SMART COATINGS

ADAPTA
POWDER COATINGS

adapts personalizes expresses solves expands inspires creates
excites brightens invents innovates feels helps thrills
gets involved supports listens unites solves shares

your satisfaction our commitment

We have a passion for challenges that make a **difference** and **competitiveness** for our customers

contributes imagines easier drives adds develops
throbs stimulates speeds up makes
trains advances joins delights

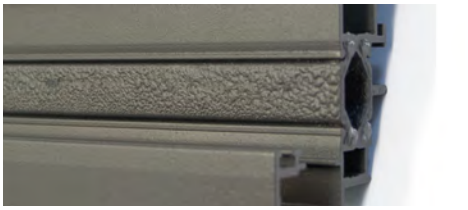
suggest
innovate@adaptacolor.com

PiMC

COIL COATING

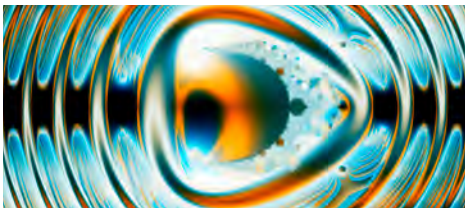
TRACKER

ADAPTA NBP



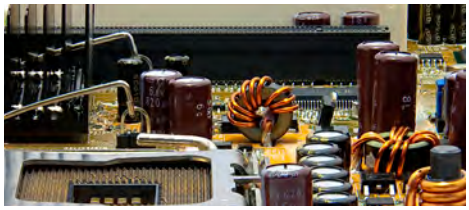
LASER

MAGNETIC COAT



ZEROhms / ZEROstatic

ELECTRICAL INSULATION



VIVENDI COATINSULATE

+BIO-NOX

AUTOCLEAN

ANTI-GRAFFITI

STICKERSPROOF

NON SLIP COAT

NON SLIDE COAT-9H

ABRASION PROOF

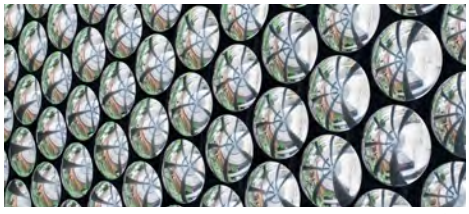
SLIDE COAT

HIGH FLEX

BIOPROOF

INSECT PROOF

RETROREFLECTIVE



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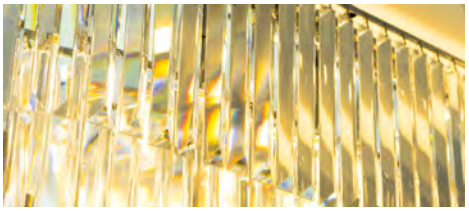


33

PHOTOLUMINESCENT

34-35

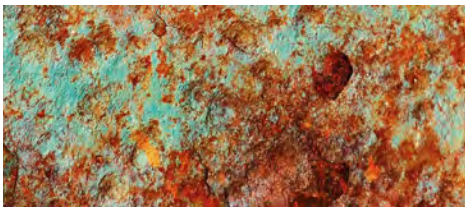
THERMOCHROMIC/PHOTOCHROMIC/FLUORESCENT

36

NEON COLLECTION

37

PATINA COLLECTION



38

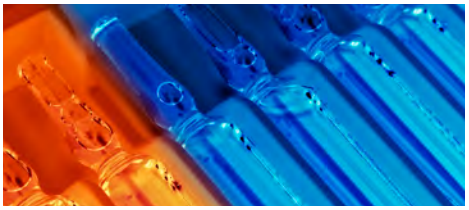
HEAT RESISTANT

39-40

LOW BAKE

41

IR/UV



42

ULTRA THIN

43

PRIMER

44-45

RUSTPROOF

46-47

ADAPTA SDS

48

MULTICOLOR EFFECTS / ALCHEMY

49

BONDING SYSTEM

50-51

QUICK COATS & HVM / BACK UP

52

Alphabetical Index

PiMC

PiMC (powder in mould coating) coatings or powder paint for moulding allows the moulding and painting of fibreglass reinforced plastics (FRP) in the same operation. They have been developed with unsaturated polyester resin which, in turn, serves as a basis for specific IR/UV curing powder coatings.

SMC (sheet moulding compound) is a fibreglass reinforced plastic consisting of a thermosetting resin, a fibrous reinforcement, fillers and additives that give certain properties to the final piece.

Its applications include the manufacture of electronic components, automotive parts, interior trimming of trains and other public transport, synthetic sinks and toilets, water tanks, etc.

Its main advantages are its high strength and low weight, heat resistance, fire resistance, electrical insulation, waterproof, low volatile emissions and ability to achieve tight tolerances and complex geometries.

Coil Coating

COIL COATING

ADAPTA POWDER COATINGS

Coil coating is a continuous sheet metal coating process. Aluminium and steel substrates are the most common, being supplied in rolls from the rolling mill. Powder coatings designed for this type of application are characterized by their adaptation to high curing speeds.

Curing different technologies can be used to get a correct polymerization of these products, individually or combined.
The most common are:

- CONVECTION CURING
- INFRARED CURING

Our formulations may meet or exceed the technical specifications for architectural coatings.

The remarkable flexibility of these products allows for a folded up 0T, offering in turn, excellent corrosion resistance and good resistance to abrasion.

TRACKER

Tracker

Powder coatings whose design incorporates tracers that can be tracked. These markers, when irradiated with energy of a particular wavelength, absorb it and later emit it in a different section of the electromagnetic spectrum, making it possible to identify them with suitable decoders.

With the incorporation of these new technologies we can ensure the paint specifications established for our product are strictly adhered to, being able to know if the coating selected or prescribed is the one finally used. To go even further, if the selected feature of the paint is present in our products, above all in those intrinsic characteristics difficult to see with the naked eye, such as conductivity, resistance to microorganisms, etc. These new coatings developed by Adapta represent an easy to implement, safe and cost effective solution which allows reliable protection of your brand and avoids complaints about products not manufactured by your company or products that are not suitable for the use for which they were developed.

Our client works closely with the R&D+i Department in the analysis of security requirements and traceability of its products to reach a solution that meets the specifications requested.
Identification mechanisms are selected in the product development phase and can be visual or audio, tracking technology visible or invisible to infrared and customized detection and tracking systems.

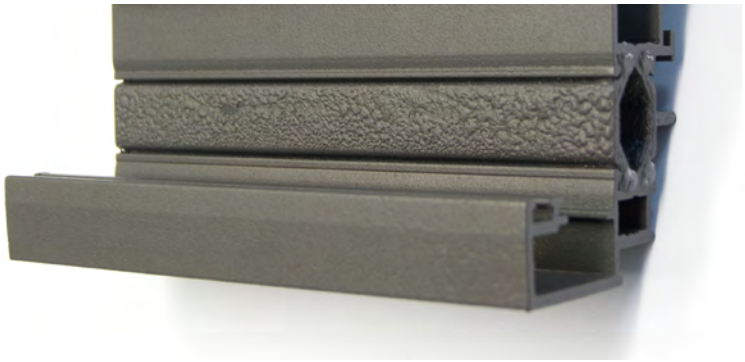
Adapta NBP

ADAPTA NBP

ADAPTA POWDER COATINGS

The solution to blistering in the thermal bridge rupture

In the construction of buildings, their location in a certain climate zone, the façade orientation and the surface area taken up by the windows are just some of the variables that will determine the characteristics of the construction materials for their cladding.
The ever more demanding insulation performance required by the steelwork market has meant that the thermal bridge rupture is increasingly widespread in aluminium profiles.



