

# SAPPHIRE

BESPOKE SOLUTIONS FOR ALUMINIUM

## ANODISING COLOUR BOOK



ANODISED FINISHES FOR  
INTERIOR & EXTERIOR APPLICATIONS

## AUSTRALIA

### NEW SOUTH WALES

#### **Sapphire Aluminium Pty Ltd**

MANUFACTURERS FOR AUST & ASIA

19 -29 Pile Road,

Somersby Industrial Estate

SOMERSBY New South Wales 2250

Phone : 61 2 4304 3555  
Facsimile : 61 2 4304 3533  
email : sapsom@sapal.com.au

## VICTORIA

#### **Sapphire Aluminium Pty Ltd**

TECHNICAL INFORMATION AND SPECIFICATION

Unit 12, 231 Bay Road

Sandringham Victoria 3191

Phone : 61 3 9555 4322  
Facsimile : 61 2 9555 2022  
email : sapvic@sapal.com.au

[www.sapal.com.au](http://www.sapal.com.au)

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### Proven Durability

There are many examples around the world of buildings more than 50 years old exhibiting the proven longevity of the anodic film.

### Cost

Anodising in general is less expensive than painted coatings when the increased life-span of the coating is taken into account.

### Hardness

Abrasion and scratch resistance on anodising is far superior to all other applied coatings currently in use. To test this for yourself simply rub a stainless scourer on an exterior anodised sample and compare the finish to a painted sample rubbed with the same scourer.

### Corrosion Resistance

Anodising out performs all other coatings for corrosion resistance. Unlike painted finishes it is impervious giving it enhanced performance, especially against salt spray (chlorides) and is therefore an excellent choice for coastal locations.

### Film Integrity

The Anodised coating becomes integral with the aluminium it is applied to, so it cannot peel, chip, flake or blister.

### True Metallic Appearance

Anodising gives aluminium a deep and rich metallic appearance that enhances the natural beauty of aluminium. This is because an anodised coating is translucent, and one can see the base metal underneath the coating.

### Enhanced Resistance to UV

Anodising displays excellent long term performance to sunlight. All organic (Paint) coatings will eventually fail due to exposure to ultraviolet light.

### Maintenance

Anodising can be renewed by cleaning and is cheaper to maintain over the lifetime of a building. Anodising can often be restored when it looks like it has failed, many projects after twenty years of neglect have been brought back to as new condition through cleaning. A good example of this is Jardine House in Hong Kong. Importance should always be placed on instituting a complete preventative maintenance system for the external of the building that goes beyond just cleaning the glass. Sapphire is happy to assist with this process upon request.

### Environmental

Anodising is compatible with today's environmental concerns. The chemicals from anodising can be used by local waste water authorities treatment facilities. The aluminium sulfate from anodising plants' effluent actually improves the solids settling efficiency of some waste water treatment plants. Anodising emits no ozone producing solvents (VOCs), and there are no heavy metals involved in the process.

## RECOMMENDED THICKNESS GRADES AND WASHING REQUIREMENTS

Description	Thickness Grade	Cleaning Intervals (max)
Interior	10	12 months
Mild	15	12 months
Moderate	20	6 months
Tropical	25	6 months
Severe	25	1 - 3 months

Coating thickness is the most significant indicator of durability for anodised coatings. Often there is no specification for coating thickness just the colour for example "Clear Anodised" and the "cheapest thing" is then often installed (10um), and in a few short years the finish is pitted, stained and eroded. If a thickness of 25um is specified for external use, the coating will last at least four times longer.

Sapphire recommends a coating thickness of 25um for all exterior finishes as it is often cheaper in the life of the product due to cheaper maintenance costs represented by longer cleaning intervals combined with a longer life for the product

Remember anodising often represents less than **1%** of the project cost, but often represents **100%** of the projects appearance.

**MILD**

Applies to all areas such as rural, remote from the coast and industrial activity, excluding the tropics.

**MODERATE**

Applies to all areas more than 25 Kilometres from the coast with light marine influence and or light industrial pollution.

**TROPICAL**

Tropical environments are those generally located between the tropic of Cancer and tropic of Capricorn and are subject to high levels of humidity, except where directly affected by salt spray or industrial pollution.

**SEVERE****1. MARINE**

Applies to areas influenced by a moderate extent of coastal salts. Factors that should also be considered are winds, topography and vegetation. This zone generally extends from about 500 metres from the coast up to 20 km inland, depending on conditions.

**2. INDUSTRIAL**

Applies to areas surrounding major industrial complexes inland from the sea.

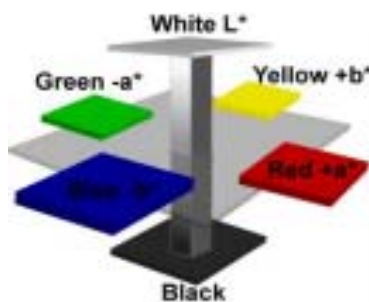
**PLEASE NOTE**

THIS INFORMATION IS PROVIDED AS A GENERAL GUIDE ONLY AND OTHER FACTORS SUCH AS MICRO CLIMATIC AND ENVIRONMENTAL CONDITIONS SHOULD ALWAYS BE TAKEN INTO ACCOUNT WHEN SELECTING AN APPROPRIATE COATING THICKNESS AND CLEANING PROGRAM. FOR FURTHER INFORMATION REFER TO THE STANDARD THAT APPLIES TO YOUR REGION (REFER TO SPECIFYING SAPPHIRE'S COLOUR RANGE) OR CONTACT YOUR LOCAL SAPPHIRE REPRESENTATIVE. FOR EXAMPLE, APPROXIMATELY NINETY PERCENT OF AUSTRALIA'S AND NEW ZEALAND'S POPULATION LIVE IN COASTAL REGIONS.

Colour is a sensation and as such only exists in the brain; although we might believe that we all have similar perceptions of colour we do not know that this is true. Colour is all around us, and affects our judgement when we make decisions about objects including cars, clothes, medicine and even food.

Colour perception varies from person to person, but it is estimated that we can discriminate between seven and ten million colours, however the eye-brain can be deceived by secondary factors such as ambient illumination, background colour, sample size, observer age, mood, health and medication. Or perception can be altered by defective colour vision, which affects 8% of males and 0.4% of females.

Anodising is a batch produced process that accelerates, expands and controls the naturally occurring process of oxidation of aluminium. This process has many factors that make up the colour that you see and these can vary from batch to batch or be affected by the material that we are applying the coating to. Sapphire has developed a clear set of guidelines by which we produce any colour from our colour range or custom colour for specific projects. To help avoid unnecessary arguments or disappointment with our clients we are implementing computer controlled assessment of all colours produced from our plant which will replace the traditional method of visual inspection.



All batches are now checked with a colour photospectrometer which takes a flash reading of a colour and converts the colour into a digital figure. This figure can then be compared to another batch and the difference calculated and displayed in the form of  $\Delta E$  ( $\Delta E_{cmc}$ ). Sapphire uses an internationally recognised algorithm called cmc to express this figure which is automatically displayed on the display panel of our photospectrometer for easy reference.

Our quality auditors can now tell the difference between one batch to another with seconds reliably against an independent instrument. This will only enhance the ability of anodising to be produced consistently within a tonality range.

### Colour Variation

To create clear guidelines for acceptable variation in colour from batch to batch, Sapphire will use a measure of  $\pm 3 \Delta E_{cmc}$  from our master batch sample in accordance with AAMA 611-98 and ISO 7977.

