



Plascoat®

THE ART OF PROTECTION

Plascoat PPA 571

Corrosion protection for metal

BPA
FREE

VOC
FREE

PHthalate
FREE

Protection contre la corrosion des métaux

Korrosionsschutz für Metall

Protezione anticorrosiva dei metalli

Protección contra la corrosión de los metales

حمايه للتآكل المعادن

金属防腐

 PPA571

www.plascoat.com

How good is the protection given by Plascoat PPA 571..?



Plascoat PPA 571 has been protecting metal from corrosion for 25 years. From product launch in 1990 there has been no reports of corrosion caused by coating failure.

Plascoat PPA 571 will outlast most, if not all, traditional powder coatings in providing long-term protection for metal against demanding climates without damaging the environment. It has a proven track record of unbeatable performance in a wide range of applications.

The corrosion protection given by Plascoat PPA 571 is second to none and it is amongst the most versatile and durable coatings available on the market today.



▲ Plascoat PPA 571 coating still looks new on this Bondi Beach phone box in 1996 after 6 years.

▼ Deteriorated polyester coating in 1996 after 6 years.



▲ These tram power pylons were coated in 1995 and twenty years later, in 2015, are free of corrosion and still look new.

Developed by Plascoat Systems, the world leader in thermoplastic powder technology, Plascoat PPA 571 is amongst the most versatile and durable coatings available on the market today.

Whatever the application, Plascoat PPA 571 provides:

- Excellent environmental credentials – no bisphenol A (BPA free), no VOCs, no TGIC, no phthalates, no isocyanates, no halogens and no heavy metals
- Approvals for contact with food and drinking water
- Superior resistance to salt, sea, sand and sun
- Vandal and graffiti resistance
- Sound and electrical insulation properties
- Excellent coverage of edges and welds
- No requirement for a primer
- Very low smoke in event of fire.

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▲ PPA 571 exceptional salt spray performance makes it ideal for use in coastal areas.

◀ Suspension cable covers on the Colindres Viaduct between Santander and Bilbao coated in PPA 571 in 1993. There was no sign of colour fade when this photograph was taken in 1999.



The abrasion rate of Plascoat PPA 571 is half that of standard thermoset powder coatings and the fading rate is 1/20th.



▲ PPA 571 coated fence posts installed in 1995 and still performing well in 2010.

▼ Gas pipeline protection fence in the Middle East 15 years after installation in 2000.

Thousands of kilometres of fencing in the harsh climates of the USA, the Middle East and Australia have been successfully coated with Plascoat PPA 571.

In this environment, resistance to high UV, intense heat, salt, sea and desert storms is key. Traditional coatings in these conditions do not last well, as many long-term field tests have shown.



▲ Aluminium fencing coated in green polyester after just six months by the sea in Brisbane, Australia.

▼ The same fence 20 years later after being re-coated in PPA 571.

Live tests in the US have shown that the salt spray corrosion rate and the abrasion rate of Plascoat PPA 571 are half those of standard powder coatings and the fading rate is 1/20th.

Plascoat PPA 571 is used all over the world for chain link, ornamental and security fencing and meets all the requirements of ASTM F1043-08 and F668-07.

 **PPA571**



Potable water pipes and fittings



After many years of use in the water industry the Plascoat PPA 571 series now has a dedicated product called PPA 571 Aqua. Plascoat PPA 571 Aqua is approved for contact with potable water in the UK, USA, Australia, New Zealand, Germany and France.

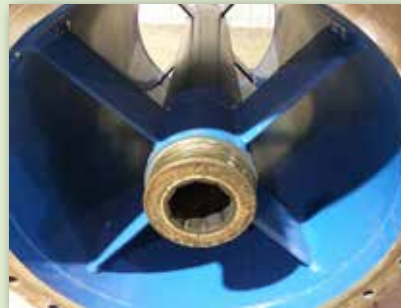


Plascoat PPA 571 Aqua offers a number of advantages over alternative coatings that are used to coat water fittings and pipes.

- High flexibility ensures coating will not crack or chip
- High flow rates compared to cement lined pipes*
- Excellent abrasion resistance
- Excellent UV resistance
- Much lower coating weight compared to cement lined pipes
- Repairable coating
- No polymerizing process required
- No primer required
- No volatile organic compounds, hazardous chemicals or bisphenol A

▲ PPA 571 Aqua is highly resistant to reverse impact and flexing damage, that can otherwise occur during pipe laying.

