

ABOUT

COLORBOND® STEEL



Conveys beauty that captivates and strength that protects, in iconic structures.

Beautiful design can transcend boundaries and time, gaining longevity and value. Materials that provide flexibility can realise visions and bring imaginations to life, making a long lasting impression. That's COLORBOND® steel.

With Bluescope's heritage of manufacturing steel products and innovations spanning more than 130 years, to date, our global partnerships, networks and brands have strengthened at its core, allowing us to prosper in widely diverse markets.

Since the 1960s, COLORBOND® steel has been meeting the various demands and needs of the construction industry, earning a name for itself as a brand that offers innovative, multipurpose and high-quality steel building materials. After more than 50 years, the iconic building material COLORBOND® steel, lives up to its standards by going through the harshest product testing to provide some of the world's most outstanding steel solutions.

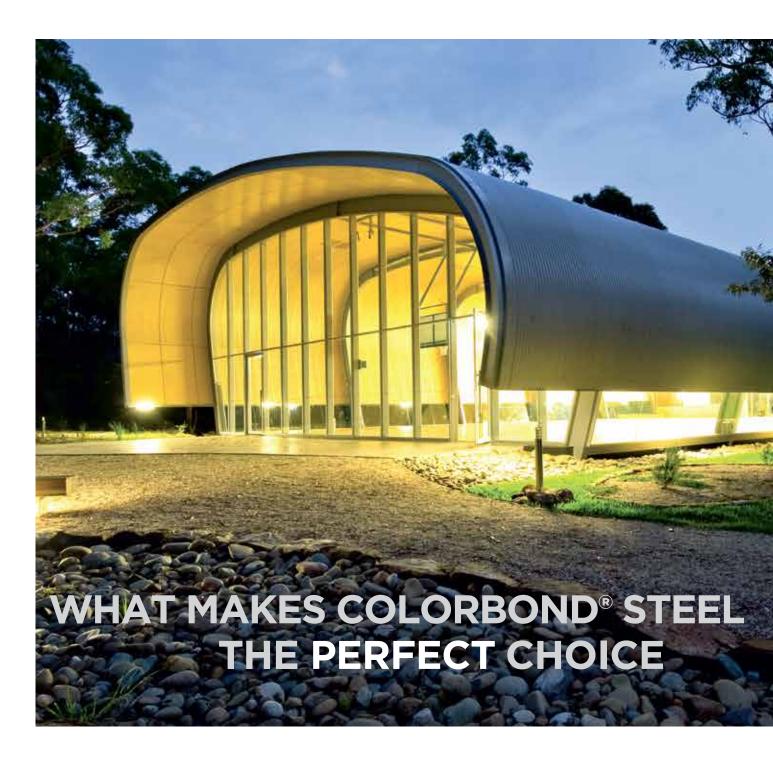


The result - strong, beautiful, durable and versatile forms of coated steel for a variety of applications which include roofing, walling, guttering, fences, sheds and warehouses to specialist architectural panels for distinctive cladding applications.

Combined with the visionary, bold and discerning approach of building project owners, investors and architects, COLORBOND® steel can help build legacies that last while improving the status of these industry experts in their respective fields. With applications that are endless and only limited by the imagination, COLORBOND® steel continuously seeks partners and experts who can bring their visions to life, with the best quality and aesthetically amazing building materials.

Providing quality and peace of mind, delivering on promises and acting with integrity, COLORBOND® steel continues to innovate, bringing solutions that will require minimal maintenance, come rain or shine. Delivering longevity, energy efficiency, environmental sustainability and great aesthetics, the rich heritage of COLORBOND® steel lays the foundation of the future.

Colerbond



The strength of our products lie in many areas, providing aesthetic comfort and appeal ideal in many situations.



HIGH CORROSION RESISTANCE



2 INSPIRING, LONG LASTING COLOURS



3 CLEAN TECHNOLOGY



THERMATECH® † TECHNOLOGY



5 WITHSTANDING THE TEST OF TIME



EMBEDDED BRANDING TEXT COLURBOND ON THE REVERSE SIDE OF STEEL SHEETS



SERVICE **SUPPORT**





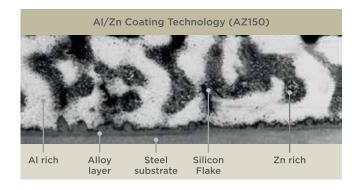
HIGH CORROSION RESISTANCE

What is Corrosion?