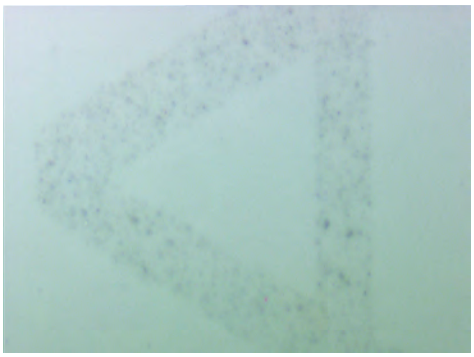
The thermal bridge rupture is obtained through a polyamide profile mechanically placed between two of the aluminium profiles going to make up the window. This polyamide profile is usually incorporated before aluminium profile lacquering. In these cases, the polyamide profile undergoes the same treatment and painting processes as the metal profile, lending it a poor finish in the polyamide area. Although the defects obtained may be very different, generally speaking the poor finish can be put down to bubbles also called “blistering”.

Adapta has developed a new line of powder coatings called ADAPTA NBP (Non-Blistering Polyamide), which minimises this defect by allowing the moisture present in the polyamide to be released, thereby obtaining a uniform finish, particularly in textured finishes which are usually the most problematic. The product can be customised on request by the customer in any colour and it can be developed in standard or a super-durable polyester and according to the requirements established by GSB and QUALICOAT.

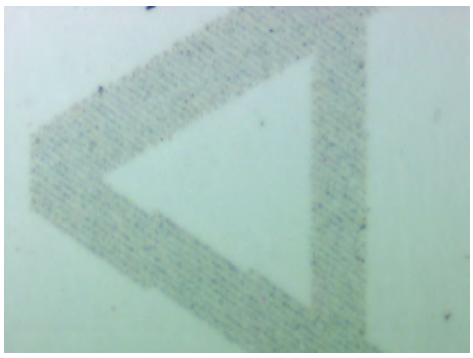
Laser

LASER

The laser marking of products is increasingly used owing to traceability requirements and the necessary information to be incorporated into and accompany the products. The amount of information and quality of the marking, perfectly legible and indelible, make coatings necessary whose functionality allows robust, fine-lined and high resolution markings. On a global market like the present one the forgery proofing incorporated by consumer products includes miniature codes which must be high resolution and defect-free so as to remain legible in any circumstances.



Marking using a type of YAG laser on standard coating.

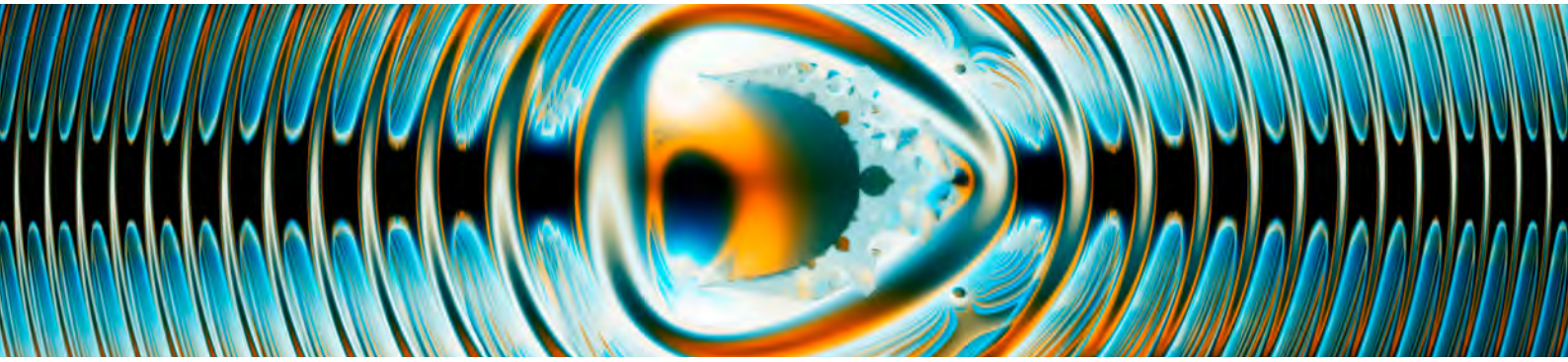


Marking using a type of YAG laser on special coating.

MAGNETIC COAT

Magnetic Coat

Magnetic paint allows the surfaces of non-ferrous materials to be converted into films suitable for affixing magnets. This allows the placement of decorative magnets for the securing of notes in elements lacking this magnetic property, such as fiberboard (MDF). In kids' rooms we can combine these coats with those with a blackboard effect in study areas.



Blackboard effect coats are microtextured paints which, thanks to their special formulation, allow the chalk marks appearing on their surface to be removed easily. Black is the most standard color though it may require periodic touch-ups.

The blackboards for removable markers are coated in anti-graffiti dust paints.

ITE
Technological Power Institute
REPORT Nº: IE-ITE-110330/M2

Superficial Resistivity (Ω): 8.03×10^6
Transversal Resistivity (Ω): 1.32×10^5

ZEROhms® & ZEROstatic®

ZEROhms®
ZEROstatic®

They are designed for the coating of highly sensitive electronic devices for the purpose of reducing the generation of high EMI (electro-magnetic interference). Its use is especially recommended for those pieces of equipment in which the process is affected by the ATEX regulations and/or for those working environments related to semi-circular lipoatrophy or any other piece of equipment where the dissipation of static electricity is required.

Innovation

A powder coating prepared with an epoxy and polyester resin system which provides a resistance between $1x10^6$ and $2x10^{10}$ ohms or which would be the same with high conductivity, which makes it work as a static dissipater system. ZEROhms® presented in dark colours and different finishes, including metallics. The ZEROstatic® quality with a resistance of 10^8 and which is a static dissipater is available in a greater variety of colours and finishes.

SEMI-CIRCULAR LIPOATROPHY

Health and safety regulations in regard to the exposure of workers to the risks arising from physical agents (electromagnetic fields).

European agreement on the International carriage of dangerous goods by road. (ADR)

Protection for the health and safety of workers exposed to explosive atmospheres. (ATEX)

AIDIMA

Furniture Technological Institute
REPORT Nº: C/0906140-01 a 04

Electro-static charge accumulation propensity

The ZEROstatic® coating offers an electrical resistance in accordance with the anti-static material characteristics, whilst a normal coating gives a high insulation value.

Danger	Recommended range usage		Nuisance
$R \leq 1x10^6\Omega$	$1x10^6\Omega < R \leq 1x10^7\Omega$	$1x10^7\Omega < R \leq 2x10^{10}\Omega$	$R > 2x10^{10}\Omega$
	Conductor floors ZEROhms ®	Conductor floors ZEROstatic ®	Insulating floors (non-anti-static)

Powder accumulation propensity

Type of sample	Position	
	Horizontal	Vertical
MDF ZEROstatic Board	11%	17%
ZEROstatic sheet	12%	22%
ZEROstatic pipes	10%	19%

* Percentage reduction in the ZEROstatic® coating.

Influence on the appearance of semi-circular lipoatrophy

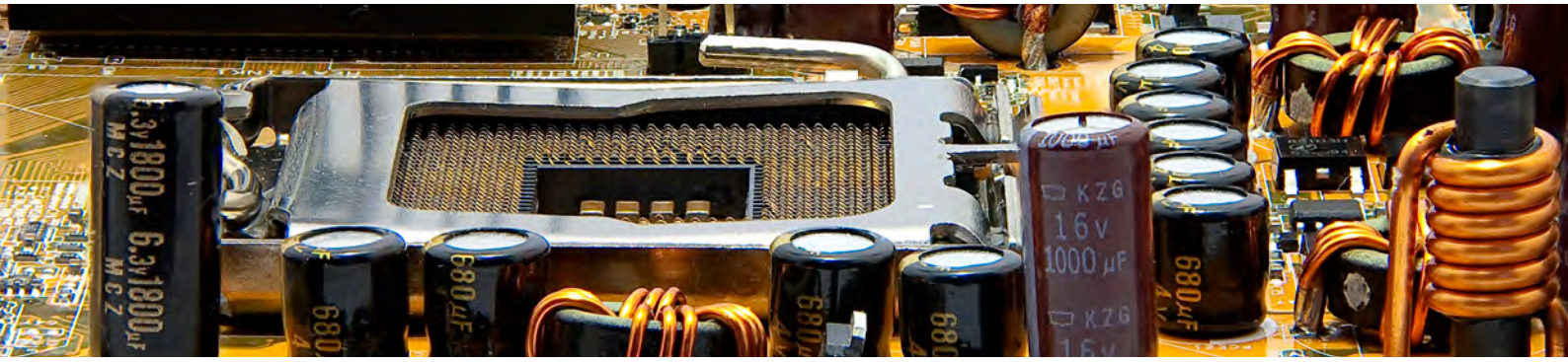
ZEROstatic® allows a greater dissipation of the electro-static charge and therefore a lower participation in the creating of electro-magnetic fields, reducing the possibility of the appearance of semi-circular lipoatrophy.