**Pressure drop tests performed by an independent test laboratory.*



▲ This PPA 571 Aqua coated potable water fitting has not exhibited any sign of abrasion damage after one year in use.



▲ Plascoat PPA 571 Aqua has a smooth surface that helps to reduce pressure drop and biomass growth.

The pipe bend is coated in PPA 571 Aqua and has not degraded in sunlight, unlike the adjacent FBE fitting. ►

As a thermoplastic, Plascoat PPA 571 Aqua is already polymerized. On the other hand, thermosets require uniform curing. If the fitting being coated has areas that respond differently to heating, the curing may not be complete or uniform. Any area of the coating that has not cured completely may have poor corrosion resistance or impact properties.



Plascoat PPA 571 Aqua meets the relevant requirements of the following coating specifications:

- EN 598
- GSK
- EN 14901
- AS/NZS 4158
- AWWA C116/A21.16-15

Plascoat PPA 571, as an electrostatically sprayable powder coating, is still used by some customers in the water industry. Current approvals are available on request.

Playgrounds



Safe, tough and graffiti resistant.

Automotive



Plascoat has its own facilities for cyclic corrosion (CCT), salt spray and stone chip testing.



▲ PPA 571 protected the metal playground structure at the Jumeirah Beach Hotel in Dubai, built in 1995.



▲ Playground in San Sebastian, built in 2005, is coated in PPA 571.

The equipment found in children's playgrounds is often exposed to demanding climatic conditions as well as the wear and tear of rigorous and continual use.

Plascoat PPA 571 is ideal in these environments. It is durable but also smooth to touch and graffiti can be easily wiped clean.*

▼ Plascoat PPA 571 provides excellent protection against rigorous and continual use.



▼ Graffiti can be wiped clean.*



*Using appropriate cleaners

Plascoat PPA 571 is used in automotive applications because of its high resistance to chipping and corrosion from salt and grit. However, it also has a tactile quality, which makes it ideal for coating interior or exterior fittings such as steering wheel or seat adjustment handles. This provides comfort as well as protection.

Comprehensive testing is undertaken for salt corrosion, impact, chemical and UV resistance as well as performance under extreme heat and cold and in a "gravelometer" (SAE J400).



▲ Plascoat PPA 571 is particularly resistant to road salt and low temperature conditions.

▼ Petrol tank filler pipe coated in Plascoat PPA 571 for stone chip protection.



Street furniture



Many items of street furniture have benefited from Plascoat PPA 571, which has consistently out-performed traditional thermoset coatings.

Lighting columns



Plascoat PPA 571 is one of only three out of 52 corrosion protection systems that can extend the life of a lighting column by up to 50 years.



▲ Lighting column coated in PPA 571 in Indiana, USA after 2 years.



▲ Traffic control rising bollard coated in PPA 571.

Bus shelters, cycle racks, benches, waste bins, pedestrian barriers, hand rails and many other items of street furniture have benefited from Plascoat PPA 571, which has consistently out-performed traditional thermoset and liquid coatings in these applications.

Unlike most coatings Plascoat PPA 571 is unaffected by salt spray, stone chips and temperature extremes.

▼ Lighting column coated in polyester on the same road as above, after 2 years.



▼ A Plascoat PPA 571 coated bench, by the sea in Australia, still looks new after 5 years.



▼ Pedestrian street barriers, in the USA, coated in PPA 571.



Lighting columns in particular need extra protection at ground level where corrosion can start. Trials at the Swedish Corrosion Institute have proved that thermoplastic coatings such as Plascoat PPA 571 are one of only three out of 52 corrosion protection systems that can extend the life of a lighting column by up to 50 years.

► Local authorities across the United Kingdom specify lighting columns coated in Plascoat PPA 571.



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▼ PPA 571 is unaffected by animal waste, which can accelerate corrosion with other systems.





It is essential that steel and aluminium structures are protected from corrosion for as long as possible. Plascoat PPA 571 is ideally suited to achieve this objective.

It is essential that steel and aluminium in construction projects are resistant to corrosion for many years without costly maintenance programmes. Plascoat PPA 571 achieves this goal through a unique combination of performance benefits provided by a low-smoke, zero-halogen, non-toxic coating system.

