



PureCoat™ by Bates Surfaces is a range of UV coated Lakepine Medium Density Fibreboard (MDF) panels with a durable high gloss surface. The range includes three painted, double sided Mirror Gloss options and five Melteca colours with a single sided Mirror Gloss finish. PureCoat™ by Bates Surfaces panels have matching PVC and laser edging available. All PureCoat™ by Bates Surfaces panels come with a protective film to assist through the cutting, handling and installation process.

## Composition

PureCoat™ by Bates Surfaces panels are manufactured on MRZero (Moisture Resistant, EO low formaldehyde emitting) Medium Density Fibreboard substrate providing an ideal platform for a consistent and smooth decorative finish. The decorative surface comprises a multi-layered paint system, or a pressed melamine paper with a clear coating which are both fully cured using UV light. PureCoat™ by Bates Surfaces utilises a urethane acrylate coating system.

PureCoat™ by Bates Surfaces contain silver ions which provide effective long term antimicrobial protection, reducing the overall level of harmful bacteria in the environment and the likelihood of cross contamination. This makes PureCoat™ by Bates Surfaces ideal for applications where hygiene is critical. Sheets are identified by PureCoat™ by Bates Surfaces branding, including colour and other manufacturing details. Packs are clearly identified with the distinctive brand label.

## Uses

- Vertical interior use only
- Kitchen, bathroom and laundry cabinets
- Vertical panels on furniture – commercial and residential
- Wall units
- Bar fronts
- Shop fittings and displays
- Wall linings in dry areas

For uses other than those specified in this section please contact Bates Surfaces on 0800 269 251.

## Specifying

When specifying PureCoat™ by Bates Surfaces, include the following information:

### PRODUCT CHARACTERISTICS

Colours	Refer to the PureCoat™ by Bates Surfaces brochure
Finish	Mirror Gloss double sided and single sided options - refer to the PureCoat™ by Bates Surfaces brochure
Sheet size	2440 x 1220mm
Thickness	18mm
Substrate	MRZero MDF
Edge finish	Type of edging (PVC or laser) colour and finish

# Design considerations

## CHOOSING COLOURS

PureCoat™ by Bates Surfaces is no different from any other material in that darker colours and gloss finishes will always show scratches, dirty fingerprints and superficial wear and tear more readily than lighter colours or more textured finishes.

## EDGE FINISHING AND SUBSTRATE EXPOSURE

The edges of PureCoat™ by Bates Surfaces can be finished using 1.0mm PVC solid edging, or 1.2mm laser edging with a matching Mirror Gloss finish. Edging a panel helps protect the substrate from damage and moisture.

## CUTTING PANELS

Any cut outs or alterations to the board that leave the substrate exposed, and do not provide a water resistant seal, should be coated with a suitable water resistant barrier to help maintain the integrity of the board and prevent moisture ingress.

## ACCESSORIES

It is important to consider the design of accessories, such as handles, to be used to finish off cabinetry and furniture or similar. The design of accessories can play a key part in ensuring moisture does not get trapped and cause the substrate to distort.

## BATCH MATCHING

We recommend ordering all panels for one job together to avoid any slight colour variations that may occur between production runs.

## PERFORMANCE DATA

Properties	Test method	Test results
Abrasion resistance	AS/NZS 4266.2.2017	All colours > 400 cycles
Resistance to scratching	AS/NZS 2924.2 Part 14 EN 438-2 Part 25 Dur-o-test	0.9N Rating 5 4.5N
Resistance to staining	Liquid agents for 16 hours AS/NZS 4266.25	1 (no visible marks)
Resistance to cracks	70°C oven for 24 hours AS/NZS 4266.24	1 (no cracks)
Resistance to steam	Steam for 30 mins AS/NZS 4266.2.2017	1 (no effect)
Resistance to UV	Exposure to Xenon Arc UV light for 306 kJ/m <sup>2</sup> AS/NZS 2924.2 Part 16	4
Fire rating	ISO 5660.1 Average specific extinction area Group number	23.4 m <sup>2</sup> /kg 3

## DIRECTIONAL COLOURS

Within the PureCoat™ by Bates Surfaces range, Ink Black is a metallic colour. As a result of the manufacturing process, metallic colours have a directional orientation along the length of the sheet. This means that sheets will reflect light in a different way depending on their orientation.