### Custom Colours

If you cannot find a colour from our extensive range of colours, Sapphire can create a custom colour or colours for large projects. We will require a sample of the material or colour you are trying to replicate or create so that we may be able to produce the new anodised colour.

Please allow 14 days for us to develop the finish for your project, For more information contact your local sales representative.

## DEFINITION OF SAPPHIRE'S COLOUR CODES

When you study Sapphire's colour book or samples you will find that the reference codes are preceded by a series of letters followed by a series of numbers. These codes are a carefully thought out system which enables us to quickly identify what type of finish and colour you require as explained herein.

### M = Matt

Matt is the process in which we chemically treat the aluminium to create microscopically, a very rough surface. This rough surface cannot be felt after anodising but it does almost totally disperse light rays hitting that surface giving the dull or matt finish.

Specification example M337 = Matt Chocolate  
M 337

### B = Bright

Bright is the process in which we give the aluminium a chemically (polished) bright reflective finish. This is done by microscopically levelling the surface so that light rays hitting the surface are reflected back on a direct path giving the surface a bright or highly reflective appearance. It should be noted that any damage even minor damage that is visible to the naked eye will not be removed by this process and require mechanical polishing or linishing if it is not to be seen.

Specification example B337 = Bright Chocolate  
B 337

### P = Polished

Polishing is a separate process which is performed prior to chemical (polishing) brightening. This is done by mechanically polishing the aluminium by a buffing process. This removes minor to medium scratches, die lines and marks that are often present on aluminium. This process is specified when the very highest standard of surface finish is required.

Specification example PB337 = Polished Bright Chocolate  
P B 337

### L = Linished

Linishing is also a separate process which is performed prior to chemical (polishing) brightening or matt processes by passing the aluminium under an abrasive belt to give a coarse uniformed linished appearance as is generally seen on picture frame extrusions.

Specification example LB337 = Linished Bright Chocolate or LM337 = Linished Matt Chocolate  
L B 337 L M 337

### Please Note !

Linishing can only be performed on flat surfaces up to 150mm in width for extrusions or up to 1200mm for sheet. Linishing is also not recommended for partitioning or furniture as it can produce sharp edges.

### B = Brushed

Brushing is also a separate process which is performed prior to chemical (polishing) brightening or matt processes by passing the aluminium under an abrasive scotchbrite belt to give a uniformed brushed appearance.

Specification example BB337 = Brushed Bright Chocolate or BM337 = Brushed Matt Chocolate  
B B 337 B M 337

### FB = Fine Brushed

Fine Brushing is also a separate process which is performed prior to chemical (polishing) brightening or matt by passing the aluminium under a fine abrasive scotchbrite belt to give a uniformed fine brushed appearance.

Specification example FB337 = Fine Brushed Bright Chocolate or BM337 = Fine Brushed Matt Chocolate  
F B B 337 F B M 337

### FB = Fine Brushed

Fine Brushing is also a separate process which is performed prior to chemical (polishing) brightening or matt by passing the aluminium under a fine abrasive scotchbrite belt to give a uniformed fine brushed appearance.

Specification example FB337 = Fine Brushed Bright Chocolate or BM337 = Fine Brushed Matt Chocolate  
F B B 337 F B M 337

### Please Note !

Brushing, Fine Brushing and Ultra Fine Brushing can only be performed on flat surfaces up to 150mm in width for extrusions



In order that you receive the finish you desire it is important to specify the finish, colour, coat thickness and alloy grade that the finish is to be applied to.

To assist you with this process we have provided you with sample specifications for anodised coatings for interior and exterior use. Sapphire assists with this process through the provision of Colourboard samples labelled with critical information required to identify the correct finish. (refer to ColourBoard Sample Ordering)

## Interior Anodising Specification

The specified anodising finish shall be

Colour	-	<b>Matt Chocolate</b>
Code	-	<b>M337</b>
Extrusion Alloy	-	<b>6060T5 or 6063T5 (Primary billet - no remelt allowed)</b>
Sheet Alloy	-	<b>5005 H34 (Primary billet - no remelt allowed)</b>
Supplier	-	<b>Sapphire Aluminium</b>

All coatings are to comply with *X standard* (insert one of the standards listed below)

Certificate of compliance to be obtained from Sapphire Aluminium Industries and provided to the architect/designer by the successful tenderer as proof of conformance with the above specification.

## Exterior Anodising Specification

The specified anodising finish shall be

Colour	-	<b>Matt Bluefin</b>
Code	-	<b>M6697 - AA25</b>
Coating Thickness	-	<b>25 microns</b>
Extrusion Alloy	-	<b>6060T5 or 6063T5 (Primary billet - no remelt allowed)</b>
Sheet Alloy	-	<b>5005H34 (Primary billet - no remelt allowed)</b>
Supplier	-	<b>Sapphire Aluminium</b>

All coatings are to comply with *X standard* (insert one of the standards listed below)

Certificate of compliance to be obtained from Sapphire Aluminium Industries and provided to the architect/designer by the successful tenderer as proof of conformance with the above specification.

X	=	One of the following anodising standards that is applicable to your region
		AS1231-2000 - Australia
		AAMA 611-98 - American Architectural Manufacturers Association
		ASTM B580-79(2000) - ASTM International
		BS EN 12373-2001 - British & European Standards
		ISO7599-1983 - International Standard



To order any of Sapphire's unique finishes you may use one the following option

## Option 1 Internet Ordering

### Colour Samples

Sapphire produces colour samples and stocks these to enable quick and easy access for colourboard presentation and specification.



FRONT



BACK

The colour samples are 65mm wide x 80mm high x 1.6mm in thickness. The sample is labelled with all the relevant information required to identify it.

#### Please Note!

Charges apply for any orders for non standard size samples. This is necessary as they have to be manufactured by themselves and as such a lead time of approximately Ten working days applies. P.O.A.

### Internet Ordering

- 1) Proceed to Sapphire's Website by typing following address

<http://www.sapal.com.au/sample-categories.html>

- 2) Select **Interior or Exterior Tab** which will take you to our colour range
- 3) Simply click on any of the colours you wish to order and these will be added to your shopping cart. (remember no charge applies for our standard samples)
- 4) When you have finished selecting your range of samples go to the check out and fill in all the details that are marked with an asterix.  
(Your order will not proceed until all this information is provided. This information is vital so that we are able to correctly advise you of the suitability of your finish choice for your project. It also helps us to track the finish along the complex path of tendering to ensure that you get what you specify)

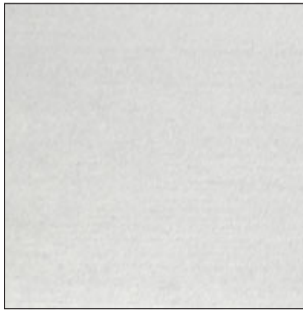
Please Note : Samples are provided for specification and intended use of Sapphire finishes, they are not supplied for simple colour representation or for copying to another similar finish.



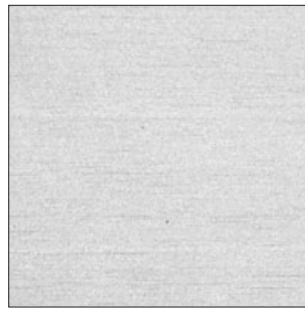
The following colours are listed as suitable for interior use only because they are coloured by immersion in organic dyes. These dyes are not resistant to long term UV exposure. In the same way that colours in your clothing fades over time, these colours will also fade if used externally.

As these colours are used internally, they are displayed in coating thicknesses of 10um - 20um. Thicker coatings are available upon request. For more information contact your local Sapphire representative.