Electrical Insulation

ELECTRICAL INSULATION

ADAPTA POWDER COATINGS

Coat with very low porosity dust with electrostatic application or application by fluid bed, designed to provide high protection and excellent electrical insulation in electronic components, switches, connectors, toroids, slots, etc.



Working temperatures up to 300°C.
Maximum working voltage 1,000 volts.

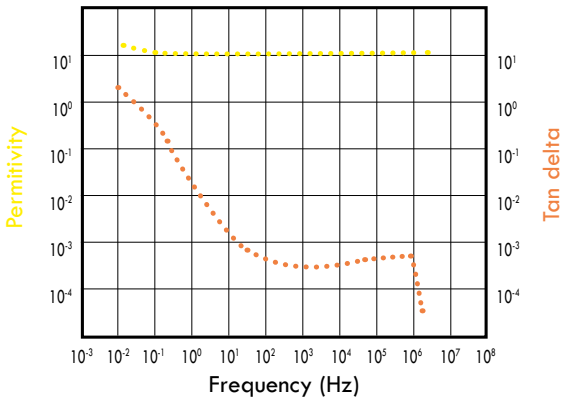
This coat provides the following characteristics:

Excellent cut through resistance.
Excellent chemical and heat resistance.
Excellent resistance to thermal shock and impacts.
Flame Retardancy.
Developed in different colours.

ITE
Technological Power Institute
REPORT N°:
IE-ITE-110299/M1

Superficial Resistivity (Ω): 2.12 x 10^{14}
Transversal Resistivity (Ω): 1.73 x 10^{12}
Dielectric Rigidity AC
Breakdown Voltage (V): 6,150 ± 7.8 x 10^{2}
Electrical Field (V/mm): 41,000 ± 5.2 x 10^{3}
Mean Permittivity Value: 100 F/m

Loss factor at room temperature
(Tan delta)



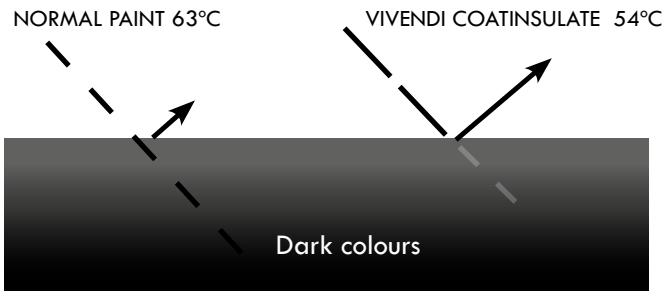
VIVENDI COATINSULATE®

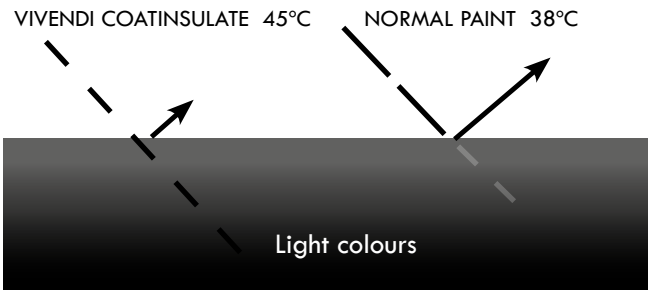
Vivendi Coatinsulate®

ADAPTA POWDER COATINGS

Energy saving has become a goal for humanity and a challenge for sustainable development. 50% of energy is consumed by buildings, with the air conditioning adding up to between 40% and 60% of the consumption, of which 25% is lost through doors and windows. Adapta Color had no intention of being left out of this social awareness that calls for intelligent consumption so as to prevent the global warming of the planet. VIVENDI COATINSULATE® was developed to modify the absorption of infra-red rays, thus having an influence on the thermal transfer of the coating to the support, in this way contributing to reducing or increasing the temperature from between 15% and 20% in line with the differing shades.

■ Light units reflected.



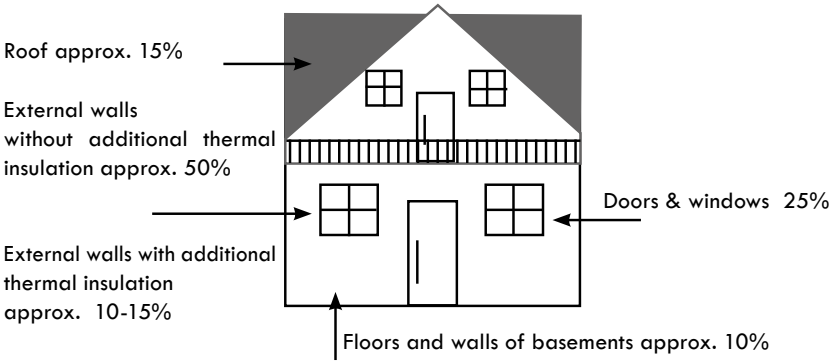


Innovation

The Technical Building Code responds to the new demands for sustainability in the building processes and by the builders, that manifests itself in it being compulsory to design more efficient buildings, carrying out an exhaustive analysis of the building to limit the energy demand.

CTE
TECHNICAL BUILDING CODE

Heat and cooling losses



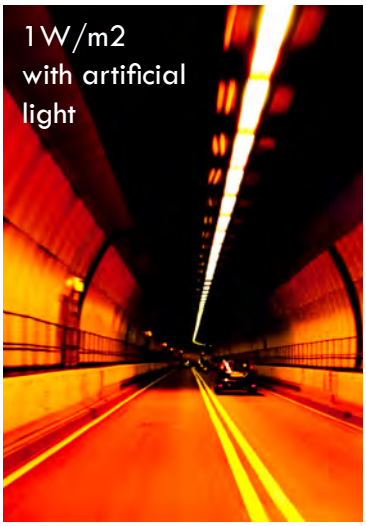
COLOURS		
Light colours		Dark colours
38°	Normal Paint	63°
45°	Coatinsulate	54°

+BIO-NOX®

These coats transform contaminating nitrogen oxide (NOx) into substances which are harmless to human health. NOx is a general term which refers to a group of very reactive gases such as nitrous oxide (NO) and nitrogen dioxide (NO2)- which contain nitrogen and oxygen in various proportions. In addition to their toxicity, nitrogen oxides react with hydrocarbons without burning and are the main causes of acid rain. They are gases which contribute to climate change and the global warming of the planet and they are around 300 times more harmful than CO2 itself.

Photocatalytic paints capture the nitrogen oxide particles (NOx) emitted in the combustion of vehicles, decomposing harmful gases (oxidative mineralisation) into harmless nitrates thanks to the action of the ultraviolet rays which solar radiation contains and the oxygen in the air. With the rain these soluble nitrates are easily dragged by water.
Our photocatalytic coating +bio-Nox® has been developed to be activated using artificial UV radiation at low light intensity, 1 W/m2, and in adverse conditions of relative humidity of 5%. Following a period of activation of 168 - 192 hours, NOx removal rates reached 42% and 45.4%, respectively, making it ideal for use in tunnels and galleries.

