed during the hot rolling of steel.
mineral turpentine	A blend of aliphatic and aromatic hydrocarbons commonly used as a thinner for alkyd paints and coatings.
miss	An application defect characterized by the complete absence of a film in certain areas.†
mist coat	A thin coat of paint, applied by spraying, not intended to form a protective film but to enhance the performance of subsequent coats.
moisture curing	A process by which a film of a coating material hardens upon exposure to atmospheric moisture.
mould growth	The presence of dark brown to black spots on a paint film resulting from microbiological action of moulds, fungus or algae. These microbiological activities may also cause discolouration of the paint system.
mudcracking	1 Visible, irregular cracking or checking in thick films of paint caused by shrinkage tension during drying. NOTE: Refer to AS 1580.409.1 for assessment of mudcracking. 2 The formation of deep cracks during drying, occurring primarily with highly pigmented paints applied in thick layers on porous substrates.
multi-pack product	1 A product, the materials for which are supplied in separate parts, which must be mixed in the proportions laid down by the manufacturer.* 2 A coating material that is supplied in two or more separate components, which have to be mixed before use in the proportions laid down by the manufacturer.
nap	The length of fibres on a paint roller cover (*see also* roller).
natural resin	Resin of vegetable or animal origin.
natural turpentine	A solvent obtained by distilling the oleo-resin of pine trees, which is capable of being used as a solvent and thinner for paint. It is also called vegetable turpentine and wood turpentine.
neutral background	A background having a colour (usually pale) and appearance (usually flat) that do not contribute significant bias to the visual assessment of a coated test panel. NOTE: Although a grey colour, e.g., N35, light-grey, from AS 2700, is normally regarded as the neutral colour. Other colours may be designated as acceptable for particular situations.

Terms	Definitions
nibs	Small pieces of foreign material, such as pieces of skin or coagulated medium, which project above the surface of an applied film.
Newtonian liquid	A liquid whose viscosity remains constant at constant temperature, irrespective of the rate of shear.
nitrocellulose	A synthetic resin prepared by nitration of purified cellulose, cotton linters or wood pulp.
no-pickup time	The minimum drying period after which the paint is not picked up by a rubber-faced roller; usually applies to road-marking paints. NOTE: Refer to AS/NZS 1580.401.8.
non-drying oil	An oil that undergoes little or no oxidation when exposed to air and therefore has no dry film-forming properties (*see also* drying *and* semi-drying oils). NOTE: An example of a non-drying oil is castor oil.
non-volatile content by mass	The mass remaining after the removal of volatiles, expressed as a percentage of the total mass under specified conditions. NOTE: Refer to AS 1580.301.1 for assessment.
non-volatile content by volume	Non-volatile content of a paint, expressed as a percentage of the total volume under specified conditions. NOTE: Refer to AS 1580.301.2 for assessment.
non-volatile matter	1 The residue remaining after the removal of volatiles.† 2 The residue obtained after evaporation under specified conditions of test.
oil length	The ratio of oil to resin in a binder. The oil length may be expressed in terms of parts by mass of oil to one part by mass of resin, or in percentage terms.
oil stains	Stains containing drying oils, oleo-resinous varnishes or alkyd resins.
oleo-resinous	Generally refers to varnishes composed of vegetable drying oils in conjunction with hard resins, which may be either natural or synthetic.
opacity	The ability of a paint to obliterate the colour difference of a substrate.
orange peel	1 A surface property, usually considered a defect, giving the dimpled appearance of an orange skin to a sprayed film. 2 An effect resembling the texture of the surface of an orange.
organosol	A dispersion of finely divided resin particles in an organic liquid, which may be wholly or partially volatile.
overspray	The sprayed coating material that does not impinge on the surface to be coated.