ICE  
FINISH : MATT  
CODE : M201  
LRV : 70



MATT ICE  
FINISH : FINE BRUSHED  
CODE : FBM201  
LRV : 70



MATT ICE  
FINISH : BRUSHED  
CODE : BM201  
LRV : 70



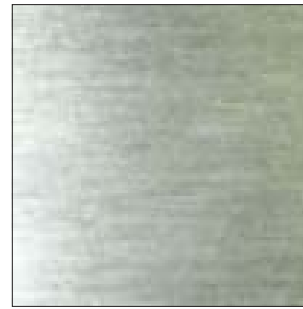
MATT ICE  
FINISH : LINED GRADE 4  
CODE : LM201  
LRV : 70



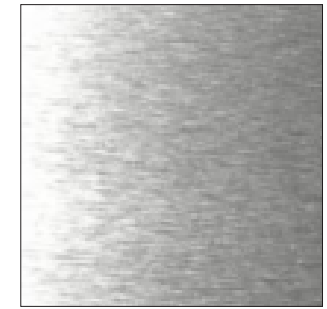
CHROME  
FINISH : POLISHED BRIGHT  
CODE : PB200  
LRV : 75



BRIGHT CHROME  
FINISH : FINE BRUSHED  
CODE : FBB200  
LRV : 75



BRIGHT CHROME  
FINISH : BRUSHED  
CODE : BB200  
LRV : 75



BRIGHT CHROME  
FINISH : LINED  
CODE : LB200  
LRV : 75

## THESE FINISHES ARE DISPLAYED AS 10 MICRONS FOR INTERIOR USE

### PLEASE NOTE!

POLISHED FINISHES	-	AVAILABLE FOR ALL EXTRUSIONS UPTO 200MM IN WIDTH AND 100MM IN HEIGHT
FINE BRUSHED FINISHES	-	AVAILABLE FOR ALL FLAT FACES ON EXTRUSION UPTO 150MM WIDE AND 100MM IN HEIGHT
BRUSHED FINISHES	-	AVAILABLE FOR ALL FLAT FACES ON EXTRUSION UPTO 150MM WIDE AND 100MM IN HEIGHT
LINED FINISHES	-	AVAILABLE FOR ALL FLAT FACES ON EXTRUSION UPTO 150MM WIDE AND 100MM IN HEIGHT AND ALUMINIUM SHEET UP TO 1200MM WIDE LINED DIRECTION ALONG THE LENGTH (PLEASE NOTE THAT LINED FINISHES WHEN USED EXTERNALLY WILL TRAP DIRT AND GRIME THAT WILL DETRACT FROM THE APPEARANCE)

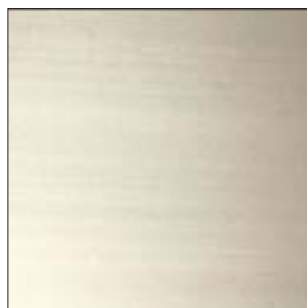
THE ABOVE FINISHES ARE AVAILABLE ON ALL OUR COLOURS IN OUR RANGE SEE HOW TO ORDER TO SPECIFY THE CORRECT CODE

Please Note: Anodising is a unique finish that produces subtle changes of colour intensity according to the light source, direction and Alloy type. The colours shown are a screen representation only. For specification purposes, please order a colour sample from our website

# SAPPHIRE

BESPOKE SOLUTIONS FOR ALUMINIUM

INTERIOR USE



ROMAN BRONZE  
FINISH : MATT  
CODE : M221  
LRV : 56



ROMAN BRONZE  
FINISH : POLISHED BRIGHT  
CODE : PB221  
LRV : 62



BRINDISI  
FINISH : MATT  
CODE : M222  
LRV : 51



BRINDISI  
FINISH : POLISHED BRIGHT  
CODE : PB222  
LRV : 56



BEETLE  
FINISH : MATT  
CODE : M225  
LRV : 37



BEETLE  
FINISH : POLISHED BRIGHT  
CODE : PB225  
LRV : 38



COPPER  
FINISH : MATT  
CODE : M326  
LRV : 24



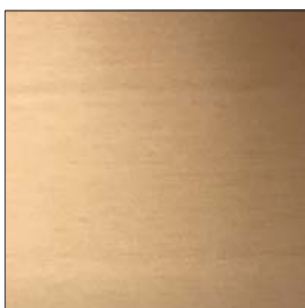
COPPER  
FINISH : POLISHED BRIGHT  
CODE : PB326  
LRV : 26



QUARTZ  
FINISH : MATT  
CODE : M3721  
LRV : 35



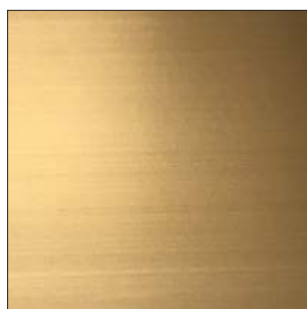
QUARTZ  
FINISH : POLISHED BRIGHT  
CODE : PB3721  
LRV : 55



TUSCAN ROSE  
FINISH : MATT  
CODE : M3722  
LRV : 34



TUSCAN ROSE  
FINISH : POLISHED BRIGHT  
CODE : PB3722  
LRV : 35



TAWNY  
FINISH : MATT  
CODE : M3725  
LRV : 24



TAWNY  
FINISH : POLISHED BRIGHT  
CODE : PB3725  
LRV : 26

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## ISSUE NO 5

DATE : 01/06/2020  
REPLACES : 01/04/2017  
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BESPOKE SOLUTIONS FOR ALUMINIUM

INTERIOR USE



MAKO  
FINISH : MATT  
CODE : M231  
LRV : 39



MAKO  
FINISH : POLISHED BRIGHT  
CODE : PB231  
LRV : 49



GUNMETAL  
FINISH : MATT  
CODE : M232  
LRV : 22



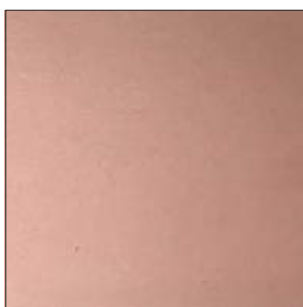
GUNMETAL  
FINISH : POLISHED BRIGHT  
CODE : PB232  
LRV : 33



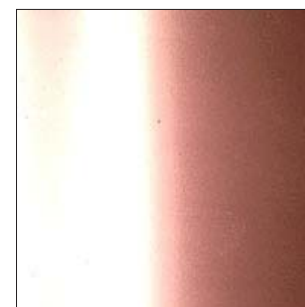
CHOCOLATE  
FINISH : MATT  
CODE : M337  
LRV : 13



CHOCOLATE  
FINISH : POLISHED BRIGHT  
CODE : PB337  
LRV : 15



MUSHROOM  
FINISH : MATT  
CODE : M3733  
LRV : 20



MUSHROOM  
FINISH : POLISHED BRIGHT  
CODE : PB3733  
LRV : 25



BLUSH  
FINISH : MATT  
CODE : M271  
LRV : 53



BLUSH  
FINISH : POLISHED BRIGHT  
CODE : PB271  
LRV : 59



PASSION  
FINISH : MATT  
CODE : M275  
LRV : 35



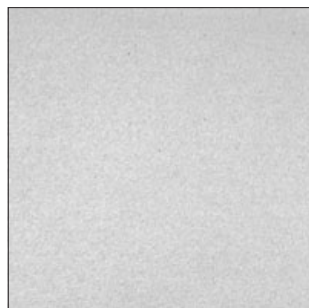
PASSION  
FINISH : POLISHED BRIGHT  
CODE : PB275  
LRV : 41