Comparative lifecycle analysis between +bio-Nox® and a non-photocatalytic coating, using the Eco-gauge 99 methodology, shows a largely positive environmental balance for NOx removal.



CARTIF Foundation
REPORT Nº: IE- LAE 07 002 / 11

It is important to point out that the high percentage of NOx removal is maintained at different relative humidities.
The percentage of NOx removal following an activation of 48 hours at 10 and 30 W/ m^2 is 53.4% and 61.5% respectively.

RESULTS

NO_3 removal test, standard (Test tube code RM-0071).

Photocatalytic NO_3 removal yields, standard test.

Sample	*Relative humidity (%)*			
	5%	*25%*	*50%*	*75%*
NO_3 concentration, input (pmm)	1.013	0.99	0.98	1.00
NO_3 concentration, ouput (pmm)	0.359	0.332	0.335	0.336
NO_3 removal (%)	65.4%	65.8%	64.5%	66.4%
NO_3 removal (pmm)	0.61	0.62	0.61	0.62
NO_3 removal (mg/h.m^2)*	2.46	2.47	2.42	2.50

*Input airflow 1l/min. Duration of test 900 seconds.

Analysis of nitrates: 1.2 mg NO_3.

Consiglio Nazionalle delle Ricerche
Instituto sull´Inquinamento Atmosferico
REPORT Nº: 0003268
UNI 11247-2010 Determination of the degradation of nitrogen oxides in the air by way of inorganic photocatalytic materials: continuous flow test method.

The NO2 photoreduction values expressed as NOx photoreduction (NO2+NO) for a 24-hour period correspond to a photocatalytic drift of 64.47 ± 6.13%. Furthermore, the NO photoreduction values, expressed as NOx photoreduction (NO2+NO) for a 24-hour period, correspond to a photocatalytic drift of 38.11 ± 7.48%.

Institute of Chemical Technology : REPORT Nº: 28-04-2011

Universität Erlangen- Nürnberg: REPORT Nº: 15/11/2011

AUTOCLEAN

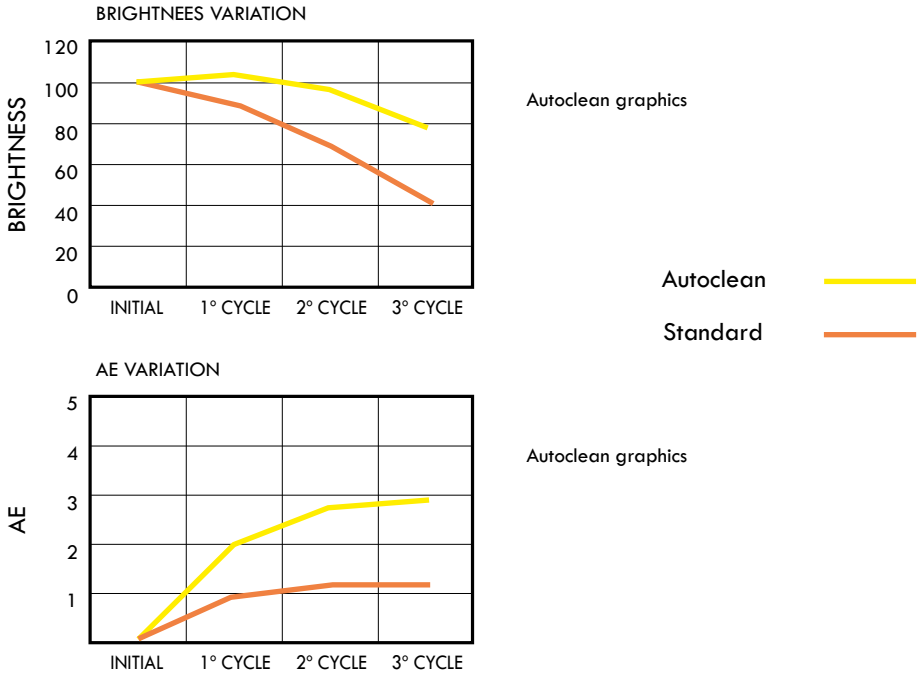
Autoclean

The autoclean coats developed by Adapta Color are based on two different research lines which give rise to the following technologies:

Photocatalytic coats: Organic compounds and molecules are gradually deposited on the surfaces which are responsible for their staining and they indirectly serve as the basis a securing the common dust. The photocatalytic action of these paints acts by removing these molecules, minimising the possibility of anchoring other contaminants and reducing the need for the maintenance of these surfaces.

Hydrophobic coats: These simulate the so-called "lotus effect" when the drops of water fall on the lotus leaves, being collected in circles owing to the fact that the small filaments of the surface are joined, creating a water-repellent surface. This type of coats has been designed so that the drops of water drip, preventing them from drying on the surface and avoiding the creation of mould or a dirty appearance, generating, in turn, a mechanical drag of the particles deposited in the film.

AIDICO
Technological Construction Institute
REPORT Nº: IT 110082
Autoclean evolution



Anti-graffiti

ANTI-GRAFFITI

ADAPTA POWDER COATINGS

This product range has been specially designed to protect coated objects from acts of vandalism such as graffiti made with aerosols and/or marker pens, as it allows them to be cleaned with the normally used solvents without damaging the coating.

A powder coating prepared from hydroxylate polyester resins. It can be made in any colour and finish including transparent and metallic colours. It has good external resistance, likewise excellent chemical resistance to the most common chemical agents such as xylene, acetone, turpentine, methyl ethyl ketone (MEK).

PHYSICAL	MINIMUM	MAXIMUM	METHOD
Furnace time/temperature 0.8 mm phosphorus steel substrate	14' at 200°C 0.8	16' at 200°C 0.8	Total Time
MECHANICAL			
Film thickness	60	90	ISO 2360
12.5 mm direct impact	5		ISO 6272
Chequered adherence	GT0		ISO 2409
Persoz hardness	220		ISO 1522
Erichsen pressing	5	14	ISO 1520
Cylindrical bending		5	ISO 1519
85° shine angle	95	112	ISO 2813
OTHERS			
Visual colour	Transparent		NIZI-001
General appearance	Good		NIZI-001
Solvent resistance M.E.K.	4		NIZI-008

SNCF
Agence D'Essai Ferroviaire
REPORT N°: DOC046570-00/MES018136
Anti-graffiti classification in accordance with standard 100% cleaning of ink, pens and paint.

AIDICO
Technological Construction Institute
REPORT Nº: IT090115
Determination of resistance to graffiti ASTM D6578-08

Resistance of the sample 53215 to graffiti

Marker	Removed with	Delta E / CIE LAB[1]		Shine relationship at 60º [1]		Classification	
		without ageing	/aged	without	/aged	without	/aged
Blue solvent base	IPA	0.84± 0.11	1.07 ± 0.16	1.0	0.9	8	8
Red acrylic spray	IPA	1.07± 0.18	1.97 ± 0.50	1.0	1.0	8	8
Red alkyl spray	IPA	1.30± 0.23	1.54 ± 0.33	0.9	0.9	8	8
Blue wax crayon	DETERGENT	1.86± 0.09	1.86 ± 0.04	0.9	0.9	9	9
Blue ball pen	IPA	1.41± 0.11	1.93 ± 0.24	0.9	0.9	8	8
Black water based	DETERGENT	0.44± 0.19	1.85 ± 0.19	1.0	1.0	8	9

[1] It is considered that the marker has been completely removed when DELTA E CIE LAB is <2 and the relationship of final shine/initial shine is greater than 90%.

[2] Taking the assessment of the results into account that a transparent coating has been tested.

[3] The trials on the aged sample were carried out after exposing the sample to 1,000 hours of Q.U.V.-A sults into account that a transparent coating has been tested.