Terms	Definitions
paint	1 A product in liquid form, which, when applied to a surface, forms a dry film having protective, decorative or other specific technical properties.† NOTE: Differs from the ISO definition, which includes powder coatings but excludes non-opaque films. 2 A pigmented coating material, in liquid, paste or powder form, which, when applied to a substrate, forms an opaque film having protective, decorative and specific technical properties.
paint or varnish system	The sum of the various coats of paint or varnish which are to be applied to, or which have been applied to, a substrate.*
paint remover	A compound that softens paint or varnish and permits the softened material to be scraped off, or hosed off with water.
peeling	1 Localized loss of adhesion between the surface film and underlying components of a paint system without complete detachment of loose fragments of the film.† 2 The spontaneous detachment from the substrate of areas of the film due to a loss of adhesion.
phenolic resin*	Synthetic resin resulting from the polycondensation of aldehydes, in particular formaldehyde, with phenol, its homologues or derivatives.
phosphating	The treatment of metal surfaces by chemical solutions containing metal phosphates and phosphoric acid as the main ingredients, to form an adherent corrosion-inhibiting layer that serves as a good base for paint.
pickling	The removal of rust and mill scale from ferrous substrates by means of an acid solution usually containing an inhibitor.
pigment*	A substance, generally in the form of fine particles, that is practically insoluble in media and which is used because of its optical, protective or decorative properties. NOTE: In particular cases, for example, in corrosion-inhibiting pigments, a certain degree of water solubility is necessary.
pigment volume* concentration (pvc)	The ratio, expressed as a percentage, of the total volume of the pigments and/or extenders and/or other non-film-forming solid particles in a product to the total volume of the non-volatile matter.
pile	A fibrous surface produced on a roller covering in which the fibre stands up from the basic covering material.
pinholing*	The presence in the film of small holes resembling those made by a pin.
pitting	The formation of holes or pits by localized corrosion in a metal surface.
plastic paint	*See* latex paint
plastisol	Dispersion of finely divided resin particles in a plasticizer or mixture of plasticizers, which on heating softens and fuses the resin particles.

Terms	Definitions
plasticizer*	A substance added to a coating material to make the dry film more flexible.
polychromatic finish	A finish that has a metallic lustre and gives an iridescent scintillating effect, the colour of which varies when viewed from different angles.
polyester resin*	Synthetic resin resulting from the polycondensation of polyacids and polyols. Depending on their structure a distinction is drawn between saturated and unsaturated polyester resin.
polymer	A substance, the molecules of which consist of one or more structural units repeated many times.
polyurethane resin*	Synthetic resin resulting from the reaction of polyfunctional isocyanates with compounds containing reactive hydroxyl groups.
popping	A small bubble-like defect in a paint film resulting from the expansion on hydration of extraneous material in the plaster substrate; also known as blowing.
pot-life	The maximum time, after mixing the blended or reduced material, that a multi-pack product can be retained for use before there is a deterioration of the properties of the deposited dry film, or before thickening adversely affects the application qualities of the material.† The maximum time during which a coating material, supplied as separate components, has to be used after it has been mixed.
powder coating material	1 A coating material, usually containing pigments, resins and other additives, that is applied in the form of a powder to a suitable substrate and is then fused to form a coherent film. 2 A solvent-free coating material in powder form which, after fusing and possible curing, gives a continuous film.
practical spreading rate	The spreading rate that, in practice, is obtained on the particular substrate being coated. NOTE: It is normally expressed in square metres per litre or square metres per kilogram.
pre-construction primer	*See* pre-weld primer
pre-fab primer	*See* pre-weld primer
premix beads	Glass beads of appropriate size and with retroreflective properties, which are incorporated into paint during manufacturing, or by the applicator, prior to the application of the marking material.
preservative (in can)****	Biocide used to prevent growth of microorganisms during storage of water-based coating material or stock solution.
pressure pot	A pressure vessel containing paint and fitted with a compressed air supply to force paint to a spray gun.
pre-treatment (metal)	The chemical treatment of unpainted metal surfaces before painting.