Corrosion is the deterioration of metal that results from the chemical reaction with the surrounding environment (water and oxygen). The reaction is known as oxidation. Corrosion in the context of coated steel sheet may lead to signs of rust or iron oxide and eventually sheet perforation. By using the right type of metallic coating, premature corrosion can be prevented.

ZINCALUME® Coated Steel Substrate

COLORBOND® steel is incorporated with BlueScope's proprietary metallic coating technology – ZINCALUME® Aluminium/Zinc alloy coated steel base substrate which comprises of coating composition of 55.0% aluminium, 43.5% zinc, and 1.5% silicon and a minimum coating class of AZ150 (150 g/m² Aluminium/Zinc alloy coating by triple spot test). It offers superior weathering performance under varied conditions, when compared with other types of metallic coated steel.

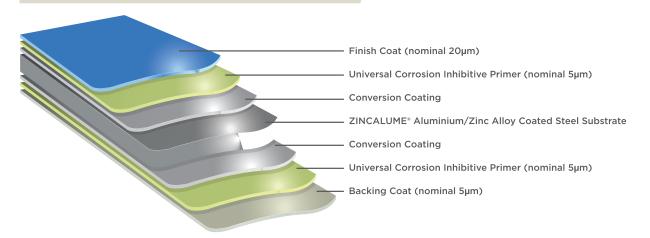


4x Better Than Galvanized Steel of Similar Coating Thickness

ZINCALUME® steel exhibits a complex coating structure consisting of both zincrich and aluminium-rich areas (Al/Zn Coating Technology diagram above). The zinc-rich area provides excellent sacrificial protection, while the aluminium-rich area provides durable barrier protection as well as sacrificial protection to steel. It is the combination of these two characteristics that make ZINCALUME® steel 4x more durable and effective against corrosion as compared to galvanized steel of similar coating thickness.

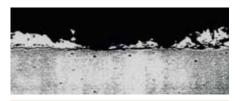


Cross-section of COLORBOND® steel



Site	Galvanized Steel		55%Al-Zn Alloy Coated Steel			
	g/m²/y	μm/y	g/m²/y	μm/y		
Severe Marine			16	2.2		
Marine			4.0	0.54		
Industrial/Marine			4.2	0.57		
Rural			1.3	0.17		
g/m²- two sided µm - one side						

Corrosion rates of galvanized steel and 55% Al-Zn alloy coated steel at Australian Atmosphere Exposure Test Sites.



Microscopic picture view of galvanized steel after weathering



Microscopic picture view of ZINCALUME® steel after weathering



Galvanized steel



ZINCALUME® steel

ZINCALUME* steel remains in good condition while galvanized steel of similar coating thickness has shown severe loss of coating and consequently signs of red rust and sheet perforation.



INSPIRING, LONG LASTING COLOURS

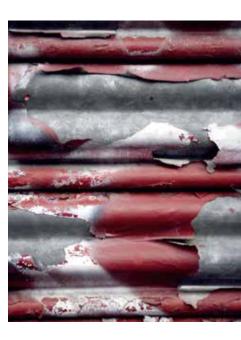
What Is Paint Weathering?

Prolonged weathering causes degradation of key ingredients in the paint system such as pigments and resins, which in return causes colour to fade. Delamination of paint is the separation of the top coat from its primer and it can be caused by exposure to UV, poor surface preparation and paint formulation or poor paint/primer specification. Hence, it's important to select a reputable prepainted product to safeguard your building design.

Achieving Superior Weathering Performance through Innovation

By utilising optimum paint formulation and pigment blends, BlueScope assures excellent long-term colour stability for COLORBOND® steel products. The proprietary super polyester and PVDF (Polyvinylidene Difluoride/Fluorocarbon) paint systems make COLORBOND® steel an ideal choice in the following aspects:

- · Longer-lasting colour and gloss durability
- · Better delamination resistance
- · Superior tropical stain resistance



Cross-section of COLORBOND® steel



Proprietary Super Polyester Paint System

The samples shown are of steel sheets exposed under the same environmental conditions for the same period. The conventional prepainted steel shows significant colour fading, while the COLORBOND® steel shows very little change in colour, thus providing long lasting beauty.