Typical uses include the coating of rock pins, the steel in reinforcement concrete and structure metalwork on bridges.

In the event of a fire, the smoke generated from Plascoat PPA 571 is extremely low in toxicity. This makes Plascoat PPA 571 often the coating of choice in tunnels and enclosed public buildings.



▲ The steel frame of this Australian beach shelter was coated in 2012.



◀ Stadium seat frames coated in 2004 for a Bahrain race circuit.

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► No under-film corrosion after 12 years.



▲ Footbridge in San Sebastian, Spain.



◀ The green Plascoat PPA 571 was in excellent condition in 2012, after 20 years exposure to the elements.

◀ The liquid paint on the red hand rails has been re-coated three times in the same period.

▼ PPA 571 coated suspension cable covers after ten years in Spain.



Handrails



In many public buildings around the world there is a growing requirement for handrails to provide grip and a warm-to-the-touch 'feel'.

Swimming pools



Legislation around the world is requiring that swimming pools are secured to avoid accidents. Plascoat PPA 571 is resistant to the fumes from chlorinated pools.

Offshore and sub-sea



Plascoat PPA 571 is one of the few coatings that can be used successfully in marine environments and can withstand years of battering from sea spray and waves.

The rate of fouling from marine life and seaweed is slower compared with many alternative coatings.

Plascoat also produce a performance range of polypropylene and polyethylene coatings for oil and gas pipelines, including field joints, elbows and buckle arrestors

A wider world of applications



Whatever the application, Plascoat PPA 571 has long-term field tests to back its credentials.

Technical performance

Plascoat PPA 571 is a thermoplastic coating powder that can be applied by fluidised bed, flock spray or electrostatic spray methods. The following laboratory and field tests have been performed on suitably pre-treated metal:

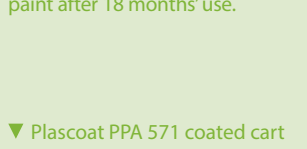
- Salt spray testing to ASTM B117 has exceeded 20,000 hours with no blistering, cracking, corrosion or flaking.
 - Under-film corrosion from a scribe tested to ASTM B117 for 1,000 hours on suitably pre-treated steel is between 0 and 0.5mm.
 - Loss of adhesion on testing to ASTM D 3359-A is zero.
 - After 2,000 hours QUV ASTM G154-06 (which supercedes ASTM G53), Xenon arc (ASTM G26) or five years in Florida at 45 degrees to the sun by the sea, there is no significant change in colour, gloss or mechanical properties.
 - At a suitable coating thickness, Plascoat PPA 571 and PPA 571H will protect metal from stone impacts to automotive specifications (e.g. SAE 400), to water industry standards (WIS 4 52 01 or AS/NZS 4158) and from aggregate slurries (ASTM A926-94).
 - Plascoat PPA 571 has been tested to ASTM A 926-94 (salt and grit). After one million cycles all other coatings (including thermosets and galvanising) were completely stripped. Over half of Plascoat PPA 571 coating still remained.
 - From in-house tests, Plascoat is able to estimate that PPA 571 coatings will continue to protect the metal for a minimum period of:
 - 35 years outside exposure in northern Europe.
 - 25 years outside exposure in southern Europe.
 - 15 years outside exposure in tropical regions.
- Provided that PPA 571 is applied in accordance to the technical datasheet, processing guides and longevity statement recommendations.
- Independent test results are available from SGS Belgium N. V. which may help to make items coated in Plascoat PPA 571ES eligible for an insurance-based guarantee scheme as follows:
 - 10 years minimum in rural, urban, industrial and coastal environments (C1-C4 as defined in ISO 12944 Part 2)
 - 5 years minimum in aggressive industrial and offshore environments (C5-1, C5-M as defined in ISO 12944 Part 2)



**How long
does your
coating last..?**



▲ Storage cart coated in liquid paint after 18 months' use.



▼ Plascoat PPA 571 coated cart after 18 months' use.

Plascoat PPA 571 thermoplastic powders are used in a wide variety of applications – including fire extinguishers, battery boxes, fan-guards, tanks, school furniture, shopping trolleys, stadium seating and submersibles.