Terms	Definitions
pre-weld primer	A fast-drying, abrasion-resistant primer for application to blast-cleaned steel plates and bars before cutting and welding into complex structures.
preparation grade*	The classification describing the quality level of the cleaning achieved by a given procedure.
primer coat, prime coat	1 The first coat of a painting system that helps bind subsequent coats to the substrate and which may inhibit its deterioration.† 2 The first coat of a coating system applied to a substrate.
profile	The measurable depth from peak to valley of the roughness of the surface of the steel series of Standards. NOTES: 1 Profile is not cleanliness of the surface or class of blast. 2 Refer to AS 3894 series of Standards.
promoter	*See* catalyst
pseudoplasticity	The fluid condition when consistency is decreased with stirring. The effect is dependent on the shear rate but is independent of time (*see also* thixotropy).
putty	A mouldable material that hardens on ageing, and which contains drying oils or synthetic resins and has a high mineral filler content, and is used for filling deep holes or wide gaps.
rag rolling	A specialized decorative paint effect created by rolling a sausage of bunched-up rag over the wet paint.
reactive diluent	A low molecular weight liquid, usually monomeric, used to reduce the viscosity of some resins while maintaining 100 percent solids.
recoating time	The time necessary for a coat of paint to cure sufficiently to allow a further coat to be applied without marring the underlying paint film. NOTE: Refer to AS 1580.404.1 for assessment.
reducer	*See* thinner
reference film	A film of the material under test, prepared in the same manner and at the same time as the test film, that is used to compare the condition of the test film after a period of exposure with its original condition.
reflectance	The ratio of the luminous flux reflected from a surface to the incident luminous flux. Reflectance is usually expressed as a decimal in the range 0 to 1, but may also be expressed as a percentage. NOTES: 1 Measured values of reflectance depend on the angle of incidence, the method of measurement of the reflected flux, and the spectral character of the incident flux. 2 Where the reflectance is with respect to a narrow wavelength range, the term ‘spectral reflectance’ is normally used.

Terms	Definitions
relative dry hiding power	The ability of a paint to reduce the contrast of a black and white surface to which it is applied and allowed to dry. It is quantitatively expressed in terms of the proportional spreading rate of paint required to produce the same contrast reduction as that obtained with the paint chosen as standard. NOTE: Refer to AS 1580.213.1 for assessment.
resin	A natural or synthetic organic material used to bind pigments together, and to the substrate.† A collective expression for macromolecular materials, predominantly amorphous, that range from solids to liquids having relatively low molecular mass. Resin is an important constituent of the binder. NOTE: High polymers such as polyvinyl acetate, chlorinated rubber and nitrocellulose are not classified as resins.
retarder	1 A slow-evaporating solvent used as a thinner to slow down the speed of drying of a paint or lacquer to improve the application properties or produce a better film. 2 Product added to slow down a chemical or physical change.
rheology	The study of the flow properties of materials.
roller (paint)	A tool used for the application of paint or texture coating having a revolving cylinder covered with lambswool, fabric, foamed plastics or other material.
roller application*	A coating process whereby the coating material is applied by means of a hand-held roller.
roller coating*	A coating process whereby flat articles are passed between two or more horizontally mounted rigid rollers from which a coating material is transferred to one or both faces of the sheet or article. NOTE: The process can be used for the application of a coating material both to individual items (e.g., panels, flush doors) and strip materials.
ropiness*	An effect that is characterized by pronounced brush marks that have not flowed out because of the poor levelling properties of the coating material.
rosin	A natural resin obtained from various pine trees, which is used as an ingredient of varnishes and paints.
runs	Paint film defects in the form of localized sagging paint in narrow ribbons flowing downwards on vertical surfaces from surface irregularities or excessive paint thickness.
rust grade*	A classification describing the degree of rust formation on a steel surface prior to cleaning.
sags*	Local irregularities in the film thickness caused by the downward movement of a coating material during drying in a vertical or in an inclined position. NOTE: Small sags may be called runs, tears or droplets, large sags may be called curtains.