Metallic colours have a directional label on the sheet to indicate this direction. It is important that as each panel is cut from the sheet, the direction is recorded on each individual component. This will make it easier to keep the appearance of all panels consistent when installed.

## VISIBLE DEFECTS

PureCoat™ by Bates Surfaces is produced to very high quality standards. Some very minor visual defects < 1.0mm in size are allowed, a maximum of one defect per side. These defects are identified on the panel, which will allow the defects to be positioned in a place where they will not be visible (such as on the inside face of a cupboard door), or for the defect to be cut around.

## EFFECTS OF HEAT

Precautions must be taken to ensure PureCoat™ by Bates Surfaces is kept clear of heat sources, such as free standing fire places and space heaters, wall ovens and hot plates etc. The structural life of the substrate may be impaired if temperatures exceed 50°C for prolonged periods. PureCoat™ by Bates Surfaces can withstand short term exposure to temperatures of 65°C above ambient temperature without fear of ignition. Manufacturers of heat appliances referenced above must be consulted to ensure that correct clearances and ventilation are provided for.

## LIMITATIONS

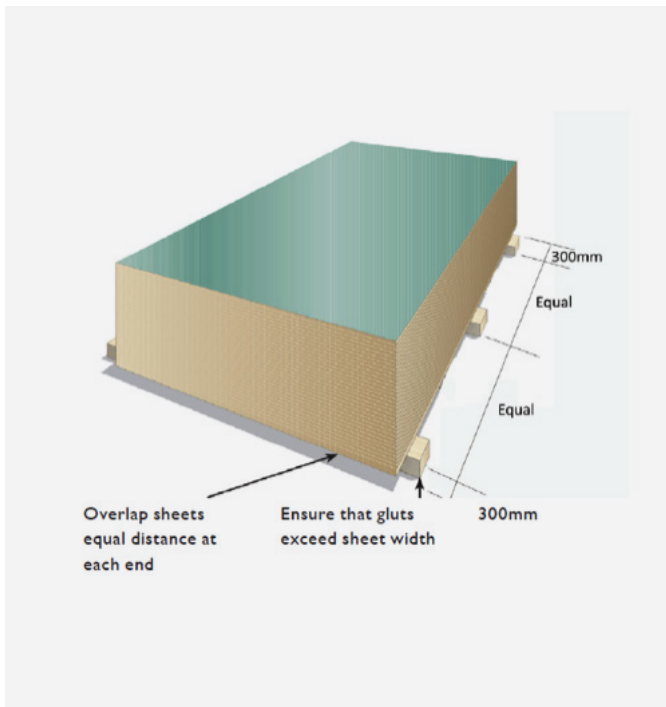
PureCoat™ by Bates Surfaces is not intended for use in exterior or semi-exterior (alfresco) situations.

- PureCoat™ by Bates Surfaces is not intended for use in a horizontal application.
- PureCoat™ by Bates Surfaces must not be used in high humidity or wet areas such as saunas or showers.
- PureCoat™ by Bates Surfaces substrate must not come in contact with any freestanding water. Failure to keep dry will affect the performance of the panel.
- Health and safety precautions (refer health and safety section of this tech data sheet).

## STORAGE AND HANDLING

PureCoat™ by Bates Surfaces is a high quality product and must be handled accordingly.

- Care of the panel is essential to protect the surface.
- To avoid damage to the sheets, lift rather than drag or slide panels over each other or across sharp or gritty surfaces.
- Leave protective film on panels intact, until installed and ready for use.
- PureCoat™ by Bates Surfaces must be stored away from moisture, heat and sunlight and extreme humidity or temperature.
- Sheets must be flat stacked on aligned bearers or gluts.
- Bearers or gluts must be of uniform thickness and must extend across the full width of the stack, see image below. PureCoat™ must be protected from the weather, dampness and direct wetting and must be stored inside.



## DURABILITY

- When stored, handled, used and maintained in accordance with this document, PureCoat™ by Bates Surfaces will meet the durability requirements of NZBC B2.3.1(c) for 5 years.
- Bates Surfaces will not be liable to any person for any product failure if the conditions as to storage, handling, use and maintenance of PureCoat™ by Bates Surfaces as outlined within this document are not complied with.

