

## SECTION 16

### PAINTING

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Version	Date	Authors	Summary of Changes
1	19/8/14		Issue to web
	05/05/15	Manager, Infrastructure Services	Cross referenced with other sections
V2	02/07/18	Manager, Infrastructure Services	2018 general review update

## 16.0 PAINTING

This document is a section of the James Cook University (JCU) Design Guidelines and is not to be read in isolation. Consultants and Contractors are required to comply with all sections of the JCU Design Guidelines.

### 16.1 Approvals Required during Design

Approval shall be obtained from the Deputy Director – Planning and Development in DD for the:

- Use of any oil based or alkyd paints internally to buildings.
- Paint finish to any ‘Projection Wall’ in Lecture Theatres and Seminar Rooms if not a flat seamless finish in the ‘white’ to ‘off white’ colour range.
- Proposed change in paint brands or paint lines, and
- Proposed combination of paints and/or colours from different manufacturers.

### 16.1 General

All internal wall surfaces including those in Plant Rooms, Lift Motor Rooms and Service Cupboards, but excluding inaccessible service ducts, shall be painted.

Provide coating systems to substrates as follows:

- Consistent in colour, gloss level, texture, and dry film thickness
- Free of runs, sags, blisters, or other discontinuities
- Paint systems that are fully opaque
- Clear finishes, at the level of transparency, consistent with the product fully adhered
- Resistant to expected impacts and damage from expected use
- Resistant to environmental degradation with the manufacturers stated life span
- Minimise the impact on the quality of indoor atmospheric health by using a low or no Volatile Organic Chemicals (VOCs) product where possible
- Minimise heat absorption and temperature in the surrounding area (e.g. by using highly reflective or low heat absorbing paint)
- Minimise impact on the environment through responsible manufacture and using lower amounts of oil, titanium dioxide and other chemicals potentially damaging to the environment
- Environmentally responsible methods are to be used consistent with those promoted by GreenPainters® and standards organisations listed below.

The following Australian / New Zealand standards are referred to in this section for compliance where appropriate:

AS 1530 Methods for fire tests on building materials, components and structures.

AS/NZS 1580	Paints and related materials - Methods of test
AS 1627	Metal finishing - Preparation and pre-treatment of surfaces
AS 1851.7	Fire Doors
AS/NZS 2310	Glossary of paint and painting terms.
AS/NZS 2311	Guide to the painting of buildings
AS/NZS 2312	Guide to the protection of iron and steel against exterior atmospheric corrosion.
AS 2700	Colours for general purposes.
AS 3750	Guide to Properties of Paints for Buildings - Introduction and list of Guides
AS 3750	Paints for Steel Structures - Introduction & List of Standards
AS 4025	Paints for Equipment [including ships]
AS 4049	Paints and related materials - Pavement marking
HB 73.1	Handbook of Australian Paint Standards [General]

All paint types or protective coating systems specified in project paint systems shall conform to the appropriate APAS specification. <http://www.apas.gov.au/>

Selected paint systems will be applied in accordance with the manufacturer's written specification. Oil based and alkyd paints may only be used internally to buildings with approval from the JCU Estate Directorate, Deputy Director, Planning and Development during DD.

Paint finish to the 'Projection Wall' in Lecture Theatres and Seminar Rooms shall be a flat seamless finish in the 'white' to 'off white' colour range to the approval of JCU Deputy Director, Planning and Development during DD.

Where the building is subject to Green Star<sup>®</sup> or similar accreditation, stringent compliance is required to the conditions of Green Building Council of Australia specifications for paints and substances used.

Registers of paints and substances used must be kept and submitted to relevant parties. See Green Building Council of Australia: <http://www.geca.org.au>. Low VOC and environmentally friendly products are accredited and/or assessed by Good Environmental Choice Australia <http://www.geca.org.au> and Ecospecifier. <http://www.ecospecifier.com.au>.

The proposed brand(s) of paints and paint lines in the tender shall be specified for approval.