Terms	Definitions
sagging	Excessive flow of paint on vertical surfaces causing imperfections with thick lower edges in the paint film.
sanding	1 The levelling of, the removal of gloss or imperfections from, or provision of key for subsequent coats on, a surface by rubbing with abrasive papers or compounds. 2 An abrasive process used to level and/or roughen the substrate.
sanding sealer (surfacer)	A heavily pigmented sandable undercoat used for building the surface to a smooth condition.
sand finish	*See* texture paint
saponification	The formation of a soap by the reaction of a fatty acid and an alkali. NOTE: In painting practice, saponification refers to the decomposition of the vehicle of a film by alkali and moisture in the substrate, such as in new concrete or rendering based on cement, sand and lime. Saponified films may become sticky and discoloured. In very severe cases the film may be completely liquified by saponification.
satin	*See* semi-gloss
satin finish	*See* semi-gloss
scheduled paints	Paints defined as belonging to First, Second or Third Schedule in Appendix I of the Uniform Paint Standard published by the Commonwealth Department of Health and Aged Care.
scumbling	A painting technique in which portions of a newly applied colour coat are removed or textured while still wet, in order to expose part of the underlying colour. It is used to achieve a variety of broken colour effects.
scrubbability	*See* washability
sealant	A permanently flexible material used to fill expansion joints and gaps in buildings so as to provide a weatherproof seal.
sealer	A product used to seal substrates to prevent materials from bleeding through to the surface, to prevent reaction of the substrate with incompatible top coats or to prevent undue absorption of the following coat into the substrate.
seediness	Undesirable particles or granules, other than dust, found in paint or varnish.
semi-drying oil	An oil in which the degree of unsaturation and, hence, the drying characteristics are inferior to those of a drying oil such as linseed oil. NOTE: Typical semi-drying oils are sunflower and soya oil.
semi-gloss (finish)	A surface with a specular gloss reading above 20 gloss units but not exceeding 50 gloss units when the specular direction is 60 degrees.

Terms	Definitions
settling	1 Separation of paint in a container in which the pigments and other dense insoluble materials accumulate and aggregate at the bottom (*see also* caking). NOTE: Refer to AS 1580.211.1 for assessment. 2 The deposition of a residue on the bottom of a can of a coating material. A hard settling cannot be redispersed by simple stirring.
sheen	1 A property of a finish that appears to possess gloss when seen at glancing angles to the surface, but which when viewed at an angle normal to the surface, appears flat. 2 Gloss which is observed on an apparently matt surface at glancing angles of incidence.
shelf life	The period a paint may be stored in sealed unopened containers without the paint showing any significant deterioration in quality.
shellac	The product obtained by refining seedlac by heat processes or by both heat and solvent processes.
shop primer	A fast-drying, abrasion-resistant primer for application in the workshop to fabricated steel units.
shot peening/blasting	1 A metal cleaning process in which the surface is blasted by shot. 2 A process of abrasive blast-cleaning using small metal spheres.
side sheen	*See* sheen
silicone resins*	Synthetic resin in which the basic structure consists of siloxane (silicone-oxygen-silicone linkages).
silking*	The formation of parallel microscopic irregularities left on or in the surface of the dry film of a coating material giving the appearance of watered silk.
sinkage*	The partial absorption of a film of a coating material by the substrate, mainly perceptible as local differences in gloss and/or texture.
size	A water-thinned sealer or adhesive made from glue, casein or cellulose derivatives.
skinning	1 The formation of a tough, skin-like covering on liquid paints and varnishes when exposed to air. 2 The formation of a skin on the surface of a coating material in the can during storage.
smut	Residual matter remaining on the surface after chemical cleaning.
solids content	*See* non-volatile content by mass *and* volume solids
solvent	A single liquid or blends of liquids, volatile under specified drying conditions, in which the binder is completely soluble.
solvent-borne paint	A paint that is dispersed or dissolved in suitable organic solvents.