## DIMENSIONS

Thickness (mm)	18
Weight (kgs/m <sup>2</sup> )	13.7
Sheet Tolerances (mm)	
Length & width	+/- 2.00
Thickness	+0.50 / - 0.00
Squareness (maximum difference between diagonals)	2.00
Straightness (maximum deviation in plane along the edge)	1.50 per metre

## Working recommendation

### MACHINING

To obtain the best results when machining PureCoat™ by Bates Surfaces, avoid excessive speed rates. Guidelines for cutting PureCoat™ by Bates Surfaces.

Saw diameter (mm)	250	300	350	400
Saw RPM	4600	3800	3300	2900
# of teeth	80	96	108	120
Rim speed (m/sec)	47	56	66	75
Max feed rate (m/min)	7	8	9	10

These are guidelines taken from various tooling manufacturers. Machines fitted with a scribing saw or hollow ground saw blade will produce the best result directly from the sawing equipment. This will eliminate further work prior to edge finishing. Please consult with your tooling supplier to ensure safe operating speeds and the right style of blade is used for your equipment for the material being used.

# Guidelines for CNC machining of PureCoat™ Panels

## PANEL CUTTING

Cutter Type	12mm Spiral cutter	4mm Spiral cutter
Cutter Speed RPM	18000 rpm	18000 rpm
Max feed rate (m/min)	2.0 m/min	1.0 m/min

Recommended cutters are Vortex 1200 two flute upcut finishing spiral type or equal.

## PANEL BORING

Cutter Type	20mm Forstner bit	8mm Brad point	5mm Brad point
Cutter Speed RPM	4000 rpm	4000 rpm	4000rpm
Max feed rate (m/min)	1.3 m/min	1.0 m/min	1.5 m/min

## CHIP LOAD INFORMATION

The chip load is a measurement of the thickness of material removed by each cutting edge during a cut. This is a valuable piece of information which can then be used to calculate new setups.

Calculations are as follows: chip load = Feed Rate (millimetres per minute) / (RPM x 2 Flutes) Chip Load = 0.4233

Chip loads are based on material thickness of average size for the cutting edge length of the tool. These recommendations do not apply to thicker materials or tools with long cutting edge lengths. These chip loads are only a recommended starting point and may not accommodate all circumstances. We would strongly encourage you to consult your tool supplier directly on new tool applications.

## CUTTER SETUP AND CUTTING TIPS

Care should be taken to ensure that the scribe tips of the cutter are set below the lower face of the panel to avoid chipping of the lower face veneer.

For fine finishing an onion skin cut\* finish is recommended and for small pieces such as small drawer backs and cabinet rails, these should be tabbed to adjacent parts to hold these in place during the cutting process.

Tabs need be only thick enough and long enough to hold 0.3mm, 15-20mm long.

Once the cutting is completed the tabs may be snapped off and if necessary, a light sanding to remove.

\*Onion skin cutting can be achieved by cutting the panels approximately 0.5mm over size on all sides and by leaving approximately 0.5mm of the lower face veneer in tact. A second cut of the panel is then made to trim the panel to the final dimensions with the cutter penetrating beyond the lower face thus ensuring a clean and non chipping panel.

# Fastening

## SELECTED SCREWS

Always use screws specifically designed for use with Medium Density Fibreboard or particleboard e.g. Twinfast screws or Superscrews.

Drill a pilot hole slightly beyond the full depth of the screw penetration. Do not over-tighten screws. A drop of adhesive applied to the screw thread will increase holding power.

## FACE SCREWING

To avoid surface lifting, screws must not penetrate more than two thirds of panel thickness, e.g. 18mm panel = 12mm maximum penetration. Pilot hole diameters for Lakepine MDF.

Screw gauge	3	4	5	6
Pilot hole diameter in mm	1	2	2.4	2.6
Screw gauge	7	8	9	10
Pilot hole diameter in mm	2.7	3.0	3.3	3.5

# Door and panel installation

As the substrate is a wood based panel, it will react to changes in moisture, as will natural timber; and hence humidity variations will influence the extent to which doors and panels will bow. The effect of door bowing can be minimised by following these installation instructions.

Bowing can be further minimised by avoiding large door sizes and panels. For example, split pantry doors (rather than one tall door) and individual doors for bar panels are recommended.