Long-term colour stability of COLORBOND* steel products compared to conventional prepainted steel.









On the ground studies of building cladded with COLORBOND® steel under actual weathering shows superior paint performance.

Colour Choices

Subtle or bold, light or dark, cool or warm, COLORBOND® steel utilises optimum paint formulation and pigment blends to provide excellent long-term colour stability for COLORBOND® steel products. The proprietary paint system is a result of extensive R&D testing, including actual field exposure testing and has been proven by many actual cases to deliver superior durability against paint weathering, providing your building with a desirable timeless design.

Aside from different colour choices, BlueScope has developed different paint finishes that's not just elegant, but durable.

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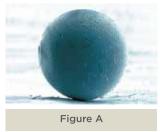
CLEAN TECHNOLOGY

What Is Tropical Staining?

In tropical environments where heat and humidity are prominent throughout the year, airborne particles settle and adhere on the prepainted steel surfaces, easily resulting in dark, unsightly stains that give buildings a dirty, aged appearance.

Best Defence Against Tropical Staining and How Does It Perform in Real World Conditions?

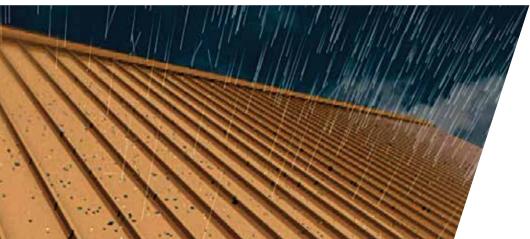
Incorporated into COLORBOND® steel paint system is BlueScope's Clean Technology which prevents dirt from bonding to the surface. As a result, particles remain "loose" and can be washed away during rainfall, resulting in a cleaner look. From microscopic view of a tropical dirt particle, COLORBOND® steel with Clean Technology prevents the particle from bonding with its surface (Figure A). The particle residing on the surface remains "loose" and can be easily washed away during rainfall. On the contrary, conventional prepainted steel allows dirt particles to bond on its surface much more easily, hence it's harder to be removed during rainfall (Figure B).





Clean Technology prevents dirt from bonding onto the surface of COLORBOND* steel (Figure A), unlike other prepainted steel paint system where dirt particles can bond onto the surface (Figure B).

This Clean Technology incorporated into COLORBOND® steel allows for minimal maintenance with natural rainfall while still able to maintain its attractiveness for a longer period.



The Results

Shown below are samples that were exposed under tropical weather for the same time period. Without the Clean Technology, conventional prepainted steel shows significant dirt staining, while COLORBOND® steel with Clean Technology shows minimal signs of staining and retained its vibrant and beautiful colour.





The effect of BlueScope's Clean Technology is more obvious on a vertical surface. Below is a comparison of the COLORBOND® steel with Clean Technology and conventional prepainted product without Clean Technology. On the vertical surface, COLORBOND® steel with Clean Technology is able to prevent signs of water stripes mark.



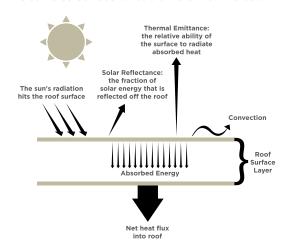




THERMATECH® TECHNOLOGY

Understanding Solar Reflectance Index

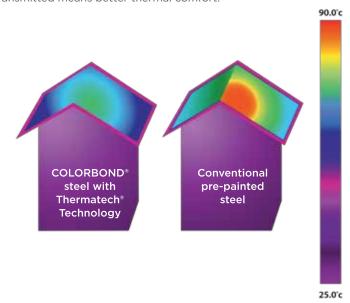
Solar Reflectance Index (SRI) is a numerical measure that indicates a constructed surface's ability to reflect solar heat. The value ranges from O (standard black) to 100 (standard white), where the higher the number, the more heat is reflected. SRI is primarily a function of solar reflectance, where solar reflectance is highly dependent on colours. Typically, lighter colours will have a higher SRI value while darker colours will have a lower SRI value. However, do note that two different surfaces of the same colour could have different SRI values.