Whatever the application, Plascoat PPA 571 has undergone long-term field tests to prove that it can provide:

- A long life with superior corrosion and abrasion protection.
- Excellent grip, feel and electrical insulation.
- Resistance to chipping, UV light, pollutants, chemicals and graffiti.
- An attractive, environmentally-friendly finish.



Fire properties



In the event of a fire, Plascoat PPA 571 has low smoke density and toxicity properties.

Plascoat PPA 571 and PPA 571 ES are composed almost entirely of compounds of carbon, hydrogen and oxygen. Unlike many paints, they contain:

- no reactive ingredients
- no phthalates
- no bisphenol A
- no halogens
- no isocyanates
- no heavy metals.

On burning, therefore, the fumes are principally made up of carbon dioxide and water. As a result, the toxicity of the fumes in a fire situation is extremely low. For instance:

- The index of toxicity of the smoke generated is 1.78 according to test method NES 713. This is well below the Royal (British) Navy requirement of 5.

- The index of toxicity of the smoke according to the test method BS 6853:1999 used for projects in the London Underground is 0.21. This is well below even the most stringent requirements of an index of 1.

Furthermore, the rate of generation of smoke and the density of the smoke are relatively low:

- The US Railroad requires that the smoke generated should be less than an index of 100 at 1.5 minutes, 200 at 4 minutes etc. The smoke index generated from PPA 571 when burning is only 110 after 20 minutes.
- The smoke density index according to the test method BS 6853:1999 used for projects in the London Underground is 1.13 (A0 (ON)) compared to a requirement of 2.6.

Under BS 476, Plascoat PPA 571 can be considered to be Class 0 and though not specifically flame retardant, more than meets the requirements for coatings in tunnels, enclosed buildings and on passenger trains.

Certificates are available for Plascoat PPA 571 or PPA 571 ES. Please contact Plascoat for copies.

▼ Handrail coated in PPA 571 in the London Underground.



Low mould growth and fouling rate



Plascoat PPA 571 contains no reactive ingredients and provides little 'anchor' or food for seaweed, barnacles, mildew and lichen.

Plascoat PPA 571 contains no reactive ingredients and provides little 'anchor' or food for seaweed, barnacles and lichen. While not specifically anti-fouling, the rate of growth of algae, fungus, mildew and marine flora or fauna is slower than on many other coatings.

As a result the coating will look like new for many years.

Further details can be obtained from Plascoat.

▼ Polyester coated fence with lichen after 10 years.



▼ Plascoat PPA 571 coated fence with no lichen after 15 years.



 **PPA571**

Overspray



▲ A 1mm plate coated in Plascoat PPA 571 and polyester after an impact of up to 12 Joules.

Given the correct procedures, Plascoat PPA 571 can be over-sprayed with polyester powder to provide an exceptional coating, offering:

- High scratch resistance
- Flexibility
- High impact strength
- An almost infinite variety of colours and finishes.



► Most of our technical datasheets, material handling datasheets and guides are available on the Plascoat website. For any other requests please contact Plascoat.

Graffiti removal



Many metro, subway and city authorities around the world including the Paris Metro and Stockholm City have confirmed that graffiti and fly-poster adhesives can be easily removed from Plascoat PPA 571 coatings.

Plascoat PPA 571 is impermeable to graffiti paints. Therefore, often you can wipe the graffiti off with just a cloth (but a small amount of solvent on the cloth will help).

Standard water-based graffiti removal products remove the graffiti paint within just a few wipes!

Pre-treatment

Plascoat PPA 571 is a high-performance coating. If the coating is required to last for many years, it is essential that the pre-treatment is also designed for long-term protection.

Plascoat PPA 571 will survive many years outside in adverse environments if undamaged. However, should damage through to the metal occur at any stage it is necessary that the pre-treatment allows the coating to continue to adhere to the metal for as long as possible.

rinse. Plascoat have found exceptional results with certain silane-based rinses and pre-treatments.

Further information can be obtained from Plascoat.

All metal items should therefore be clean, degreased and free from rust. ISO 12944 parts 3 and 4 provide useful information on design and metal preparation. Plascoat recommend the use of grit-blasting at least to Swedish Standard 2 1/2 for dip coating or the use of Zinc Phosphate systems for spray coating. Certain chromates (if compliant with local authority legislation) and resin-based systems can also be used.