STICKERSPROOF®

Thousands of adverts plaster streetlights, traffic lights, road signs, and urban buildings in cities. The proliferation of this type of publicity incurs high costs for municipal coffers for cleaning and maintenance services. The situation has got to such an extreme point in the centre of large cities that councils have been compelled to penalise the practice, applying the municipal ordinance related to the protection of citizen coexistence and the prevention of antisocial behaviour.

StickersProof products make it easier to remove a wide range of these adhesives. The product's finish has a smooth texture and can be manufactured in any colour. This product incorporates other functionality such as anti-graffiti features as well as its anti-adherent feature. Its high durability, alongside these possibilities of removing unwanted adhesives and easily cleaning the surface, allows the owners to keep several community elements clean in the face of vandalism, all at a low maintenance cost.

ITENE
Technological Institute of Packing, Transport and Logistics
REPORT NO.: 02.0216

	Determination of the penetration force	
Normal texture	Force at the tip (N)	Average force (10-60mm) (N)
Average	36,35	18,64
Standard deviation	7,84	4,57

	Determination of the penetration force	
Anti-adherent texture	Force at the tip (N)	Average force (10-60mm) (N)
Average	0,73	0,22
Standard deviation	0,15	0,13

As can be seen, the average value of the peeling force at 180 ° corresponding to the samples with the anti-adherent coating is substantially lower.

INESCOP
Footwear Technological Institute
REPORT NO.: C-16026842
Determination of contact angles, conditioning to high and low temperatures and sticking abilities according to regulations UNE-EN 828:2013 and UNE-EN 1939:2004..

	Contact angles		Surface energy (mJ/m^2)
Sample	Water	Diiodomethane	
Normal texture	76	39	41,4
Anti-adherent texture	97	64	26,2

Unsticking following preparation at 50ºC

	Low Temp.= 10ºC		High temp.= 50ºC	
Sample	Peeling force* (N/10mm)	Appearances** (%)	Peeling force* (N/10mm)	Appearances** (%)
Normal texture	1,1	100S1	3,5	40M1/60A2
Anti-adherent texture	1,3	100A2	0,5	100A2

* 1 N/mm is approximately equal to 1 kg/cm.
** The % of each appearance is given as a guideline and in an approximate fashion.
Appearances: S1 Delamination of the adhesive sticker. M1 Tearing of the adhesive sticker. A2 The adhesive detaches from the aluminium.

NON SLIP COAT®

This range of anti-slip coatings has been designed in order to comply with the basic requirements of 'Safety in Use' which are established in the Technical Building Code.

This deals with reducing the risk of users suffering injuries to acceptable limits during the envisaged use of buildings, with appropriate surfaces to prevent slipping and mishaps that make movement difficult. Especially on stairs, level changes and access ramps.

ITC
Institute for Ceramic Technology
REPORT Nº: C101521
DIN 51097 - Determination of the anti-slip properties in areas where there is barefoot movement.

It has been determined that our range of Non Slip Coat® products has been classified as CLASS A in accordance with the Standard.

	DIN 51097	Angle of slip
	CLASS A	≥12°
	CLASS B	≥18°
	CLASS C	≥24°

AIDICO
Technological Construction Institute
REPORT Nº: AE101192
According to the UNE-ENV 12633, Annexe A Standard, which specifies the CTE (Technical Building Code) in regard to 'Safety against the risk of falling' a USRV value of 48 was obtained (Slip Resistance > 45 = Class 3, maximum classification of slip).

ITC
Institute for Ceramic Technology
REPORT Nº: C101970
ISO/DIS 10545-17 – Force that the surface resists slipping. Coefficient of friction.
Using the TORTUS method and according to the Standard a highly satisfactory valuation was achieved (average value between 0.40 and 0.74).

ITC
Institute for Ceramic Technology
REPORT Nº: C101971
DIN 51130 – Determination of the anti-slip properties in work areas where there is movement with safety footwear.

It has been determined that our range of Non Slip Coat® products has a critical slip angle from 19° to 27° corresponding to an R11 classification.

	DIN 51130	Angle of slip
	R 9	3° - 10°
	R 10	10° - 19°
	R 11	19° - 27°
	R 12	27° - 35°
	R 13	>35°

Non Slide Coat-9H

NON SLIDE COAT-9H

ADAPTA POWDER COATINGS

Coatings with high shear strength and scratch resistance with pencil hardnesses of 9H compared with standard coatings whose usual specifications are 2H.

AIDIMA Report	Test report 1312019-01R
Pencil scratching (ASTM D3363) Load applied to tip - 300g (2.94N) Shear strength (Pencil hardness) - 9H Scratching strength - 9H	

ABRASION PROOF®

This line of coatings has been especially developed to give excellent resistance to abrasion. The mechanical action of rubbing and wear during transport or use of coated objects erodes their surface, especially when particles of dust or other materials are deposited.
In the rotary platform of Taber abrasion the deterioration of the trial area is assessed, and especially in the case of paints, the milligram loss for the number of abrasion cycles or vice versa is determined. The resistance to abrasion of a coating has no direct relationship on its resistance to scratching.

Report AIDIMA Test Report	0907065-01
Abrasion Resistance (DIN 68861-2) - N° of cycles - Resistance Group	 >650 2A
Abrasion Resistance (mg/1,000 cycles) (ASTM D 4060)	43 (5)

- The classification obtained by the ABRASION PROOF® coating is 2A, the highest classification given by the standard.

SLIDE COAT®

Slide Coat ®

ADAPTA POWDER COATINGS

Coatings that combine greater resistance with an extremely low friction coefficient are the ones that provide good properties to slipping. Ideal for uses such as commercial dispensers, garden tools or objects that are stacked for transport or use.

Report AIDIMA Test Report	0907065-02 A		0907065-02 B	
	SLIDE COAT		STD FINISH	
	Angle (°)	Tangent	Angle (°)	Tangent
Measurement of static friction coefficient (ASTM D 4518. METHOD A)	11° 0′	0.194	13° 30′	0.240
	10° 30′	0.185	14° 0′	0.249
	10° 0′	0.176	14° 0′	0.249
Average	0.185		0.246	
Standard Deviation	0.009		0.005	

■ The SLIDE COAT® coatings offer an improvement in the friction coefficient from 30% to 35%.

HIGH FLEX®

Coatings that have a high quality in so far as adherence and mechanical properties, at the same time providing extraordinary flexibility. Operations of bending, pressing, stamping and other operations of handling are possible once the coating has cured, enabling more efficient production processes and savings in logistical terms. Beach accessories such as chairs and sun beds or tent structures are their most common uses.

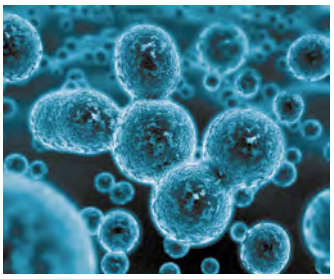
			ISO 6272	ISO 1520	ISO 1519
	Substrate	Thickness	Impact	Pressing	Bending
HYBRID STD.	Steel	70-80µ	<80/12.5x1kg	< 8.5mm	>5mm Ø
HIGH FLEX	Steel	70-80µ	>100/12.5x2kg	>11.5mm	

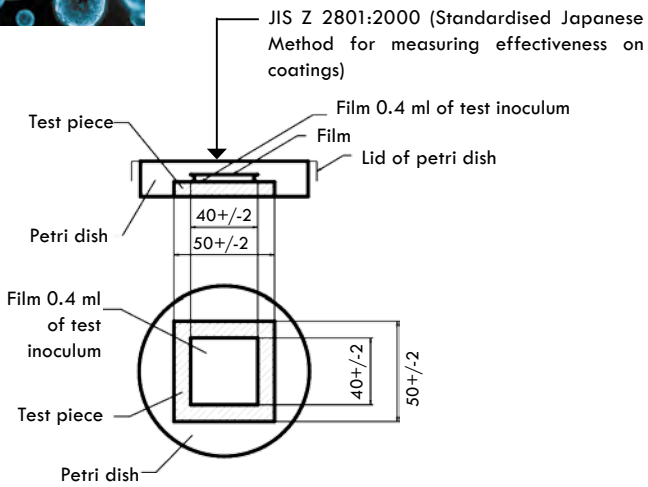
BIOPROOF®

ADAPTA BioProof® special coating
Micro-organism resistant – film protector

Micro-organisms are everywhere and very often they are a serious problem for the construction and maintenance of differing infrastructures, especially those intended for public and/or sanitary use. The effectiveness of the cleaning diminishes over time, making greater protection necessary. Our studies enable us to guarantee the effectiveness of BioProof®.