Terms	Definitions
spar varnish	*See* marine varnish
spatter	Small particles or drips of liquid paint thrown or expelled from a paintbrush or roller during the application of paint.
spectral match	Two or more materials that appear identical in colour under any visible light source.
specular gloss	The luminous fractional reflectance at the specular direction (*see* luminous fractional reflectance).
spot priming	The priming of small areas of a previously painted surface where the substrate has been exposed.
spraying	A method of applying paint in which paint is atomized by compressed air or by high liquid paint pressure, the atomized paint being directed onto the surface being coated.
spreading rate	The surface area that can be covered by a given quantity of coating material to give a dried film of requisite thickness (e.g., m^2/L or m^2/kg) (*see also* practical spreading rate *and* theoretical spreading rate).
stain	A solution or suspension of colouring matter in a vehicle designed primarily to be applied to create colour effects rather than to form a protective coating. Also used to describe a transparent coating that colours without completely obscuring the grain of the surface.
stainer	*See* colorant
steam cleaning*	The removal of surface contaminants from metallic components by the action of steam jets.
stippling	The process of producing a broken colour or pimpled texture by applying spots of a different colour or by disturbing the surface of the paint film before it has set by means of a brush, roller or sponge.
stopper*	A stiff paste used for filling holes, cracks and similar surface defects.
stopping	The filling of blemishes in work to be painted, such as nail holes or cracks, to bring them to an even surface (*see also* filler *and* putty).
stoving*	The hardening process by which the crosslinking (increase in molecular size) of a binder results from the application of heat at a predetermined minimum temperature. NOTE: For stoving generally, a temperature range and a time period are prescribed whereby the temperature limits are specific for the material.
streaking	The formation of irregular lines or streaks of various colours in a paint film caused by contamination or incorrect incorporation of colorant.
stripe coat	Additional coat applied to edges, holes, welds and corners to ensure complete coverage, before spray application of the main coat.

Terms	Definitions
styrene resin	Synthetic resin resulting from the polymerization of styrene or its copolymerization with other monomers.*
substrate*	The surface to which the coating material is applied or is to be applied.
sugar soap	A product that, after mixing with water, gives an alkaline solution used for washing down sound paintwork before re-painting.
sulfide staining	Dark grey or black stains that occur on paint films, which are caused by the reaction of compounds of lead or other metals, within the paint, with sulfur compounds.
surface coating	A coating or membrane applied to a surface during or after fabrication for the purpose of enhancing durability, appearance or other property.
surface dry time	A stage in the drying cycle when the surface of the film has reached a tack-free condition. NOTE: The situation is variously quantified by several test methods, such as AS 11580.401.1, AS 1580.401.3, AS 1580.401.5, and AS 1580.401.6.
sweating	1 Exudation of oily matter from the film of a coating after the film has apparently dried. 2 The emergence, on the surface of a film, of one or more of the liquid constituents of the coating material.
swelling*	The increase in the volume of the film as a result of the absorption of liquid or vapour.
synthetic resin*	Resin produced by chemical reactions such as polyaddition, polycondensation or polymerization.
tack-free	The stage during the drying and curing process when, under firm pressure, the paint film is free from stickiness or tackiness.
tackiness	The degree of stickiness of a paint film after a given drying time.
tack-rag	1 A piece of loosely woven cloth that has been dipped into a varnish oil and wrung out. When the rag becomes tacky or sticky, it is wiped over a surface to remove small particles of dust. 2 A piece of cloth impregnated with a sticky substance that is used to remove dust from a substrate after abrading and prior to painting.
tannin bleed	Visible discolouration of the paint film caused by migration of tannin components from the underlying timber.
tear-drops	Drops of paint that collect on the bottom edges of items painted by dipping (*see also* fat edge).
terebine	A solution of driers used to accelerate drying of alkyd paints.
texture	The roughness or irregularity of a surface.
texture paint	A paint that can be manipulated by brush, roller, trowel or other tool to produce various types of rough, sandy or patterned effects.