## MINIMUM SPECIFICATION FOR NUMBER OF HINGES PER DOOR DEPENDING ON HEIGHT

Door height in mm	0 - 850	851 - 1350	1351 - 1800	1801 - 2400
Hinge quantity	2	3	4	5

## EDGE FINISHING

It is recommended that all edges of panels are edge finished. The most common PureCoat™ edging options are:

- PureCoat™ Mirror Gloss PVC edgetape
- PureCoat™ Mirror Glass laser edgetape

## PURECOAT™ PVC EDGETAPE

- Solid edging must be applied with an edge banding machine as cold pressing with contact adhesives is unsatisfactory.
- Solid edging comes primed for hot melt glue application or preglued for heat re-activated machines.
- Apply at feed rates and temperatures as per the mechanical edge bander and adhesive supplier's recommendations.

## PURECOAT™ LASER EDGETAPE

- A two-layer edgetape, applied using a highly efficient laser or hot air edgebander that melts a colour matched functional layer on the reverse side of the edgetape and welds it to the decorated board.
- Almost no visible glue line once applied to board giving a clean seamless look.
- Permanent and invisible functional bond to the board gives improved heat and water resistance when compared to conventional edgetape technology. Care must be taken when applying around tight curves.

## Care and cleaning

Regular cleaning requires only a wipe down with warm soapy water, followed up with dry cloth.

**NEVER USE ANY OF THE FOLLOWING ON PURECOAT™ BY BATES SURFACES FOR ANY REASON:**

Abrasive cleaners, such as:

- Jif®
- Ajax®
- Chemico®
- Brasso®
- Mr Muscle® cleaner
- Neat Janola®
- Wire wool
- Scourer pads
- Sand paper
- Oven cleaner

Common household detergents can be used in conjunction with the instructions provided. A soft cloth should always be used. Apply cleaning products to the cloth rather than directly onto the PureCoat™ by Bates Surfaces product. Do not use scouring pads or abrasive cloths or cleaners (e.g. steel wool) as these can damage the surface. Cleaning solutions are to be immediately rinsed from the surface after wiping with water. A mild streak-free glass cleaner together with a soft fibre cloth can be used to remove surface streaks.

The following must not be used:

- Strong acid/alkali solutions including but not limited to: caustic soda/oven cleaner/ NaOH, hydrochloric acid, sulphuric acid.
- Abrasive materials including but not limited to: abrasive

creams (Jif, Brasso, toothpaste), scouring pads (even if marked non abrasive), steelwool, hog/ hard nylon bristled brushes, sand paper.

- Concentrated solvents including but not limited to: Methyl ethyl ketone (MEK), cleaning solvents at greater than 10% concentration (e.g. meths, turpentine, kerosene).
- The removal of dust from the surface can be easily achieved with the use of an electrostatic dusting cloth (e.g. Johnson's Pledge Grab-it®).

## HEALTH AND SAFETY

Health and safety precautions must be taken when working with wood panel products.

Exposure to wood dust and/or formaldehyde may cause irritation to the eyes, respiratory system and skin, and may cause sensitisation resulting in asthma and/or in dermatitis.

Wood dust is classified as a known carcinogen. Repeated inhalation of wood dust over many years may cause nasal cancer. Formaldehyde has been evaluated by the International Agency for Research on Cancer (IARC) as a group 1, carcinogenic to humans.

Storage areas containing large quantities of Purecoat by Bates Surfaces must be adequately ventilated.

Work areas must be well ventilated and kept clean. Sawing, sanding and machining equipment must be fitted with dust extractors to ensure that dust levels are kept within standards laid down by Occupational Health and Safety New Zealand, or the specific country of use. If not, a dust mask conforming with AS/NZS 1715 and AS/NZS 1337 must be worn.

Offcuts, shavings and dust must be disposed of in a manner which avoids the generation of dust and in accordance with the requirements of local waste authorities.

In end use applications all product surfaces exposed to occupied space must be sealed.

# Technical support

As not all product use options can be described herein, additional end use and specifying information is available as a complimentary service.

For further information, please phone Bates Surfaces Customer Services on 0800 269 251 or email [sales@batessurfaces.co.nz](mailto:sales@batessurfaces.co.nz)

The information contained in this technical data sheet must not be reproduced or published in whole or in part without written prior consent of Bates Surfaces.

Bates Surfaces reserves the right to revise without notice any information contained in this technical data sheet.

PureCoat™ by Bates Surfaces is marketed and distributed by Bates Surface Solutions, a division of AJ Bates Ltd. This technical data sheet supersedes all previous issues.