Less Heat, More Comfort

With BlueScope's Thermatech® solar reflectance technology, the solar reflectance ability is increased without affecting the colour shade. Hence COLORBOND® steel, incorporated with Thermatech® technology, is able to deliver better thermal performance compared to conventional paint of the same colour, ultimately lowering the heat transmitted through the roof into the living space. Lower heat transmitted means better thermal comfort.





Why Is Thermatech® Important in Today's Environment?

Selecting the right external cladding material has one of the biggest impacts in achieving thermal efficiency for buildings. This is especially important given the prolonged periods of harsh temperatures faced by many urban areas today due to the Urban Heat Island (UHI) effect, coupled with the increasing average temperature of the environment due to climate change. External claddings made of Thermatech® technology will absorb less heat, so less heat is reemitted into the surrounding, ultimately reducing the UHI effect.

Green building rating tools such as the Leadership in Energy and Environment Design (LEED) and Green Building Index (GBI) encourage the usage of materials with high SRI values to mitigate the UHI effect. Depending on the design of your building, COLORBOND® steel with Thermatech® is able to meet such standards and potentially contribute to the reduction in cooling expenses.

Benefits at a Glance

- Acts like an added insulation under the sun.
- Lowers peak roof temperature by up to 6°C*.
- · Reduces reliance on air-conditioning to keep buildings cool.
- Cuts annual cooling energy consumption by up to 15%*.
- Aligns with growing awareness of climate change and the need for thermal efficiency

^{*}Depending on level of insulation, colour, building shape and function.



WITHSTANDING THE TEST OF TIME

To ensure COLORBOND® steel lives up to the highest expectations in durability, BlueScope conducts comprehensive testing programmes deriving from cutting edge Australian research and development that include accelerated laboratory corrosion tests, as well as real-world outdoor exposure tests and actual project case studies. Committed to quality, constant improvement and proven by credible studies, COLORBOND® steel products can endure the test of time to be the most suitable external cladding material.



COLORBOND* steel has been subjected to extensive testing to ensure that it is genuinely a longer lasting product.

When you purchase COLORBOND® steel you are buying products made and backed by BlueScope. The quality assurance and standard warranty* offered by BlueScope includes:

- Warranty against perforation by corrosion for up to 25 years
- Warranty against paint flake and peel for up to 15 years
- Warranty against excessive colour fading for up to 12 years
- Warranty against discolouration by dirt staining for up to 5 years
- * Warranty terms and conditions apply.



Accreditations

Our coated steel products are certified with SIRIM Eco-Label for Coated Flat Steel Products Criteria by SIRIM QAS International, a member of the Global Ecolabelling Network (GEN); The SIRIM Eco-Label certification identifies a product's overall environment impact and the communication of its environmental information to consumers and business.

Our products are listed in the Green Building Products and Services Directory at Green Pages Malaysia (www.greenpagesmalaysia.com/directory/); and MyHijau Directory (dir.myhijau.my/directory). These directories guide green consultants in their selection decision to identify preferred green products.

Product certification & compliance

- SIRIM Product Certificate AS/NZS 2728 (Prefinished/ Prepainted Sheet Metal Products)
- SIRIM Product Certificate MS 2383 (Prefinished/ Prepainted Sheet Metal Products)
- CIDB Perakuan Pematuhan Standard (PPS) Certificate
- BS 476 Part 6 (Fire Propagation) & BS 476 Part 7 (Surface Spread of Flame) i.e. Comply to Class 'O' requirements





EMBEDDED BRANDING TEXT ON THE REVERSE SIDE OF STEEL SHEETS

Assurance & Traceability

To assist you in identifying genuine COLORBOND® steel made only by BlueScope, pay attention to the COLORBOND® steel branding text on the reverse side of every sheet. Distinct branding text with COLORBOND® steel brand name and product date and time eases identification and traceability, the brand presence is our assurance of BlueScope's commitment to quality.



If you are concerned about the quality of COLORBOND® steel products, please contact us. Our team will try to address any concerns you may have.