	SABATER PHARMA Ref. 08F1016 30-60 min.	SABATER PHARMA Ref. 08A2191 European Pharmacopeia 6° ED	UNIVERSITÀ DEGLI STUDI DI PAVIA	CHELAB S.r.l. Ref. 07/133874	LAW LABORATORIES Ltd. Ref. 05A0856	AIMPLAS Ref. AT-0245/10 UNE-EN-ISO 22196
STAPHYLOCOCCUS AUREUS	ATCC 6538	ATCC 6538	ATCC 6538	ATCC 6538 P	ATCC 6538 P	DSM 1756
PSEUDOMONAS AERUGINOSA		ATCC 9027	ATCC 15442			
CANDIDA ALBICANS		ATCC 10231				
ESCHERICHIA COLI			ATCC 10536	ATCC 8739	ATCC 8739	DSM 346
ENTEROCOCCUS HIRAE			ATCC 10541			





Results

Stap. Aereus	Initial	24 hours
Inoculated	100,000	150,000
P.Adapta Bioproof sample1	100,000	2,200
Normal paint sample2	100,000	180,000

Esch.coli	Initial	24 hours
Inoculated	100,000	29,000,000
P.Adapta Bioproof sample1	100,000	1,300
Normal paint sample2	100,000	19,000,000

■ Analysis certificate 05A0856

Advantges

- It maintains a low level of germs on the surface of the coating.
- It achieves optimum hygiene.
- Resistant to the usual cleaning processes.

Insect Proof

INSECT PROOF

ADAPTA POWDER COATINGS

Adapta develops paints with insect repellent activity.

Mosquitos are one of the biggest carriers of infectious diseases for human beings. Indeed, in certain populated areas mosquitos are carriers of fatal diseases such as malaria and encephalitis, in addition to being responsible for the ailing health of millions of people, children being the most vulnerable group of the population.

Adapta has concluded a research project geared to obtaining insect repellent powder paint by means of processes involving the production and application designed especially to preserve the activity of these repellent substances.

The powder paint obtained has been tested by a prestigious specialist laboratory, and registered an efficacy of 62% against the Adedes aegypti mosquito. This mosquito is the carrier of the yellow fever and dengue fever viruses. Testing was conducted in accordance with the methodologies used by the international agencies WHO Guidelines for Efficacy Testing of Spatial Repellents and Technical Notes for Guidance by the European Commission. Based on the results obtained and the information contained in scientific literature, the paint features repellent activity. This activity could be improved by increasing the active substance percentage to the maximum concentration limits published by the US Department of Defence in Insect Repellents: Principles, Methods and Uses.

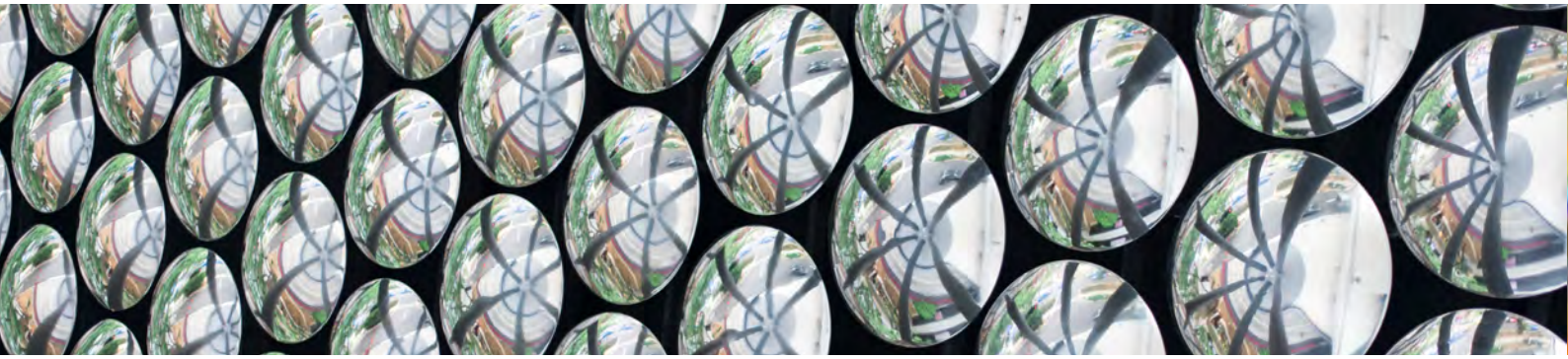
In the case of the powder paint developed by Adapta it has been proved that the kinetic release model followed by coating is first order, reason for which a repellent activity of greater than two years is foreseeable. The efficacy of the coating and the duration of the same on end products should be analysed on an individual basis in the environmental conditions which are closest to those of the final use of the product. One of the possible practical uses of this paint is on garden furniture, reason for which it has been developed with outdoor qualities and in a shiny white colour. Initially, the product features no limitations with regard to production in other qualities, colours or finishes.

The coating does not release any odours and contains no active substances which may be toxic to humans, and no systemic health effects have been reported. It has been proved that the paint undergoes no significant loss of the active substance when subjected to normal cleaning operations.

RETROREFLECTIVE

Retro-reflective

Coating that gives the surface to which it is applied the property of reflecting light towards the light source regardless of the angle of incidence.



CEDEX
Center of Studies and Experimentation of Public Works
REPORT Nº: 53.441- R
Retroreflection coefficient according to the UNE-135334 standard.

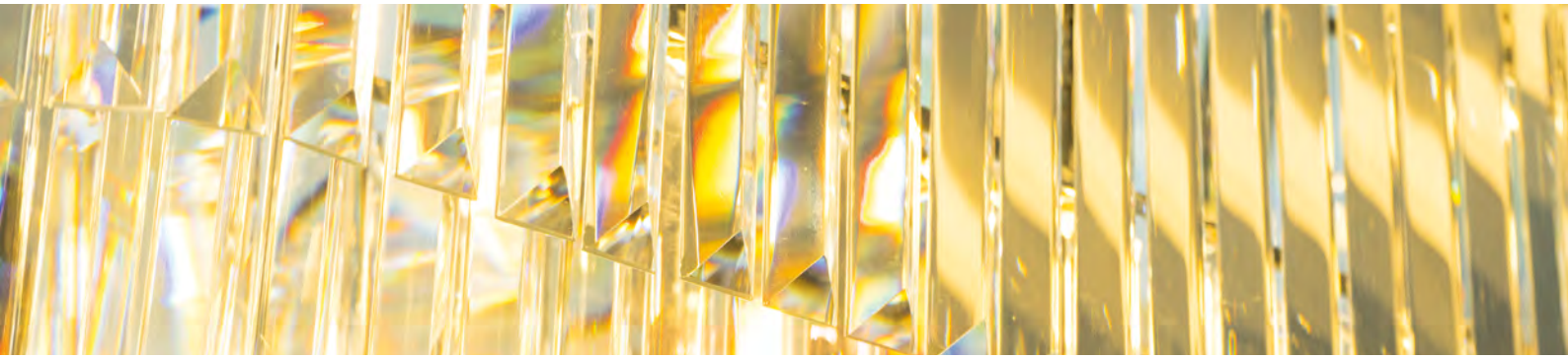
Retroreflection coefficient, R_A cd/(lx·m^2).