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# SAPPHIRE

BESPOKE SOLUTIONS FOR ALUMINIUM

## INTERIOR USE



SILVER GREY  
FINISH : MATT  
CODE : M3533  
LRV : 29



SILVER GREY  
FINISH : POLISHED BRIGHT  
CODE : PB3533  
LRV : 46



CHARCOAL  
FINISH : MATT  
CODE : M3537  
LRV : 18



CHARCOAL  
FINISH : POLISHED BRIGHT  
CODE : PB3537  
LRV : 23



PENNY BLACK  
FINISH : MATT  
CODE : M3539  
LRV : 10



PENNY BLACK  
FINISH : POLISHED BRIGHT  
CODE : PB3539  
LRV : 10



SEASPRAY  
FINISH : MATT  
CODE : M251  
LRV : 53



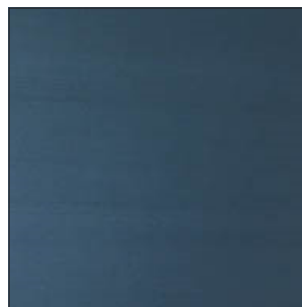
SEASPRAY  
FINISH : POLISHED BRIGHT  
CODE : PB251  
LRV : 58



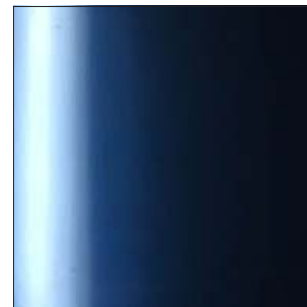
BLUEBOTTLE  
FINISH : MATT  
CODE : M252  
LRV : 17



BLUEBOTTLE  
FINISH : POLISHED BRIGHT  
CODE : PB252  
LRV : 28



MIDNIGHT  
FINISH : MATT  
CODE : M357  
LRV : 8



MIDNIGHT  
FINISH : POLISHED BRIGHT  
CODE : PB357  
LRV : 6

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### ISSUE NO 5

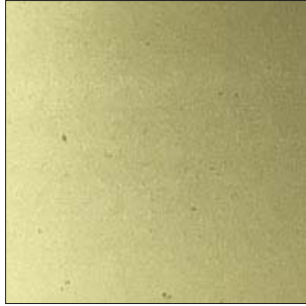
DATE : 01/06/2020  
REPLACES : 01/04/2017  
SUBJECT TO CHANGE WITHOUT NOTICE



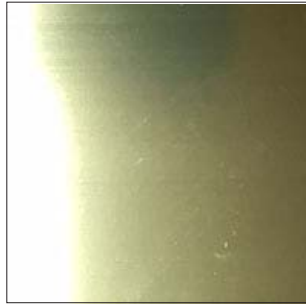
# SAPPHIRE

BESPOKE SOLUTIONS FOR ALUMINIUM

## INTERIOR USE



DESERT SUN  
FINISH : MATT  
CODE : M3472  
LRV : 65



DESERT SUN  
FINISH : POLISHED BRIGHT  
CODE : PB3472  
LRV : 63



SUNSET  
FINISH : MATT  
CODE : M3474  
LRV : 32



SUNSET  
FINISH : POLISHED BRIGHT  
CODE : PB3474  
LRV : 37



PUMPKIN  
FINISH : MATT  
CODE : M3875  
LRV : 21



PUMPKIN  
FINISH : POLISHED BRIGHT  
CODE : PB3875  
LRV : 38



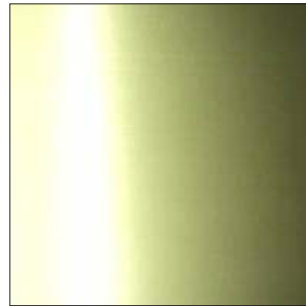
TANGERINE  
FINISH : MATT  
CODE : M6671 - AA25  
LRV : 16



TANGERINE  
FINISH : POLISHED BRIGHT  
CODE : PB6671 - AA25  
LRV : 14



ANTIQUE BRASS  
FINISH : MATT  
CODE : M3434  
LRV : 45



ANTIQUE BRASS  
FINISH : POLISHED BRIGHT  
CODE : PB3434  
LRV : 50



HEMP  
FINISH : MATT  
CODE : M3633  
LRV : 30



HEMP  
FINISH : POLISHED BRIGHT  
CODE : PB3633  
LRV : 39



BURNISHED BRONZE  
FINISH : MATT  
CODE : M3439  
LRV : 25



BURNISHED BRONZE  
FINISH : POLISHED BRIGHT  
CODE : PB3439  
LRV : 25



BURNISHED BRONZE  
FINISH : MATT  
CODE : M3439  
LRV : 25



BURNISHED BRONZE  
FINISH : POLISHED BRIGHT  
CODE : PB3439  
LRV : 25

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Sapphire is pleased to offer a wide range of colours suitable for exterior use. Sapphire has applied technology that has its origins from the 1960's and has come up with a colour range that is fitting for a new century and new millennium.

The following colours are listed as suitable for interior and exterior use because they are coloured by immersion in specially developed metallic complex dyes specifically developed for anodising over many decades.

There are several examples around the world in excess of thirty years that have utilising the basic colour pigments that Sapphire blends to create the stunning colour palette for you the architect or designer to use on your next project.

If you are building a project that requires longevity, combined with low maintenance then insist on Sapphire's exclusive external colour range for your next project.

## UV Performance

Sapphires exterior colour range exhibits excellent weathering characteristics against UV radiation and there are examples in the field confirming this even after 30 years exposure. Anodised finishes are generally far superior to other competing finishes in this regard. As with all applied coloured finishes, performance will vary depending on shade, aspect and location, however it is reasonable to expect that on average, a loss of colour intensity of 25% may be expected over 10 years. When you compare this to other competing finishes, and couple this with the superior corrosion protection of anodised finishes, the choice is clear!

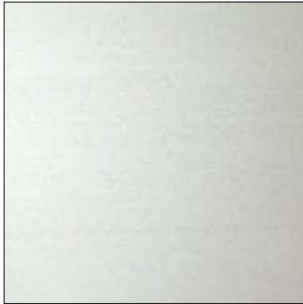
## Corrosion Performance

Sapphire's anodised coatings exhibit superior corrosion resistance as all our coatings for exterior use are converted to 25 microns of Aluminium Oxide coating that is sealed with the latest in sealing technologies ensuring that our coatings conform with or exceed the requirements of the Australian Standard for anodised coatings AS1231-2000.

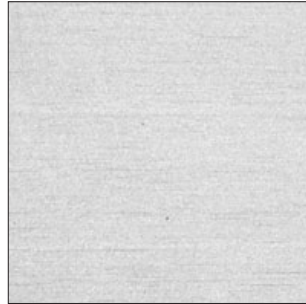
## Abrasion Resistance

Sapphire's coatings have undergone rigorous testing for abrasion resistance and unlike other coatings that rely on tests with lead pencils, Sapphire's coatings were tested and passed in accordance with BS EN12373-9:1999 which utilizes a rotary jig with emery cloth that passes over the surface in 400 double strokes with 400 grams of pressure applied. The superior abrasion resistance combined with superior corrosion resistance of Sapphires Exterior finishes makes them ideal for coastal use where coatings are subjected to sand and salt blasting.

For more information contact your local Sapphire representative.