SERVICE SUPPORT



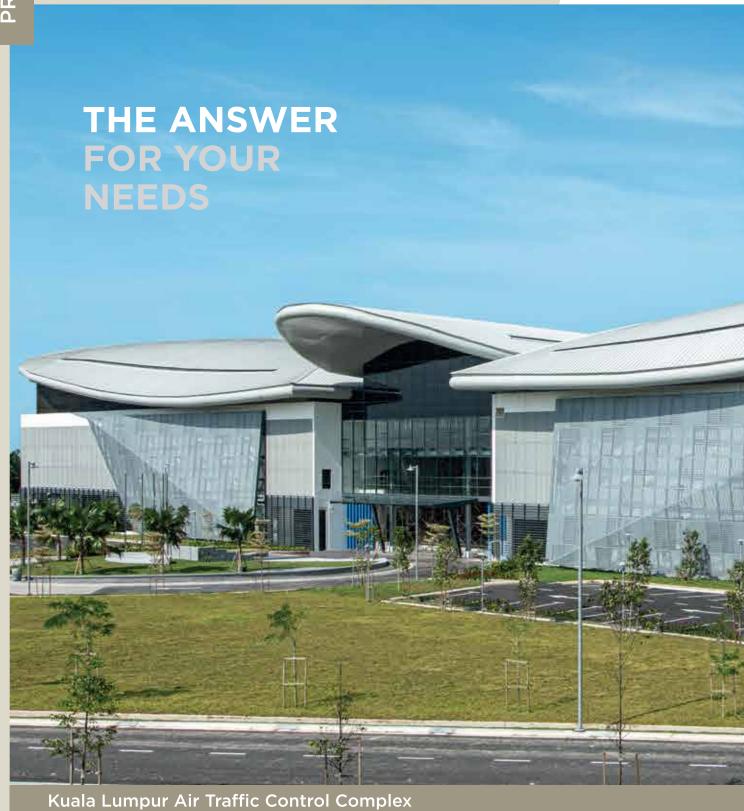
In-field Response and Support

When you purchase COLORBOND® steel, you are buying products with services support backed by BlueScope to give you the assurance and peace of mind to select the appropriate materials for your project. We are available for consultation on projects to discuss about your individual requirements to ensure a smooth progression through the various stages and organising project specific orders of speciality materials if required.

Our services include:

- Specification Support
- · Consultation and Risk Assessment
- Advisory Role in Material Quality & Application

Colerbond





COLORBOND® STEEL

Reliability is the basis of a strong brand. COLORBOND® steel is the basis of all COLORBOND® steel series, where excellent corrosion resistance, durable paint performance is expected. COLORBOND® steel can be seen on many buildings as external cladding material that's been in use and relied on for years as it is synonymous with quality.





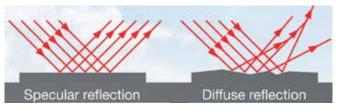






COLORBOND® MATT

COLORBOND® MATT steel is intelligently designed with a matt finish featuring a gloss unit of less than 10, to drastically reduce specular reflection. There are two kinds of light reflection – specular reflection and diffuse reflection. A specular reflection occurs when light is reflected in a concentrated, mirror-like manner, while a diffuse reflection is a scattered and unfocused reflection of light. Utilizing BlueScope's innovative matt paint technology, the COLORBOND® Matt steel features a softer, more subtle look in a range of COLORBOND® steel's colours.











COLORBOND® SPECTRUM

Reflecting strength and the beauty of its surroundings, the COLORBOND® SPECTRUM steel series creates an amazing effect under varied natural lighting conditions and viewing angles, enhancing the prestigious appearance of your building with subtle yet remarkable effects. The basis behind the development of the COLORBOND® SPECTRUM steel series is the intelligently formulated technology of COLORBOND® steel and the tough and durable aluminium/zinc alloy-coated steel that assures you more than just exceptional aesthetics.

Metallic finishes:

Metallic finish is achieved through the addition of highperformance metallic pigments, which allows paint to exhibit different characteristics in colour and apprearance in different time and angle. Typically, the metallic pigment used is called mica particles, which are shiny mineral flakes.



Product Information

TYPICAL USES

General exterior architectural uses, for example roofing, wall cladding, rainwater goods, as well as other building products such as garage doors and infill panels.

PRETREATMENT

Corrosion resistant proprietary conversion coating.

PRIMER COAT

Universal corrosion inhibitive primer. Nominal dry film thickness of $5\mu m$ on each side.