Terms	Definitions
theoretical spreading rate*	A spreading rate calculated solely from the volume of non-volatile matter.
thickening*	The increase in the consistency of a coating material but not to the extent as to render it unsuitable.
thickening agent*	Additive that increases the viscosity of the liquid coating material.
thinner*	1 A volatile liquid, single or blended, added to a product to lower the viscosity. 2 A single liquid or blend of liquids, volatile under specified drying conditions, added to a coating material to influence properties, primarily the viscosity.
thixotrobic agent, thixotrope: additive*	Additive that is used to impart thixotropy in a coating material.
thixotropy	The property of a paint whereby the consistency is reduced on brushing or stirring but increases again on standing (*see also* pseudoplasticity).
through dry condition	*See* hard dry condition
tie-coat	A coat applied to a previous coat to improve the adhesion of subsequent coats.
tinter	*See* colorant
tint-base	The basic paint to which colorants are added as required to make a wide range of colours. NOTE: Depending upon the extent of pigmentation, these products are typically termed light, mid, deep and accent.
topcoat	*See* finish coat
total solids	*See* non-volatile content by mass *or* non-volatile content by volume
touch-dry	The stage during the drying or curing process when the paint film no longer feels sticky when lightly touched. NOTE: AS 1580.401.1 provides a method that reflects this stage.
touch-up	Spot painting to repair damaged or defective films to produce an even fault-free finish.
turpentine	*See* mineral turpentine *and* natural turpentine
two-pack product	A coating material that is supplied in two parts that have to be mixed in the correct portions before use. The mixture will then remain in a useable condition for a limited time.
undercoat	1 An intermediate coat formulated to prepare a primed surface or other prepared surface for the finishing coat. 2 Any coat between the priming coat and the finishing coat.
ultra-high build	A minimum dry film thickness of 1 000 μm achieved in a one coat application.
uv curing*	The hardening of coating materials by exposure to ultra-violet radiation.

Terms	Definitions
unsaturated polyester resin*	Polyester resin characterized by carbon-carbon double bonds in the polymer chain, which facilitates subsequent crosslinking with reactive solvents, particularly styrene.
vanadium staining	Unsightly staining, usually red-brown in appearance, that develops staining on light coloured bricks containing traces of vanadium compounds that bleed through any applied paint film.
varnish	A coating material, which, when applied to a substrate, forms a solid, transparent film having protective, decorative or specific technical properties.* NOTES: 1 Certain varnishes contain matting agents. 2 Certain varnishes may be of the two-pack type.
varnish system	*See* paint system
vehicle	The sum total of the constituents of the liquid phase of a coating material.*
vinyl resin	Synthetic resin resulting from the polymerization or copolymerization of monomers containing vinyl groups.
viscosity	The quantifiable relationship between applied shear force and shear rate for a fluid.
viscosity dynamic	The ratio of the applied shear stress to the velocity gradient.* NOTE: The SI unit for dynamic viscosity is the pascal second (Pa.s). The traditional unit is the centipoise (cP); 1 cP = 1 mPa.s.
viscosity kinematic	The ratio of the dynamic viscosity to the density of the liquid.* NOTE: The SI unit for kinematic viscosity is the square metre per second (m^2/s). The traditional unit is the centistokes (cSt); 1 cSt = mm^2/s.
volatile organic compound (VOC)*	Fundamentally, any organic liquid and/or solid that evaporates spontaneously at the prevailing temperature and pressure of the atmosphere with which it is in contact. NOTE: As to current usage of the term VOC in the field of coating materials, see volatile organic compound content (VOC content/VOCC).
volatile organic compound content (VOCC)*	Mass of the volatile organic compounds present in a coating material, as determined under specified conditions. NOTE: The properties and the amount of compounds to be taken into account will depend on the sphere of application of the coating material. For each sphere of application, the limiting values and the methods of determination or calculation are stipulated by regulations or by agreements.
volume solids	*See* non-volatile content by volume
wash primer	*See* etch-primer
washability	The ease with which dust, soiling and surface stains can be removed by washing from a dry film of a coating material without detriment to its specific properties. NOTE: Refer to AS 1580.459.1 for assessment of washability.
water blasting (wet)	Cleaning of a surface with a jet of water at water nozzle pressure below 70 MPa (10 000 psi), which may contain certain additives such as corrosion inhibitors and abrasives.