ICE  
FINISH : MATT  
CODE : M601  
LRV : 70



MATT ICE  
FINISH : FINE BRUSHED  
CODE : FBM601  
LRV : 70



MATT ICE  
FINISH : BRUSHED  
CODE : BM601  
LRV : 70



MATT ICE  
FINISH : LINED GRADE 4  
CODE : LM601  
LRV : 70



CHROME  
FINISH : POLISHED BRIGHT  
CODE : PB600  
LRV : 75



BRIGHT CHROME  
FINISH : FINE BRUSHED  
CODE : FBB600  
LRV : 75



BRIGHT CHROME  
FINISH : BRUSHED  
CODE : BB600  
LRV : 75



BRIGHT CHROME  
FINISH : LINED GRADE 4  
CODE : LB600  
LRV : 75

## PLEASE NOTE!

POLISHED FINISHES  
FINE BRUSHED FINISHES  
BRUSHED FINISHES  
LINED FINISHES

- AVAILABLE FOR ALL EXTRUSIONS UP TO 200MM IN WIDTH AND 100MM IN HEIGHT
- AVAILABLE FOR ALL FLAT FACES ON EXTRUSION UP TO 150MM WIDE AND 100MM IN HEIGHT
- AVAILABLE FOR ALL FLAT FACES ON EXTRUSION UP TO 150MM WIDE AND 100MM IN HEIGHT
- AVAILABLE FOR ALL FLAT FACES ON EXTRUSION UP TO 150MM WIDE AND 100MM IN HEIGHT AND ALUMINIUM SHEET UP TO 1200MM WIDE LINED DIRECTION ALONG THE LENGTH  
(PLEASE NOTE THAT LINED FINISHES WHEN USED EXTERNALLY WILL TRAP DIRT AND GRIME THAT WILL DETRACT FROM THE APPEARANCE)

THE ABOVE FINISHES ARE AVAILABLE ON ALL OUR COLOURS IN OUR RANGE SEE HOW TO ORDER TO SPECIFY THE CORRECT CODE

Please Note: Anodising is a unique finish that produces subtle changes of colour intensity according to the light source, direction and Alloy type. The colours shown are a screen representation only. For specification purposes, please order a colour sample from our website

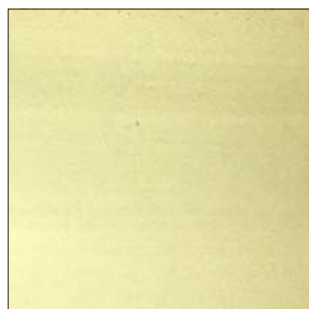
## ISSUE NO 5

DATE : 01/06/2020  
REPLACES : 01/04/2017  
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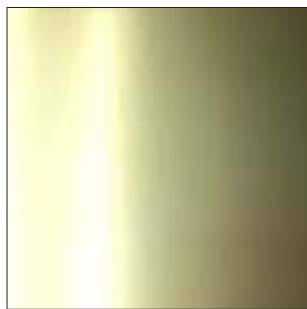
# SAPPHIRE

BESPOKE SOLUTIONS FOR ALUMINIUM

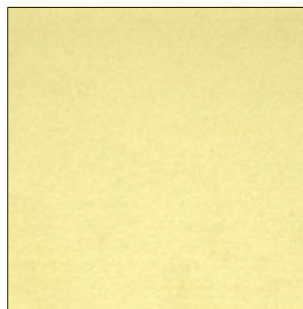
INTERIOR/EXTERIOR USE



SANDDUNE  
FINISH : MATT  
CODE : M6641 - AA25  
LRV : 55



SANDDUNE  
FINISH : POLISHED BRIGHT  
CODE : PB6641 - AA25  
LRV : 60



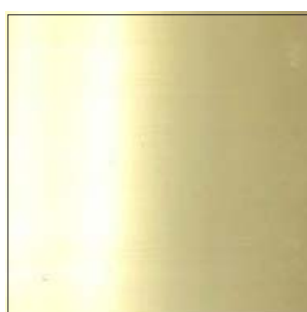
CHAMPAGNE  
FINISH : MATT  
CODE : M641 - AA25  
LRV : 60



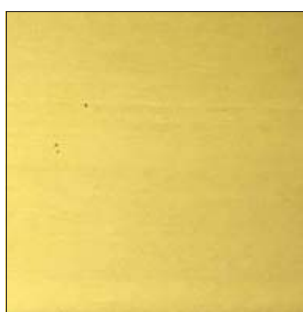
CHAMPAGNE  
FINISH : POLISHED BRIGHT  
CODE : PB641 - AA25  
LRV : 65



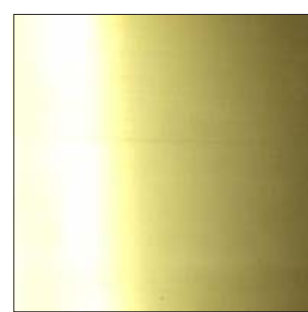
STRAW  
FINISH : MATT  
CODE : M645 - AA25  
LRV : 55



STRAW  
FINISH : POLISHED BRIGHT  
CODE : PB645 - AA25  
LRV : 60



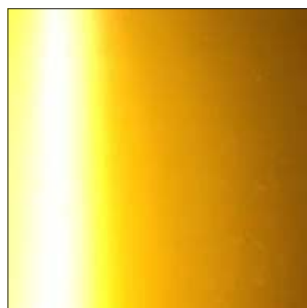
WATTLE  
FINISH : MATT  
CODE : M645 - AA25  
LRV : 51



WATTLE  
FINISH : POLISHED BRIGHT  
CODE : PB645 - AA25  
LRV : 57



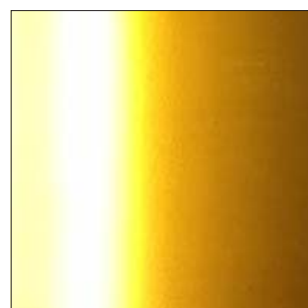
CITRUS  
FINISH : MATT  
CODE : M647 - AA25  
LRV : 30



CITRUS  
FINISH : POLISHED BRIGHT  
CODE : PB647 - AA25  
LRV : 33



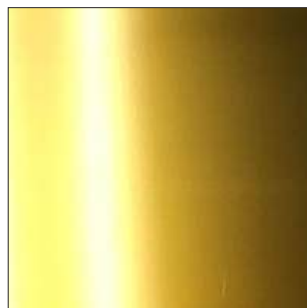
CURRY  
FINISH : MATT  
CODE : M6643  
LRV : 30



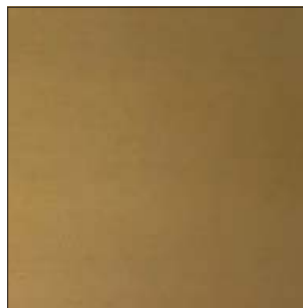
CURRY  
FINISH : POLISHED BRIGHT  
CODE : PB6643  
LRV : 36