FINISH COAT

Custom formulated Super Polyester paint system with high performance pigments. Nominal dry film thickness 20µm on the top or weathering side.

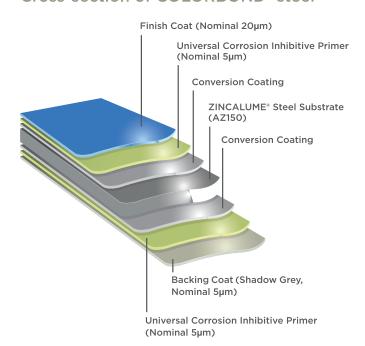
BACKING COAT

Custom formulated Shadow Grey. Nominal dry film thickness $5\mu m$.

COLOUR

A range of standard colours is available. Other specifically required colours may be available on request.

Cross-section of COLORBOND® steel









SRI is calculated using ASTM E1980-01 with Medium Convection Coeffcient (12) value reported. This data is approximate values only, may vary based on paint formulation and/or metallic coating thickness.



Winter Matt (SRI:80)

Scallop Matt (SRI:79)

Coffee Matt (SRI:65)



Hidden Matt (SRI:47)



Graphite Matt (SRI:26)



Eclipse Matt (SRI:18)







Pebble Grey (SRI:40)



Champagne Gold (SRI:56)



Bronzite Bronze (SRI:37)



SRI is calculated using ASTM E1980-01 with Medium Convection Coeffcient (12) value reported. This data is approximate values only, may vary based on paint formulation and/or metallic coating thickness.





Lexis Hibiscus Port Dickson



COLORBOND® ULTRA

COLORBOND® ULTRA steel is designed specifically for external cladding application in severe coastal and industrial environments due to higher coating class of its ZINCALUME® steel substrate, i.e. AZ200 (200g/m² of Aluminium/Zinc alloy coating by triple spot test). The higher coating mass provides additional degree of protection to the steel substrate. The fact that it features superior corrosion resistance in coastal and industrial environment while still able to deliver excellent paint performance makes COLORBOND® ULTRA steel one of the most cost effective building materials to withstand exposure to sea breeze, external industrial fall-out and other deposits that would cause accelerated corrosion.

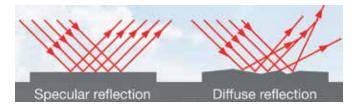
For harsher environment such as coastal and industrial areas, coating class of AZ200 is strongly recommended. Based on our studies, AZ200 can last 60% longer than AZ150 in the same environment. We have COLORBOND® steel used next to the coastline and yet still able to provide long lasting shelter.

COLORBOND® ULTRA MATT STYLE THAT MATTERS

Stylish yet classic, eye-catching yet subtle, COLORBOND® ULTRA MATT steel is a one-of-a kind steel roofing that greatly reduces the solar light reflection in a specular manner, minimising unwanted solar glare while maximizing visual comfort. Imbued with a matt finish, the COLORBOND® ULTRA MATT steel series combat concentrated light rays by diffusing it, greatly reducing the light intensity after the reflection, exuding effortlessly stunning look by reflecting less.

MATT finishes:

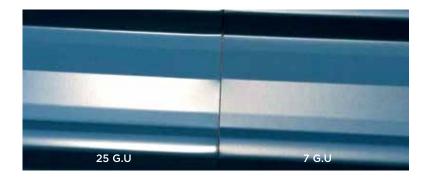
Matt finish features paint finish with gloss unit of less than 10, to drastically reduce specular reflection. There are two kinds of light relection - specular reflection and diffuse reflection. A specular reflection occurs when light is reflected in a concentrated, mirror-like manner, while a diffuse reflection is a scattered and unfocused reflection of light.



Utilizing BlueScope's matt paint technology, the matt finishes exhibit a softer, more subtle look in a range of COLORBOND® steel's colours.



Specular or diffuse reflection can be quantified in Gloss Unit (G.U). A higher value of G.U would mean a glossier finish; while a lower value of G.U would reflect a more matt finish.



Not to mention that COLORBOND® ULTRA MATT steel comes with the same durability against corrosion as COLORBOND® ULTRA steel.



Product Information

TYPICAL USES

Exterior building profiles in applications requiring excellent corrosion resistance. Suitable from moderate to severe marine or industrial environment. For material selection advice, please contact your nearest BlueScope sales office.