Terms	Definitions
abrasive inducted	Addition of abrasives to the water to help lean the surface and impinge a profile.
low pressure water cleaning	Pressure range of 20–35 MPa (3000–5000 psi).
high pressure water cleaning	Pressure range of 35–70 MPa (5000–10 000 psi).
sand inducted	*See* abrasive inducted
water jetting	Cleaning of a surface with a jet of water at water nozzle pressure above 70 MPa (10 000 psi), which may contain certain additives such as corrosion inhibitors and abrasives
high pressure water jetting	Pressure range of 70–170 MPa (10 000–25 000 psi)
ultra high pressure water jetting	Pressure above 170 MPa (above 25 000 psi).
waterborne paint	Paint in which the pigment and the binder are dispersed or dissolved in a continuous phase that consists essentially of water. NOTE: Latex paints are a specific type of waterborne paint where the binder is dispersed as an emulsion.
water spotting	Spotty appearance on a dry paint film caused by the drying out of droplets of water.
water repellants	1 Low viscosity coatings or penetrating silicone- based products that are designed to retard wetting and penetration of a surface by water. 2 An additive that confers water-repellent properties on a dry film by reducing the degree of water absorption or by increasing the interfacial tension between the dry film and incident moisture.
weathering	The exposure of paint films to the weather, to determine their behaviour to natural elements and pollution.
weld-through primer	*See* pre-construction primer
wet abrasive-blast cleaning	Abrasive-blast cleaning with water added, or water blasting with abrasive particles added.
wet edge	The period of time during which the physical condition at the boundary of the film of a coating material allows the same product to be applied to an adjacent area and to be blended imperceptibly with the existing film (*see also* lap). NOTE: The existing film is said to present a wet edge.
wet film thickness (WFT)	The thickness of the wet paint immediately after application.
wetting agent*	Additive to improve the contact between the medium and the pigment/extender particles or between the coating material and the substrate, generally by reducing the surface tension.
wet-on-wet	A technique whereby a further coat is applied before the previous one has dried, and the composite film then dries as a single entity.

Terms	Definitions
whitening in the grain*	White or silvery areas, mainly in deep-grained wood, which appear as the formation of the clear film progressess.
whitewash	A flat, waterborne paint for exterior use, consisting mainly of slaked lime and calcium carbonate (whiting); also called ‘lime wash’.
whip blasting, brush blasting	Light abrasive blast cleaning usually performed to remove the bloom which sometimes develops when a grit blasted surface is allowed to stand too long before it is recoated; a method of preparing surfaces before painting using light abrasive blast cleaning.
working-up	Any lifting, mixing, dissolution, incorporation, or other interaction observed between two paint films during the application of the overlying film. NOTE: Such interaction is indicative of deterioration of the underlying coating during its curing period, especially if insufficient time has been allowed between coating applications.
wrinkling*	The development of rivels in the film of a coating material during drying. NOTE: Some decorative paints are formulated to form more or less regular wrinkles in the film.
zinc-rich primer	An anti-corrosive primer for iron and steel, incorporating metallic zinc dust as a pigment dispersed in an organic or inorganic vehicle.