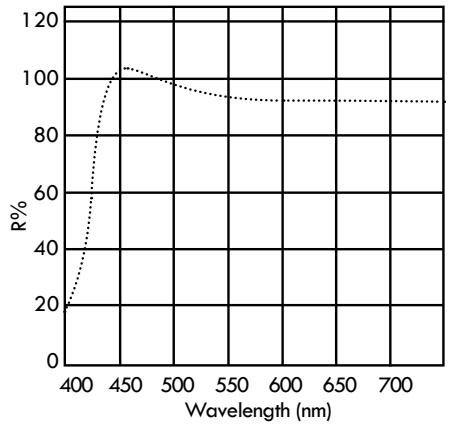
Geometries		R_A	
Observation	Incidence	Sample	UNE*
0.2°	5°	78	42
	30°	51	18
	40°	32	6
0.33°	5°	67	30
	30°	45	14.4
	40°	29	5.4
2°	5°	3.7	3
	30°	2.5	1.5
	40°	2.2	0.9

(*) Retroreflection coefficient table, RA cd/(lx.m2), according to the UNE-EN-12899-1 standard, for retroreflective grey colour with Class 1 glass beads.

REFLEC

Our close collaboration with the leading companies in the lighting market has enabled us to develop these high-reflectance coatings. This type of coating enables us to make full use of the light reflected by a single source, thereby ensuring greater performance and the consequent energy savings. All tests were conducted in accordance with standard DIN EN 16268.





DIN 16268	Full Reflectance %
A+	97.0 - 100.0
A	93.0 - 96.9
B	88.0 - 92.9

Photolu-minescent

PHOTOLUMINESCENT

ADAPTA POWDER COATINGS

A product that works in the absence of light with the capacity of photo-luminescence, for all signs that are intended to help with the location of fire prevention elements, escape routes and emergency exits.

Powder coating formulated for application onto white to give greater luminosity.

Results Class A

■ The luminance demanded by UNE-23035-1 at the different time intervals is shown in the white squares.

Sample c/150002-7 >230µ L(mcd/m²)	514	252	76.3	34.3	14.90		0.3
t/(min)	5	10	30	60	120	3,000	4,182
UNE-23035-1		210		29		0.3	

Luminescence and reduction time after salt spray test (96 hours exposure):

L(mcd/m²)	513	251.4	76.1	34.2	14.86		0.3
t/(min)	5	10	30	60	120	3,000	4,166

Based on the starting values one obtains a loss of luminance less than 5% after 96 hours of exposure to salt spray.

AIDO
Optics Colour Imaging Technological Institute
REPORT: Nº: C/150053
Photo-luminescent signs: UNE 23035-1 and DIN 67510-1

Determination of luminescence and the reduction time
Light source: Xenon 180W lamp.
Exposure time of the sample to the light source: 5 minutes.

Luminescence and reduction time after salt spray test (96 hours exposure), no loss of photo-luminescence properties observed.
The sample C/150002-7 was exposed to salt spray for 96 hours. Subsequently, the luminescence was determined under the following conditions:
- Light source: Xenon 180W lamp.
- Photometer.
- Environmental conditions:
    - Temperature during the test: 23.8ºC.
    - Relative humidity during the test 43.6%.

Results Class B

■ The luminance demanded by UNE-23035-1 at the different time intervals is shown in the white squares.

Sample c/150032-1 >120µ							
L(mcd/m²)	110.8	55.7	17.70	8.10	3.70		0.3
t/(min)	5	10	30	60	120	800	1,299
UNE-23035-1		40		5.6		0.3	

Luminescence and reduction time after salt spray test (96 hours exposure):
Based on the starting values one obtains a loss of luminance less than 5% after 96 hours of exposure to salt spray.

Thermochromic
Photochromic
Fluorescent

THERMOCHROMIC

ADAPTA POWDER COATINGS

The thermo-chromic coatings are characterised by their ability to change colour on being exposed to differing temperatures. The temperature interval covered fluctuates between -15°C and 70°C, between which the coating can be designed to capture thermal variations of 5°C.

These functional double coat paints are expressly aimed at being used as a preventative visual warning for safety systems against fires, thermal contacts, refrigeration control, drink service temperatures, etc.

PHOTOCHROMIC

The UV Sensitive photochromic products have the main feature of changing colour when exposed to ultraviolet light or black light.

FLUORESCENT

Fluorescent or neon effect coatings have been developed for one or two coats, according to the required luminosity.

Neon Collection

NEON COLLECTION

ADAPTA POWDER COATINGS

The NEONCollection® is geared towards industrial design, bringing together 38 chromatic proposals in which fluorescent finishes prevail, though some innovations are also incorporated such as blue photoluminescent, fluorescent-photoluminescent, Serpentia finishes, Leaf finishes and wrinkled finishes with BackUp technology. All these products are presented in 4 ranges which are: Glossy Neon, Neon Finishes, Luminescent Neon and Gemstones.

All the metallic finishes contained have been developed deploying ADAPTA BONDING SYSTEM® technology which facilitates optimum application.

Patina Collection

PATINA COLLECTION

ADAPTA POWDER COATINGS

The finishes proposed in this Patina Collection meet the decorative requirements intended to imitate natural metal oxidation.

The Plain Oxide Patina ranges bring together finishes like Corten steel and several oxidised or aged copper options. Crystal Patina brings together wrinkled finishes. These collections have a very regular chromatic effect meaning that in some cases they may denote a lack of realism or a certain artificiality. The innovative drive by Adapta to get around these objections both by architects and industrial designers have led us to study and develop the Tile Patina, Oxide Patina I, Oxide Patina II and Soft Patina ranges.

These ranges have metal and terracotta oxidation imitations with uneven finishes which are pleasant to the touch, lending them a dual dimension of realism and an advanced look, whisking us away to hidden away paradises.

Patina II collection features new finishes wet effect (WET EFFECT) and galvanized flower effect (SPANGLE EFFECT).

Heat Resistant

HEAT RESISTANT

The heat resistant coating is advised for the coating of pieces that have to withstand high temperatures such as exhausts, barbecues, fireplaces and ovens.

Innovation

Products made with silicone resin, especially designed to resist high temperatures. These products always maintain good features whenever the stated conditions of use are followed, especially those regarding the thickness of the film.

There are products developed to keep their colour stable at certain temperatures, both in prolonged exposures and short periods of time. Heat resistance tests conducted in the laboratory with electric muffle furnace.

Serie S3: Resistance 3 hours at a maximum temperature of 300°C.
Resistance 48 hours at a maximum temperature of 240°C.

Steel plate.
Application between 80 - 100 µ.
Drying for 15 min. at 200°C.
Indoor use.
Black and metal silver.

Serie S5: Resistance 1 hour at a maximum temperature of 500ºC.
Degreased cold-rolled steel plate.
Application between 35 - 45 µ.
Drying for 20 min. at 200ºC.
Outdoor resistance.
Black and metal silver.

Serie K: Thermal resistance and colour strength for 300 hours at 180ºC.

Steel plate.
Application between 80 - 100 µ.
Drying for 15 min. at 190ºC.
Outdoor resistance.
Available in any colour.

Low Bake

LOW BAKE

ADAPTA POWDER COATINGS

The LOW BAKE coatings have been developed for the coating of substrata that are sensitive to temperature such as a fibre or MDF board and plastics, using traditional systems of low temperature curing.