PRETREATMENT

Corrosion resistant proprietary conversion coating.

PRIMER COAT

Universal corrosion inhibitive primer. Nominal dry film thickness 5µm each side.

FINISH COAT

Custom formulated super polyester paint system with high performance pigments. Nominal dry film thickness 20µm on the top or weather side. The finish coat can, if required, be applied to both sides to provide a double-sided product.

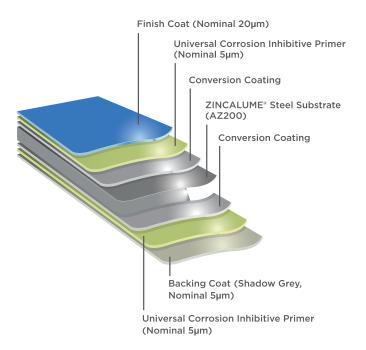
BACKING COAT

Custom formulated Shadow Grey. Nominal dry film thickness $5\mu m$.

COLOUR

A range of standard colours is available. Other specifically required colours may be available on request.

Cross-section of COLORBOND® ULTRA steel









Eternal Red (SRI:40)



Ever Green (SRI:24)



Constant Blue (SRI:31)



Enduring White (SRI:80)



Ultimate Grey (SRI:66)



Forever Beige (SRI:54)

SRI is calculated using ASTM E1980-01 with Medium Convection Coeffcient (12) value reported. This data is approximate values only, may vary based on paint formulation and/or metallic coating thickness.



Sonata Matt (SRI:80)

Oyster Matt (SRI:79)





Alley Matt (SRI:47)



Iron Matt (SRI:26)

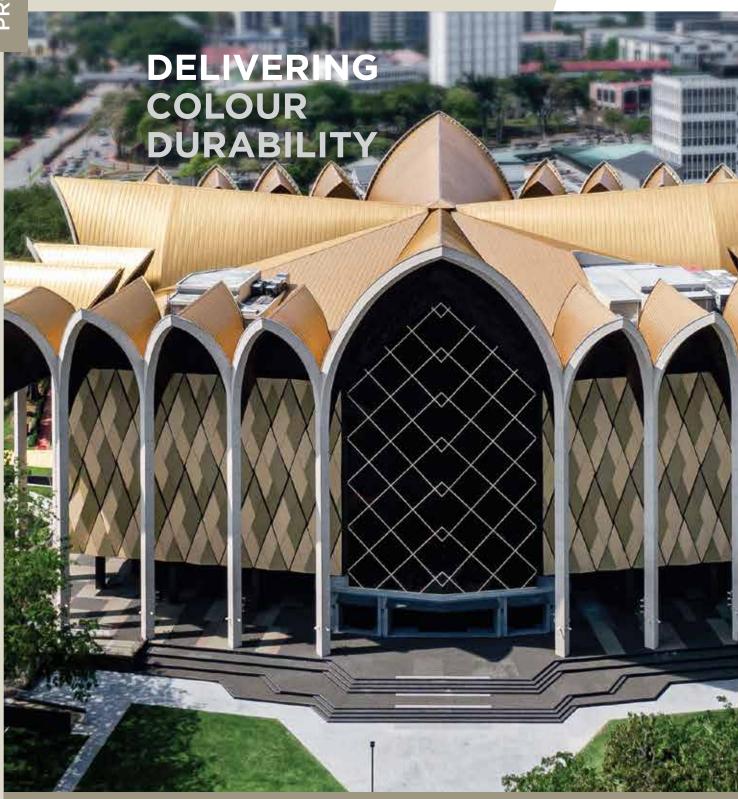


Granite Matt (SRI:18)



Colerbond XPD





Sarawak Museum



COLORBOND® XPD

Come rain or shine, COLORBOND® XPD steel provides premium colour durability, excellent weatherability and high formability for your choice of prestigious roofing, walling, architectural panels and building accessories that demand the ultimate performance in long-term colour and gloss retention. Furthermore, the durability of its paint, shine and lustre is made possible with the custom formulated 70% PVDF paint system with high performance pigments accompanied by the superior dirt resistance performance.