- The Contractor or specifier shall provide, on a representative portion of substrate(s), 1 m<sup>2</sup> samples of each of the total coating systems which meet the specified requirements for colour, gloss and texture as per the University paint system.
- The physical and chemical properties of proposed paints or coating systems shall be assessed against AS/NZS 1580 and any other above relevant standard for technical & functional suitability.
- Paints shall not be a Schedule 1 or 3 paint within the meaning of the Uniform Paint Standard [UPS], which forms part of the Standard for the Uniform Scheduling of Medicines and Poisons [SUSMP] and which is issued by the National Health and Medical Research Council [NHMRC]. <http://www.tga.gov.au/ndpsc/paintgui.pdf>

- Paints classified as either Schedule 1 or 3 shall not be used in human contact areas or applications as prohibited by UPS e.g. roofs or surfaces to be used for the collection or storage of potable water. Refer to <http://www.anztpa.org>
- High performance paints - submit the manufacturers' specifications for each system using two-pack or other high performance paint.

Provide a material Safety Data Sheet (SDS) for each proposed paint or paint line as part of the submission. A full set of SDS for final paint system shall be provided to and held by the Contractor on site during construction and must be available for inspection by JCU upon request.

Appropriate precautions must be taken in planning to remove or protect persons from paint product vapours or preparation dusts. These to be included in the Work Health and Safety Plan detailed in Section 4 of these Design Guidelines and should include, but not be limited to:

- Careful selection and assessment of safer paint products to minimise potential health effects.
- Painting tasks scheduled - out of hours
- Relocation of staff for duration of project.
- Alter working arrangements for known sensitised or allergic individuals e.g. work from home, other non-affected area.
- Ensure all paint containers remain sealed and when brushes are soaking.
- Clean up any spills promptly to reduce vapour load in indoor environments.
- Remove doors or other movable structures to external open air spaces to paint and cure before reinstalling or rehang if possible.
- Ensure paint vapours and preparation dusts do not enter HVAC systems or adjacent buildings - tradespersons to locate painting activities away from air intake areas and natural building airflow corridors e.g. automatic doors.
- Empty drying paint cans shall be resealed and with other paint debris, removed from the site immediately upon completion of the painting session to avoid paint vapours accumulating in indoor spaces.

Contractors shall practice water saving work techniques and detail these in the Site Environmental Management Plan required in Section 21 of these design guidelines, which may include:

- Minimise wash out of rollers by storing overnight in clean plastic bags or specially designed roller covers to continue use
- Store brushes in a bucket of water overnight, spin water out next day and continue use
- Paint or paint waste shall not be put down stormwater drains or sewers. Small amounts of unwanted paint should be brushed out on newspaper, allowed to dry, and then placed in normal waste

- Larger projects should use a paint waste water recycling systems

Contractor shall give the JCU Project Manager sufficient notice to allow inspections as required at the following work hold points:

- Completion of preparation of surfaces
- After application of prime or sealer coats
- After application of undercoat
- After application of each subsequent coat

JCU maintains an Asbestos register, which lists the known and suspected locations of asbestos materials in existing buildings or structures. Contractors must include this under the requirements of the Work Health and Safety Plan detailed in Section 4 of these Design Guidelines prior to planning or undertaking surface preparation. No painting work shall proceed until the JCU Project Manager confirms activities associated with asbestos material is suitable mitigated. Work undertaken to remove asbestos material prior to painting must comply with JCU Policies and Procedures, the Qld WHS Regulation and National Code of Practice for Safe Removal of Asbestos.

## 16.2 Materials

Only first quality lines from approved manufacturers shall be used. Approved manufacturers are:

- Dulux
- Taubmans
- Bristol
- Wattyl
- Resene
- Keim
- Sikkens

Other APAS approved paint products may be considered for use, but only after documented agreement and full assessment by the JCU Project Manager for eco-friendly, functional and technical suitability.