If iron phosphate is used, Plascoat recommend the use of a suitable



Case study - Sutton Beach, Brisbane, Australia



Of all the cosmetically attractive street furniture coatings which are regularly exposed to salt spray or temperature extremes, Plascoat PPA 571 will deliver the best longevity performance and the lowest whole-life cost.



◀ In 1996, after six months of been exposed to sea salt in the air, the polyester coating had failed. The fence was then recoated with Plascoat PPA 571.

► After twenty years the polyester coated fence, across the road from the sea, has also stopped protecting the fence from corrosion. Now the local Brisbane authority will be burdened again by the cost of replacement.



In 1996 a local Brisbane coating company recommended Plascoat PPA 571 in a tender to remove, sand blast, re-coat and re-install fences in Sutton Beach, one of Brisbane's seaside parks. The fences, originally coated in polyester, had become unsightly and had started to rust after just six months. The work was awarded to the local company and the work was completed in the same year.

Recently, the Plascoat PPA 571 coated fence was revisited and the photographs speak for themselves. The fence is still in excellent functional and cosmetic condition.

In 1996 some of the polyester fences across the road and further from the sea, were not replaced due to their slightly better condition. Photographs of these fences, after twenty years, illustrate how polyester has performed. Despite being less affected by sea salt in the air, the polyester fences have still degraded both functionally and cosmetically.

By dramatically extending the lifetime of fences near the sea Plascoat PPA 571 has helped to deliver exceptionally low whole-life costs to the end customer, Brisbane's local public authority, who are ultimately responsible for the upkeep of these fences.



▲ In this recent photograph, after twenty years by the sea, the Plascoat PPA 571 coated fence is still in excellent functional and cosmetic condition.

Case study - Jackson Street Bridge, Indiana, USA



“I needed a tough and durable coating that, unlike polyester, would not require re-coating or any maintenance within the five year warranty specified by my customer. There is no doubt in my mind that Plascoat PPA 571 has saved me money.”

- George Pendry, President of Pendry Powder Coatings Inc.



◀ After just two years the polyester coating has failed leaving the lighting column looking unsightly.

Plascoat PPA 571 is highly resistant to road salt and stone impact damage. It also has extremely good flexibility and adhesion properties allowing the coating to protect sharp edges.

▶ Also two years old this Plascoat PPA 571 coated lighting column, of the same design and on the same road, still looks new.



The tale of two coatings in Indiana, USA

In 2011 Pendry Coatings recommended Plascoat PPA 571 in a tender for required restoration work on Jackson Street Bridge in Indiana, USA. The work involved the removal, re-conditioning, re-coating and re-installing all steelwork on the bridge. This included lighting columns, crash barriers, railings, and public information boards.

Pendry Coatings' end customer, The Department of Transportation for Indiana, was keen to evaluate Plascoat PPA 571 for future use elsewhere in the state. It requested that Pendry Coatings used polyester coatings for a second tendered restoration project a mile down the road on the same type of lighting columns as on Jackson Street Bridge to compare like for like performance. Both projects were awarded to Pendry Coatings and completed in 2012.

In March 2014, after two harsh winters, the two locations were revisited and the results were startling. The polyester coated lighting columns had already begun to flake off after just two years while the PPA 571 coated lighting columns still looked new.

Pendry Coatings is optimistic that the Department of Transportation for Indiana will soon approve PPA 571 for use throughout the state.



▲ Plascoat PPA 571 was used to coat the frame of this public information board.

▼ These PPA 571 coated ornamental railings will require no re-coating for decades to come.



Case study - Gas pipeline security fence, United Arab Emirates



Plascoat PPA 571 is a very popular coating in the Middle East and is ideally suited for use in hot, desert climates. It requires no cooled storage and can be applied in hot, humid conditions.



◀ The fence is fully exposed to the desert conditions where sand storms can occur regularly. Sand particles cannot abrade the flexible PPA 571 coating and simply bounce off.

▼ Completed in 2000, the fence stretches for many miles over the horizon. It is therefore vital that maintenance is kept to a minimum.



The climate in the United Arab Emirates is very demanding on coated metal. Sacrificial zinc, polyester and PVC coatings can be quickly stripped off the metal by wind blown sand. Very high levels of UV can also cause coatings to degrade and fail after just a few years. Two of the key local benefits of Plascoat PPA 571 is that it is highly UV resistant and not abraded by wind blown sand.