APPENDIX A

REFERENCED DOCUMENTS

(Normative)

The following documents are referred to in this Standard:

AS

1580 Paints and related materials—Methods of test (all methods)

1627 Metal finishing—preparation and pretreatment of surface (all methods)

2700 Colour strands for general purposes

3894 Site testing of protective coatings (all parts)

4361 Guide to lead paint management

4361.1 Part 1: Industrial applications

4361.2 Part 2: Residential and commercial buildings

Australian/New Zealand Standard™

Guide to the painting of buildings

Originated in Australia as AS 2311—1979.
Originated in New Zealand as NZS 7703:1985.
Previous edition AS 2311—1992.
AS 2311—1992 and NZS 7703:1985 jointly revised, amalgamated and redesignated as AS/NZS 2311:2000.

Jointly published by Standards Australia International Ltd, PO Box 1055, Strathfield, NSW 2135 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 3388 2

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee CH/3, Paints and Related Materials, to supersede AS 2311—1992, *The painting of buildings*, and NZS 7703:1985, *The painting of buildings*.

The objective of this Standard is to provide guidance and recommended good practice for the design, application and maintenance of decorative paint systems for use by the paint industry in the development of painting specifications.

This Standard cannot be nominated as a painting specification, but it can be used as a basis for the preparation of appropriate paint specifications to suit individual contracts. Guidance on the preparation of painting specifications is given in Section 9.

CONTENTS

Page

Page

Page

APPENDICES

FOREWORD

Painting is an accepted method of protecting materials to extend their service life, to enhance their appearance, or for reasons of hygiene.

Alternative materials and systems can also provide satisfactory service; however, the materials and systems included in this Standard are known to perform satisfactorily when correct application methods have been followed.

Because of health, safety and environmental considerations, emphasis has been given to the use of latex paint systems; however, in specific circumstances, alternative solvent-borne systems have been included to ensure that all performance requirements are met. It is recommended that specifiers contact manufacturers to obtain material safety data sheets (MSDS) when considering matters dealing with health and the safe handling of paints.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard
Guide to the painting of buildings

S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 SCOPE

This Standard provides a guide to products and procedures for the painting of buildings for general domestic, commercial and industrial use.

The Standard does not include specific recommendations for the long-term protection of iron or steel exposed directly to the atmosphere or to internal climates likely to have aggressive environments which are dealt with in AS/NZS 2312.

1.2 APPLICATION

The Standard is intended to assist trades people, architects or building owners in the preparation of painting specifications for inclusion in contracts. It should not be called up in contracts without also specifying the detail to be derived from it.

In providing guidance on the preparation of painting and repainting specifications for surfaces forming parts of buildings, the Standard necessarily gives choices of paint types for use in different areas. For each contract, the architect, or owners, should draw up a complementary painting schedule to detail the options that are to be used together with a colour schedule. This Standard can then be referred to when specifying the necessary preparation, the coating system and the methods and conditions of application.

NOTE: Information on the preparation of painting specifications is given in Section 9 and Appendices A and B. Information on inspection and testing is given in Appendix C.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
1318	Use of colour for the marking of physical hazards and the identification of certain equipment in industry
1345	Identification of the contents of piping, conduits and ducts
1580	Paints and related materials—Methods of test
1580.401.5	Method 401.5: Hard dry condition—Sanding test
1580.408.2	Method 408.2: Adhesion—Knife test
1580.408.4	Method 408.4: Adhesion (cross-cut)
1580.457.1	Method 457.1: Resistance to natural weathering
1604	Timber — Preservative treated — Sawn and round
1627	Metal finishing—Preparation and pretreatment of surfaces
1627.4	Part 4: Abrasive blast cleaning
1680	Interior lighting
1680.1	Part 1: General principles and recommendations
1940	The storage and handling of flammable and combustible liquids
2430	Classification of hazardous areas