CINNAMON  
FINISH : MATT  
CODE : M6645  
LRV : 25



CINNAMON  
FINISH : POLISHED BRIGHT  
CODE : PB6645  
LRV : 29



MOCHA  
FINISH : MATT  
CODE : M6647 - AA25  
LRV : 8



MOCHA  
FINISH : POLISHED BRIGHT  
CODE : PB6647 - AA25  
LRV : 11

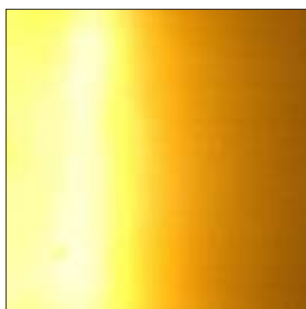
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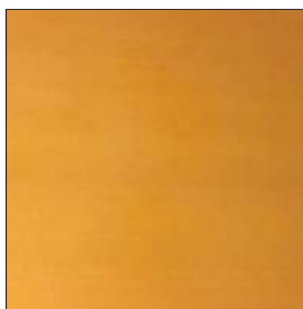
DATE : 01/06/2020  
REPLACES : 01/04/2017  
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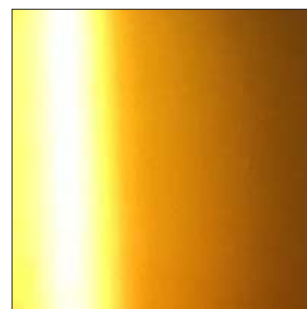
TERRACOTTA  
FINISH : MATT  
CODE : M6646  
LRV : 37



TERRACOTTA  
FINISH : POLISHED BRIGHT  
CODE : PB6646  
LRV : 39



OCHRE  
FINISH : MATT  
CODE : M6648 - AA25  
LRV : 21



OCHRE  
FINISH : POLISHED BRIGHT  
CODE : PB6648 - AA25  
LRV : 23



BLOOD MOON  
FINISH : MATT  
CODE : M6646 - AA25  
LRV : 15



BLOOD MOON  
FINISH : POLISHED BRIGHT  
CODE : PB6646 - AA25  
LRV : 20

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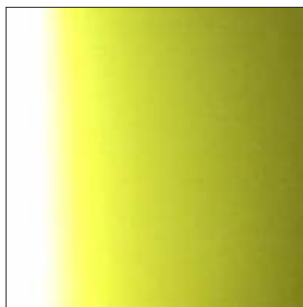
# SAPPHIRE

BESPOKE SOLUTIONS FOR ALUMINIUM

INTERIOR/EXTERIOR USE



PARADISI  
FINISH : MATT  
CODE : M683 - AA25  
LRV : 59



PARADISI  
FINISH : POLISHED BRIGHT  
CODE : PB683 - AA25  
LRV : 68



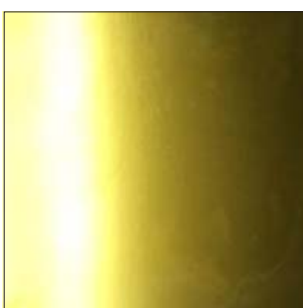
PISTACHIO  
FINISH : MATT  
CODE : M6683 - AA25  
LRV : 44



PISTACHIO  
FINISH : POLISHED BRIGHT  
CODE : PB6683 - AA25  
LRV : 51



BAMBOO  
FINISH : MATT  
CODE : M6685  
LRV : 27



BAMBOO  
FINISH : POLISHED BRIGHT  
CODE : PB6685  
LRV : 36



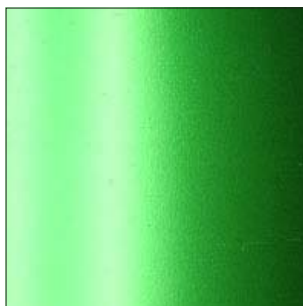
KELP  
FINISH : MATT  
CODE : M6687  
LRV : 12



KELP  
FINISH : POLISHED BRIGHT  
CODE : PB6687  
LRV : 12



SUBLIME  
FINISH : MATT  
CODE : M6895  
LRV : 27



SUBLIME  
FINISH : POLISHED BRIGHT  
CODE : PB6895  
LRV : 26



ENVY  
FINISH : MATT  
CODE : M6897  
LRV : 12



ENVY  
FINISH : POLISHED BRIGHT  
CODE : M6897  
LRV : 13



SPINACH  
FINISH : MATT  
CODE : M6898 - AA25  
LRV : 10



SPINACH  
FINISH : POLISHED BRIGHT  
CODE : PB6898 - AA25  
LRV : 10



SEAWEED  
FINISH : MATT  
CODE : M6899 - AA25  
LRV : 8



SEAWEED  
FINISH : POLISHED BRIGHT  
CODE : PB6899 - AA25  
LRV : 9

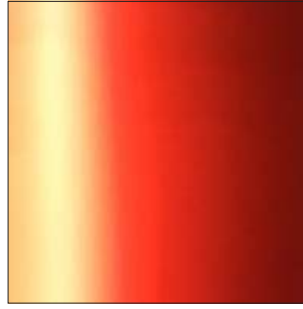
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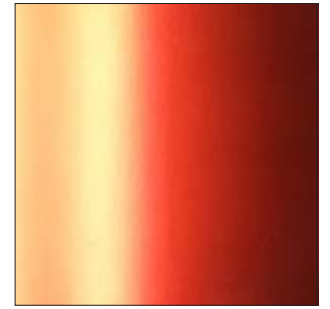
TORNADO  
FINISH : MATT  
CODE : M678 - AA25  
LRV : 14



TORNADO  
FINISH : POLISHED BRIGHT  
CODE : PB678 - AA25  
LRV : 15



TABASCO  
FINISH : MATT  
CODE : M6673 - AA25  
LRV : 14



TABASCO  
FINISH : POLISHED BRIGHT  
CODE : PB6673 - AA25  
LRV : 15



CHILLI  
FINISH : MATT  
CODE : M6675 - AA25  
LRV : 9



CHILLI  
FINISH : POLISHED BRIGHT  
CODE : PB6675 - AA25  
LRV : 11



PIEMENTO  
FINISH : MATT  
CODE : M6677 - AA25  
LRV : 6



PIEMENTO  
FINISH : POLISHED BRIGHT  
CODE : PB6677 - AA25  
LRV : 7



MULBERRY  
FINISH : MATT  
CODE : M6679 - AA25  
LRV : 6



MULBERRY  
FINISH : POLISHED BRIGHT  
CODE : PB6679 - AA25  
LRV : 4



RASPBERRY  
FINISH : MATT  
CODE : M6795 - AA25  
LRV : 8



RASPBERRY  
FINISH : POLISHED BRIGHT  
CODE : PB6795 - AA25  
LRV : 7



PLUM  
FINISH : MATT  
CODE : M6977 - AA25  
LRV : 8



PLUM  
FINISH : POLISHED BRIGHT  
CODE : PB6977 - AA25  
LRV : 10



BLUEBERRY  
FINISH : MATT  
CODE : M6797 - AA25  
LRV : 4



BLUEBERRY  
FINISH : POLISHED BRIGHT  
CODE : PB6797 - AA25  
LRV : 4

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# SAPPHIRE

BESPOKE SOLUTIONS FOR ALUMINIUM

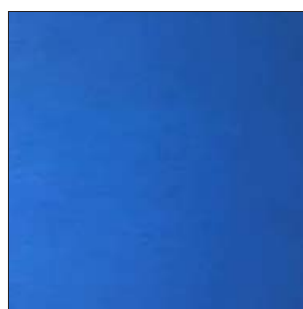
INTERIOR/EXTERIOR USE



NEPTUNE  
FINISH : MATT  
CODE : M692 - AA25  
LRV : 28



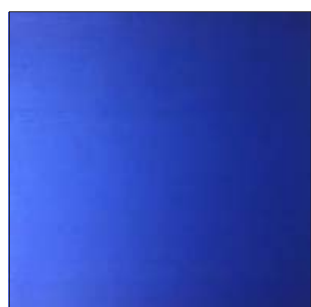
NEPTUNE  
FINISH : POLISHED BRIGHT  
CODE : PB692 - AA25  
LRV : 30