The summer heat can also cause problems with other coatings as the heat causes cross-linking to occur while the powder is still in storage, rendering it unusable. Air-conditioned warehouses can prevent this problem but come with significant energy costs. Plascoat PPA 571 does not require air conditioned storage, thereby allowing cost savings to be made.

Often projects, such as this pipeline security fence, are in remote areas and as such it was paramount that future maintenance requirements were kept to an absolute minimum. The end client was particular impressed that Plascoat PPA 571 had a multi-decade life span in these remote areas with no requirement for ongoing, coating-related, maintenance.

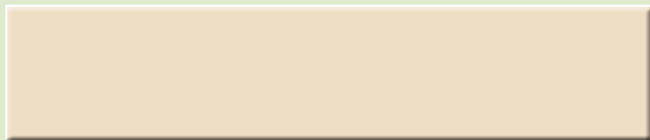
In 2015, fifteen years after installation, this fence is still protecting the pipeline and shows no sign of corrosion.



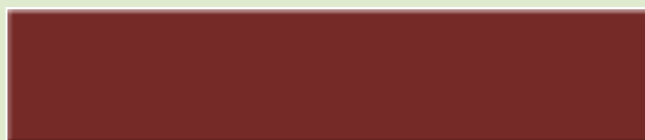
▲ In 2015, after fifteen years exposure to wind blown sand and high UV levels, Plascoat PPA 571 is still protecting the fence from corrosion.



Our colour range is listed in Plascoat 3-digit codes, and RAL 4-digit identification numbers where appropriate.



Beige 222 | RAL 1015



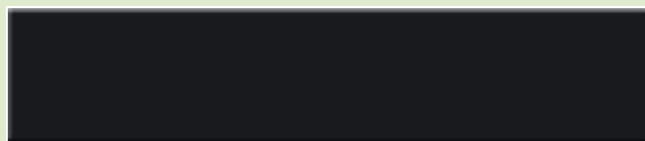
Brown 813 | RAL 3009



Blue 542 | RAL 5015



Yellow 344 | RAL 1021



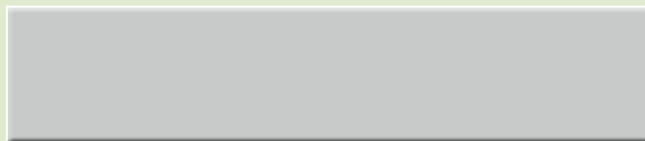
Black 700 | RAL 9005



Grey 654 | RAL 7001



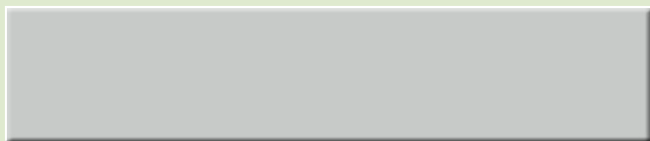
Blue 536 | closest RAL 5017



Silver | RAL 9006



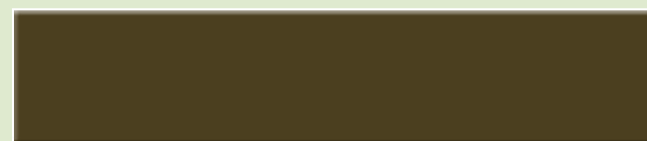
Grey 640 | RAL 7016



Grey 613 | RAL 7035



Red 233 | RAL 3020



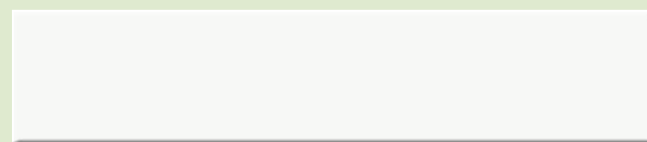
Brown 838 | closest RAL 8019



Grey 695 | closest RAL 7046



Green 475 | RAL 6005



White 110 | RAL 9016

Please note:

Whilst every effort is made to ensure the colours on this page are as accurate as possible, due to printing and on-screen limitations, these colours should be used as guidance only. Colours reflect coated finish, and matched to nearest RAL number where appropriate. Samples are available as coated plates or powder.



Plascoat has a policy of exceeding market expectations, in terms of quality and technical liaison with customers world wide, for all of its products and services.

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