Paint brands or paint lines shall not be changed without documented approval of JCU Estate Directorate, Deputy Director, Planning and Development. Paints and/or colours from different manufacturers shall not be combined in a paint system. Colours shall be from manufacturers' standard range. Variation by tinting to the standard palette shall only be by the manufacturer or supplier unless otherwise approved by JCU Estate Directorate, Deputy Director, Planning and Development.

'Flat', 'low-gloss', 'semi-gloss', 'gloss' and 'full-gloss' as per AS/NZS 2310 and AS/NZS 2311, or other relevant AS/NZ standard.

Ensure that primers, sealers and undercoats are suitable for the substrate and compatible with the finish coat and each other. Except for stains and other clear or translucent finishes each coating shall be of a noticeably different tint from the preceding coat.

Paints shall be delivered to the site in the manufacturer's labelled and unopened containers.

Light coloured internal finishes shall be utilised in order to minimise lighting power densities. Ceiling/wall/floor reflectance shall be at least 70%/50%/15% respectively.

### **16.3 Workmanship**

As per relevant sections AS/NZS 2311 and AS/NZS 2312. Ensure the work of all other trades is complete as far as is practicable within the area to be painted, except for installation of fittings, floor sanding and laying flooring materials, before commencing to paint.

Painting shall not be done in dusty conditions, or in unsuitable weather such as when the relative humidity exceeds 85%, or when the surface temperature of the substrate is less than 10°C or more than 50°C, unless the paint is suitable and recommended for such conditions.

Before painting in any section of the project begins, ensure the area is cleaned out and protected against dust entry or sources of paint contamination.

Drop sheets and masking shall be specified and used to protect finished work or other surfaces liable to damage during painting. Any accessories or surfaces that are damaged directly or indirectly as a result of painting shall be repaired or replaced by the contractor. Cleaning of areas where paint has fallen should not allow the paint to enter drains, sewers or areas of natural drainage / waterways.

Special care must be taken in protecting items which remain in the area or which cannot be moved for the duration of the job e.g. computers, desks and furniture.

Paint shall not be mixed in areas or on surfaces liable to damage from spillage.

Door furniture, switch plates, light fittings, pin boards, whiteboards and shelving and the like shall be removed before painting, and replaced on completion.

- Identifying fire door tags or barcodes on the stile of a fire door must not be removed or painted over at any time. These items must be painted around.

During preparation of surfaces, painting and inspection, light levels shall be maintained such that the luminance (photometric brightness) of the surface is at least equal to that produced under daylight and/or maximum permanent artificial illumination conditions.

Putty or fillers may be stained to match the colour of the substrate.

Paint and related materials shall be stored and prepared in the area assigned by the JCU Project Manager to comply with Qld Dangerous Goods Safety Management Act & Regulations and shall be noted in the Work Health and Safety Plan required in Section 4.

Paint-soiled rags, waste, empty cans and other debris arising out of the painting work must be removed from the site upon completion of each day's work.

Marks, paint spots and stains shall be cleaned off throughout the work area as soon as possible; maintaining and restoring damaged surfaces to their original condition.

Where necessary for aesthetic reasons, damaged paintwork or misses shall be touched up only with the paint batch used in the original application.

Refer to relevant sections AS/NZS 2311 and AS/NZS 2312 where appropriate, and other related standards or WHS legislation as applicable for equipment specifications.

Painting equipment and ladders, planks and other plant shall be appropriate and properly maintained by the Contractor.

Conventional or airless spray equipment must be of an appropriate capacity so as to satisfactorily atomise the paint being applied. Spray equipment shall be fitted with the correct nozzle/tip assembly to avoid the need to thin paint beyond the maximum amount recommended by the manufacturer. The air supply shall be free from oil, water and other contaminant.

Wet Paint Notices shall be placed conspicuously and not removed until paint is dry, unless approval is given and access is restricted to all persons except painting staff.

Refer to relevant sections AS/NZS 2311 and AS/NZS 2312 where appropriate, and other related standards as applicable.