COBALT  
FINISH : MATT  
CODE : M695 - AA25  
LRV : 12



COBALT  
FINISH : POLISHED BRIGHT  
CODE : PB695 - AA25  
LRV : 14



COSMOS  
FINISH : MATT  
CODE : M697 - AA25  
LRV : 8



COSMOS  
FINISH : POLISHED BRIGHT  
CODE : PB697 - AA25  
LRV : 8



AQUA  
FINISH : MATT  
CODE : M6691 - AA25  
LRV : 22



AQUA  
FINISH : POLISHED BRIGHT  
CODE : PB6691 - AA25  
LRV : 26



LAGOON  
FINISH : MATT  
CODE : M6694 - AA25  
LRV : 16



LAGOON  
FINISH : POLISHED BRIGHT  
CODE : PB6694 - AA25  
LRV : 19



BLUEFIN  
FINISH : MATT  
CODE : M6697 - AA25  
LRV : 10



BLUEFIN  
FINISH : POLISHED BRIGHT  
CODE : PB6697 - AA25  
LRV : 11



ABYSS  
FINISH : MATT  
CODE : M6699 - AA25  
LRV : 4



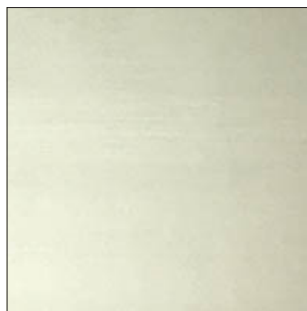
ABYSS  
FINISH : POLISHED BRIGHT  
CODE : PB6689 - AA25  
LRV : 5

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NEBBIO  
FINISH : MATT  
CODE : M661 - AA25  
LRV : 49



NEBBIO  
FINISH : POLISHED BRIGHT  
CODE : PB661 - AA25  
LRV : 55



QUARRY BEIGE  
FINISH : MATT  
CODE : M662 - AA25  
LRV : 30



QUARRY BEIGE  
FINISH : POLISHED BRIGHT  
CODE : PB662 - AA25  
LRV : 36



PICHOLINE  
FINISH : MATT  
CODE : M660 - AA25  
LRV : 26



PICHOLINE  
FINISH : POLISHED BRIGHT  
CODE : PB660 - AA25  
LRV : 33



ALLORA  
FINISH : MATT  
CODE : M663 - AA25  
LRV : 12



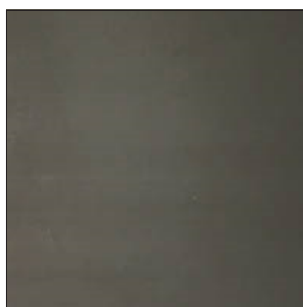
ALLORA  
FINISH : POLISHED BRIGHT  
CODE : PB663 - AA25  
LRV : 15



VOLOS  
FINISH : MATT  
CODE : M665 - AA25  
LRV : 8



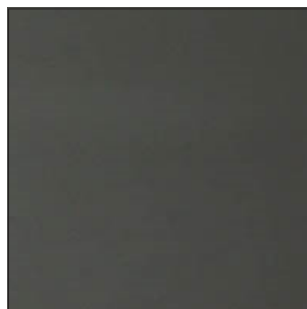
VOLOS  
FINISH : POLISHED BRIGHT  
CODE : PB665 - AA25  
LRV : 10



SELVATICA  
FINISH : MATT  
CODE : M667 - AA25  
LRV : 6



SELVATICA  
FINISH : POLISHED BRIGHT  
CODE : PB667 - AA25  
LRV : 5



KALAMATA  
FINISH : MATT  
CODE : M669 - AA25  
LRV : 5



KALAMATA  
FINISH : POLISHED BRIGHT  
CODE : PB669 - AA25  
LRV : 5

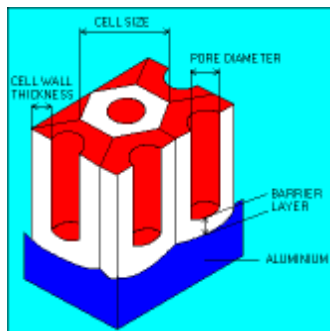
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## History

Anodising is a very old and established process and was developed for commercial applications in the early 1930's. It is still in service on buildings built in the 1950's, Anodising continues to stand the test of time today.

## What is Anodising?

Is the process for producing a translucent film of aluminium oxide which forms an integral part of aluminium. This is produced by applying direct current through a suitable electrolyte (dilute sulphuric acid) in which the aluminium is the anode and a suitable material e.g. (lead) is the cathode.



## How long does the process take?

It physically only takes a few hours to process and pack a part. We need anywhere from a few days to a few weeks to plan and process projects.

General Lead times of 1 - 2 weeks apply.

## What Can be Polished?

Polishing is a separate process which is performed prior to chemical (polishing) brightening. This is done by mechanically polishing the aluminium by a buffing process. This removes minor to medium ( scratches, die lines and marks) that are often present on aluminium, however it cannot not remove deep scratches, die lines and roadburn which will remain visible after the anodising process.

Sapphire can polish extrusion upto a maximum width and height of 200mm and to a maximum length of 6500mm.

## What Can be Brushed/Linished?

Brushing/Linishing is also a separate process which is performed prior to chemical (polishing) brightening or matt processes by passing the aluminium under an abrasive belt to give a coarse uniformed linished appearance as is generally seen on picture frame extrusions.

Please Note: Brushing/ Linishing can only be performed on flat surfaces up to 150mm in width for extrusions or up to 1200mm for sheet. Linishing is also not recommended for partitioning or furniture as it can produce sharp edges.What can be Anodised?

## What Can Be Anodised ?

Sapphire's process for anodising only lends itself to aluminium extrusion, sheet and plate of certain alloys. As mentioned above anodising is a reaction with the alloy surface you wish to coat and the resulting coating will depend on the quality and purity of the alloy used. The following international alloys are recommended by Sapphire for consistent anodising results. All alloys should be Prime Billet, no remelt)

### Extrusion

6060T5

6063T5

6463T5 (Used for high quality bright finishes)

### Sheet

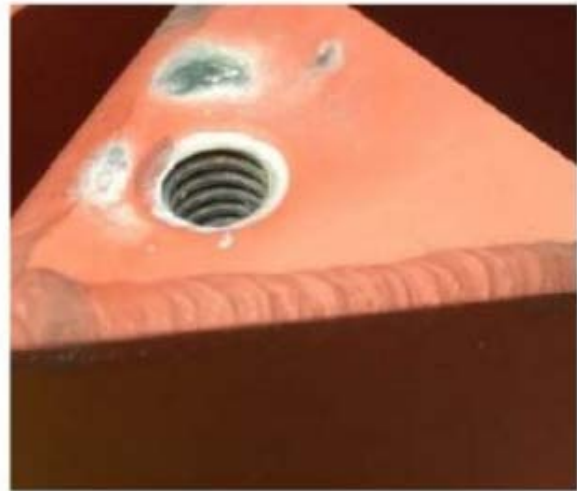
5005 H32 - 34

## Welding and Anodising

When parts require welding prior to anodising, care should be taken in the selection of the correct Filler Rod or wire used for the process. If a colour match is required on the part and the weld then 5356 Rod is to be used to ensure as close a match as possible. Differences can still occur from heating of the part in the welding process that can change the alloy of the part. If bulk quantities of parts are required to be manufactured then a prototype should be produced and tested for colour matching suitability prior to bulk manufacture.