COLORBOND® XPD PEARLESCENT INTENSE SHIMMER

The lines between various architectural styles are often blurred, but with COLORBOND® XPD PEARLESCENT steel, it exudes a style unlike any other. Derived from a custom formulated 70% PVDF paint system with high performance metallic pigments, COLORBOND® XPD PEARLESCENT steel radiates a striking effect and gives designers the flexibility to meet the requirements of their architectural designs for astonishing steel roofing and walling.

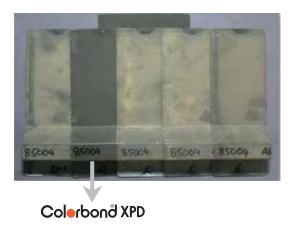


Proprietary PVDF Paint System

PVDF is known to be a superior paint system to provide excellent colour and gloss retention over most paint systems, including polyester based paint system. Based on studies, mixture of 70% PVDF with 30% resin shows the most promising and optimal colour and gloss retention performance.

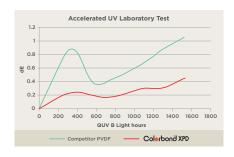
Influence of different PVDF ratio towards color durability (Source: Kurt Wood, Akira Tanaka, Min Zheng and Dana Garcia; 70% PVDF Coatings)

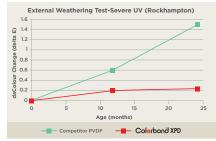
PVDF:acrylic ratio	Original 60° gloss	60° Gloss after 20 years exposure	Percent gloss retention	Color change (delta E*)
90:10	42	23	55	5.5
70:30	50	26	53	4.0
50:50	65	23	35	5.2
0:100	81	<10	<10	8.0



COLORBOND* XPD steel and other generic products after 10 years outdoor exposure in severe UV environment.

BlueScope's 70% PVDF paint system goes beyond generic PVDF paint system and has been developed with proprietary formula which is able to outperform conventional PVDF paint. Below is the accelerated test as well as external weathering test results, showing BlueScope's 70% PVDF paint system having better colour retention than similar colour sourced from generic producer.





Product Information

TYPICAL USES

Prestigious roofing and walling, architectural panels and building accessories requiring excellent colour and gloss retention.

PRETREATMENT

Corrosion resistant proprietary conversion coating.

PRIMER COAT

Universal corrosion inhibitive primer. Nominal dry film thickness 5µm each side.

FINISH COAT

Custom formulated 70% PVDF paint system with high performance pigments. Nominal dry film thickness 20µm on the top or weather side.

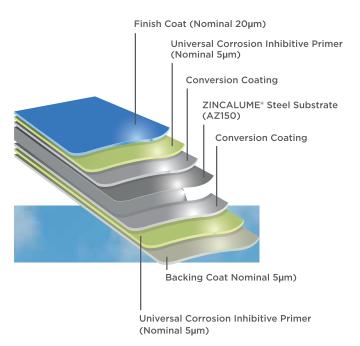
BACKING COAT

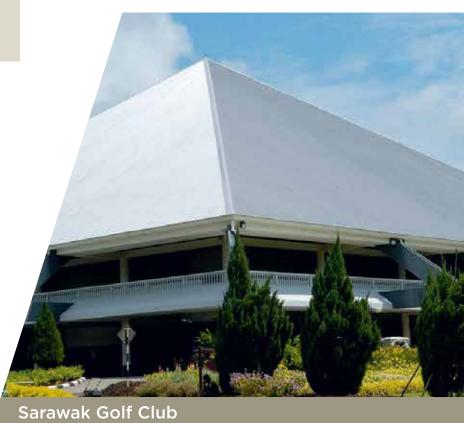
Custom formulated Shadow Grey. Nominal dry film thickness 5 micron.

COLOUR

A range of standard colours is available. Other specifically required colours may be available on request.

Cross-section of COLORBOND® XPD steel









Yulara Red (SRI:36)



Palm Green (SRI:36)



Kapar Sandstone (SRI:66)



Straits Blue (SRI:28)



Majestic Grey (SRI:39)



Coral White (SRI:80)







Copper Penny (SRI:54)



Verdigis (SRI:58)



Aegean Green (SRI:59)



Azure (SRI:49)



Platinum Grey (SRI:53)



Silver Coin (SRI:58)







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NS BlueScope Malaysia









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