Paint and related materials shall be applied in accordance with the manufacturer's recommendations. The application of thinned prime or seal coats, consistent with the paint manufacturer's recommendations, and which may be necessary on porous surfaces, or of any additional finishing coats necessary to achieve the required colour, opacity, texture or film thickness shall be at the contractor's expense.

The standard of workmanship with regard to final colour, gloss and texture shall match the sample areas specified.

#### **16.4 Substrates**

Refer to relevant sections AS/NZS 2311 and AS/NZS 2312 where appropriate, and other related standards as applicable.

Substrates shall be properly prepared to receive the specified paint systems. Preparation shall include, but not necessarily be limited to cleaning down and removing oil, grease and loose foreign matter, including laitance, efflorescence, moss, lichen, dirt and corrosion products, in a manner which causes neither undue damage to the substrate nor damage to, or contamination of, the surroundings.

Mould and other fungal presence must be treated according to Australian Mould Guideline AMG-2005-1 by recommended mould remediation methods and by trained and accredited mould remediators in severe cases, or as directed by the JCU Project Manager.

For glossy surfaces use, adequately scuff and/or solvent or chemically etch as appropriate to provide satisfactory adhesion for subsequent paint coats. Opt only for substances free of hazardous and carcinogenic substances with as low a VOC content as possible.

Minimal amounts of recycled water only should be used where cleaning with water is required. Green cleaning products that do not contain potentially hazardous ingredients and are readily biodegradable

should be used. (See those recommended by Good Environmental Choice Australia and Ecospecifier Australia). Excess suds and other materials generated such as paint scrapings, fines, residual paint and dirt likely should be collected and / be prevented from entering natural drainage, storm water or sewer system.

Any material suspected of containing hazardous substances (e.g., asbestos or lead) must be disposed of as regulated waste.

Fill cracks and holes with fillers, sealants or grouting cements as appropriate for the finishing system and substrate, and sand smooth. Again low VOC and non-hazardous products should be used.

Unless otherwise specified, ensure that surfaces are cured and dry before painting commences. Apply the first coat of paint immediately after cleaning and before contamination of the substrate can occur. Where contamination of intermediate coats occurs, clean (immediately prior to over-coating) in accordance with the coating manufacturer's recommendations and to the JCU Project Manager's approval.

At time of priming, test the substrate with a moisture meter if required, refer to AS/NZS 2311 relevant section.

Refer to AS 1627, AS 4025 as appropriate to the requirements of the specification for metallic surfaces preparation.

Ensure removal of weld spatter, slag, burrs or any other objectionable surface irregularities from iron and steel surfaces, degreasing: to AS 1627.1, by solvent or alkaline cleaning. Hand or power tool cleaning: to AS 1627.2 or .7 respectively. A final surface at least equal to preparation grade 'St2' of AS 1627.9 shall be specified. Abrasive blast cleaning: to AS 1627.4, to the class specified in the specified protective treatment. A surface roughness appropriate for the specified treatment shall be specified.

Before application to very smooth concrete, brick or masonry, specify acid etch, grind, or abrasive blast to the surface as appropriate to provide a suitable key for the subsequently applied coating and to remove laitance. Loose friable matter shall be removed before filling surface discontinuities.

Set Plaster and Fibrous Plaster Surfaces, solvent-borne paint or other impervious coatings shall not be applied if the moisture content at the surface, tested with a moisture meter, exceeds 12%.

#### Timber Surfaces

- Large resinous knots and decayed areas shall be cut out and replaced with sound timber
- Remove any defective putty and punch nails
- For painted surfaces, spot prime small knots, cracks, open joints, holes and bare timber with specified wood primer
- Fill as necessary with polymeric fillers or oil-based putty, which in the case of clear or lightly pigmented finishes, shall match the substrate. Use appropriate inert filler if the finish is a two-pack epoxy or polyurethane
- Dressed surfaces shall be lightly sanded in the direction of the wood grain with appropriate grade 'free cut paper' and powdery deposits removed

- One coat of wood primer to the back of external fascia boards, timber door and window frames, bottoms of doors, associated trims and glazing beads shall be applied before fixing in position.