ANODISED ALUMINIUM COMPONENT MANUFACTURED WITH 4043 / 4047 TIG ROD (BLACK FINISH ON WELD)



ANODISED ALUMINIUM COMPONENT MANUFACTURED WITH 5356 TIG ROD (MATCHING FINISH ON WELD)

## What is the biggest piece that can be anodised?

Sapphire can anodise extrusions and sheets within the following dimensions.

Length = up to 6.5 metres  
Depth = up to 1.3 metres  
Width = up to 550mm

## How thick is the coating?

Anodising is a very thin coating of immense hardness measured in microns.

Internal uses are generally between 5µm - 20µm.

Exterior uses are between 15µm - 25µm (refer to guide on selection of Anodised Coatings)

A micron (µm) is 1/1000 of a millimetre for example a cigarette paper is 7µm.

## How hard is Anodising?

Anodising is aluminium oxide which is the second hardest substance known to man, only a diamond surpasses anodising in hardness. Anodising can increase the hardness of the untreated aluminium surface by more than 3 times.

## How long will anodising last?

Anodising properly specified and maintained will virtually last indefinitely.

A normal service life in excess of fifty years for Sapphire AA25 coatings can be expected (subject to proper and regular maintenance), making the coating ideal for commercial and monumental use.

## What are jig marks?

In order to anodise aluminium we need to hold on to the material in such a way as to pass an electrical current through it, this is commonly known as a jig mark. All items for anodising need to allow for a jig mark which is generally removed by the customer after anodising. You should allow the following for jig marks.



CLAMP MARK ON EXTRUSION UP TO 50MM WILL HAVE A CONTACT MARK ON BACK AND IS WASTE, FRONT WILL HAVE ROUND MARK FROM CLAMP SCREW



CLAMP MARK ON SHEET UP TO 50MM WILL HAVE A CONTACT MARK ON BACK AND IS WASTE, FRONT WILL HAVE ROUND MARK FROM CLAMP SCREW.

Custom folded, expanded or perforated parts = Tabs should be added to enable us to hold your component for anodising, these are then removed by the client post anodising.

Small Parts = Are held in titanium racks or wired or clamped to aluminium racks, parts must be gripped by conductive racks or wires. Where these racks or wires contact the part, there will be slight unanodized marks or "contact points" left on the surface of edges of the parts.



CLAMP MARK ON CUTOFF TAB REMOVED BY CLIENT AFTER ANODISING AND TOUCHED UP.



## How do you colour the anodising?

Sapphire adds colour to anodising by one of two methods

### 1. Absorption

The anodised aluminium is immersed in a tank full of dye and the dye absorbs into the pores of anodised coating until the desired shade is obtained.

### 2. Two Step

The anodised aluminium is placed in a separate tank and a current is passed into the tank and tin in the form of stannous sulphate is plated into the pores of the anodised coating. These colours are UV resistant hence totally light fast.

## Colour Inspection

Anodising is like many wood veneers or marbles, it is a natural product that needs to be viewed in the terms of tonality of colour. When inspecting Anodised finishes for colour and finish tonality certain factors must be taken into consideration.

### 1. Light conditions

As the Anodised finish is translucent whether it is matt or bright finished it will tend to reflect light like gemstones, It is this property that gives life to finish giving it a different appearance depending on the angle and intensity of the light source it is inspected in.

### 2. Distance from product viewed

to assist with colour inspection for anodised coatings, a distance of **not less than 3 metres** should be used for the inspection of Anodised coatings. This will help take away varying elements such as light reflecting and refracting from the different anodised surfaces.

### 3. Differences in perception of colour

Each person has a different perception of colour . This should always be taken into account when inspecting finishes.

## Is anodising resistant to graffiti attack?

Anodising is particularly resistant to Graffiti attack and most paints and inks can be washed off with most hydrocarbon based solvent products. (Refer to Care & Maintenance of Anodised Coatings)

## Is anodising safe?

Anodising is a safe process that is not harmful to human health. An anodised finish is **nontoxic** and chemically stable. It will not decompose and increases the fire protection from 600 degrees Celsius to around 2000 degrees Celsius.

For additional information refer to one of the following standards that applies to your region

AS1231-2000 - Australia

AAMA 611-98 - American Architectural Manufacturers Association

ASTM B580-79(2000) - ASTM International

BS EN 12373-2001 - British & European Standards

ISO7599-1983 - International Standard



The life of an anodised finish can be greatly enhanced by the adoption of a regular documented maintenance programme.

Any chemical attack on decorative surfaces which is not regularly cleaned becomes increasingly severe and after several years, may be impossible to restore.

A regular cleaning and maintenance regime is essential for two very good reasons.

- 1) To maintain a decorative appearance and to reduce any chemical attack, if applicable
- 2) Anodised surfaces are cleaned to remove dirt, grime, grit, atmospheric pollutants and iridescence.

The cleaning procedures may be broken down into three distinct categories, namely:

### Primary Cleaning

Primary cleaning is the initial cleaning that should occur after completion, to remove atmospheric dust, deposits of dirt, possible cement deposits, glues, etc.

### Secondary Cleaning

This is normally a heavy duty clean that is carried out on a surface that has been neglected for some time. This should be carried out by companies that specialise in the cleaning of facades, windows, doors, curtain walling etc. The most important criteria of an aluminium cleaning agent is that it should not be toxic, have a pH within 5 - 8 and be free of fluorides, chlorides, or sulphates.

### Periodic Cleaning

This is the cleaning cycle that should be done on a regular basis AFTER the primary and secondary phase. (In the case of a new installation etc. it follows after the Primary).

The intervals of each cleaning cycle are dependent on the atmospheric pollutants, area, region, corrosive level, etc. for a particular region. (Refer to Guide to selection of anodic coating thickness)

### What You Should Do

- 1) Protect exposed Aluminium surfaces until all wet trades etc. have been completed.
- 2) Any cement or acid should be removed as soon as practical. This will prevent any chemical attack.
- 3) When cleaning, wash down all surfaces with a neutral detergent and rinse thoroughly.
- 4) Remove awkward deposits on ANODISED aluminium, with a suitable nylon abrasive cleaning pad or brush, plus neutral detergent, and then rinse.

To clean long neglected areas it is advisable to use proprietary cleaners specifically formulated for aluminium surfaces. These products contain residual waxes etc. and can substantially improve the appearance of worn or weathered surfaces.

### What You should NEVER DO

- 1) Use of wire brushes, steel wool, emery paper are NOT recommended under any circumstances.
- 2) Avoid mechanical damage from scaffolding, bad handling, etc.
- 3) Do NOT allow strong acids such as Hydrochloric, Acetic etc. to come into contact with anodised aluminium.
- 4) Do NOT allow mortar or mortar cleaning chemicals to come into contact with anodised surfaces.
- 5) Do NOT allow strong alkalis such as caustic soda, lime, etc. to come into contact with anodised aluminium
- 5) Anodised Aluminium should not be in direct contact with brass or copper.

### Onsite Handling

Ensure that the aluminium is properly protected with interleaved wrapping in paper or plastic and ensure that the wrapping does not get damp during storage.

To ensure that the anodised coating is not attacked by corrosive chemicals, a temporary protective coating can be applied in the form of a suitable non-yellowing lacquer, e.g. methyl methacrylate or cellulose acetate butyrate, or a stripable coating or tape is recommended. Tape and stripable coatings should be easily removable and should not leave residues.