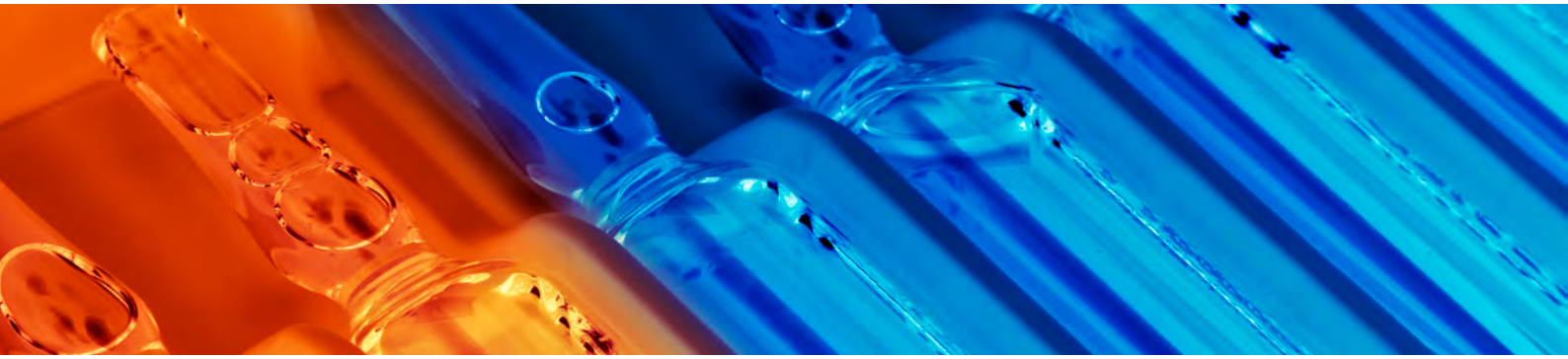
CONDUCTIVE SOLUTION is the first aqueous conductive solution to improve the application onto non-conductive substrates such as wood, plastic, MDF, glass, etc.

Uniform application to the surface to be painted by immersion or aspersion, to dry the humidity in the air or in a drying oven, ensuring the absence of humidity from the surface to be painted prior to the application.

GENERAL ASPECT:	TRANSPARENT LIQUID
VISCOSITY:	9” at 23°C (FORD CUP 4)
RESISTANCE:	0.01 microsiemens
EVAPORATION:	100°C

IR/UV

Coatings whose formulation incorporates photoinitiators for curing with infrared and ultraviolet lamps.



ULTRA-THIN

Coatings with mean applications of between 25 and 40 micras depending on the colour which allow very good finishes and major consumption reductions. The failure to accumulate material on the edges facilitates assembly in parts which need to be assembled.

Primer

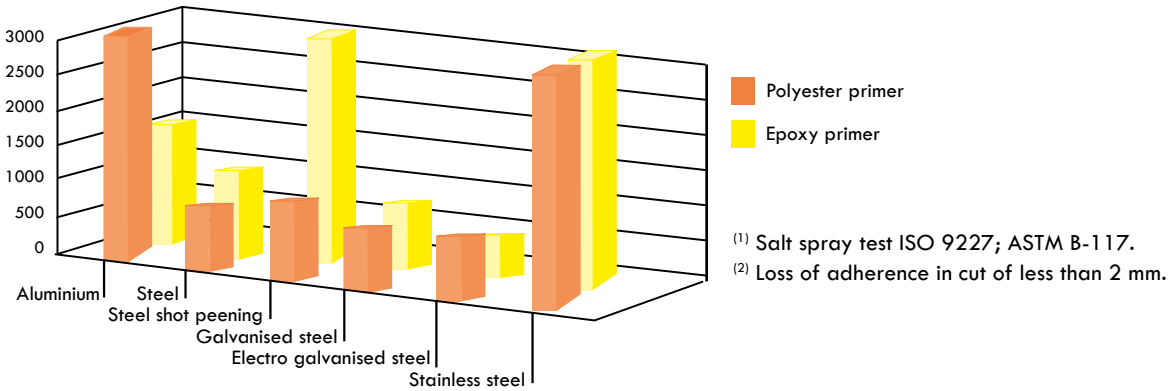
PRIMER

ADAPTA POWDER COATINGS

Powder coatings prepared for use as anti-corrosive primer for the protection of metals, which in turn give resistance to chemical agents. The primers are especially designed to cope with corrosive environments and extreme conditions. They have excellent adherence onto the substrate to protect and allow, in the event of it being necessary, optimum adherence of the second protective coating.
The anti-corrosive action of the primers will depend on the treatment and the optimum preparation of the surface of the substrate to be protected, having to be clean, dry and free of rust.

Trial

These trials have been carried out on the substrates described after degreasing with solvent and without any type of pre-treatment. In the case of steel, an amorphous phosphate or micro-crystalline phosphate can increase the hours of resistance to the saline mist, depending on the material quality, the process and the type of phosphate and the operating conditions of the plant. We advise the checking of the results for a specific application due to the influence of variables in the process.



(1) Salt spray test ISO 9227; ASTM B-117.
(2) Loss of adherence in cut of less than 2 mm.

Corrosivity category	Durability intervals	Kesternich Chemical Resistance (hours)	Condensation in water (hours)	Neutral salt spray (hours)
C2	Low Medium High		48 48 120	- - -
C3	Low Medium High		48 120 240	120 240 480
C4	Low Medium High		120 240 480	240 480 720
C5-I	Low Medium High	240 480 720	240 480 720	480 720 1,440
C5-M	Low Medium High		240 480 720	480 720 1,440

DURABILITY	TIME
LOW (L)	2 to 5 years
MEDIUM (M)	5 to 15 years
HIGH (H)	Over 15 years

The UNE-EN-ISO 12944 includes the technical knowledge on the protection needs of steel structures. Within protection systems, in the case of paint systems, for proper selection various atmospheric environments are established.

Once the environment has been classified, the durability must be decided. Durability is not a synonym for 'warranty period', it is a technical consideration that can be compared to 'foreseen useful life' and a suitable maintenance programme should always be established.

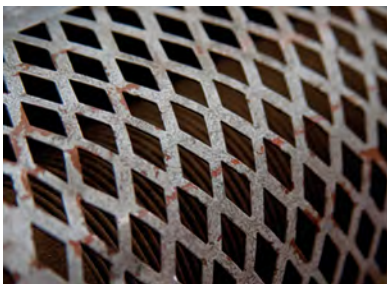
RUSTPROOF®

Rustproof ®

Adapta has developed a protection system against corrosion for steel and galvanised structures in accordance with the ISO 12944-2 Standard for type C5-1 and C5-M corrosive environments. It is a twin-coat powder system, a first coat with epoxidic primer and a final top coat with Qualicoat Class 1 or Superdurable Class 2 polyester. The treatment of the substrate is based on conversion technology without phosphates. Likewise, this classification has been tested for type of high durability (more than 15 years), in accordance with ISO 12944- which establishes the trials to be carried out and their duration in line with the corrosiveness category.

The Adapta Rustproof system has been tested and approved in accordance with ISO 20340 and NORSOK M-501 for maritime structures, and is designed for use in buildings in coastal areas or where maximum protection against corrosion is required.

This primer is designed for parts with corners and sharp edges, which demand a high degree of protection due to their intrinsic design. Particularly recommended for perforated and expanded sheet metal. The use of this product outdoors requires a second layer of protection.



CC PRIMER – CORNER COVERAGE

This primer is designed for pieces with angles and sharp edges where a high protection of these pieces is demanded because of the intrinsic design of the piece. Especially recommended for drilled sheet and extended metal mesh. Its use outside requires a second protective coat.

TECNALIA

ISO 20340 - NORSOK M 501

Report Nº 058403-2 - Aluminium and 058403-3 - Hot-Galvanized Steel

Corrosion tests in accordance with ISO 20340 – NORDSOK M-501

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
UV / Condensation ISO 16474-3			Salt Spray ISO 9227			-20ºC
						

25 cycles	1800 hours UVA 340
	1800 hours Salt Spray
	600 hours -20ºC

IKS

Institut für korrosionsschutz Dresden GMBH

REPORT Nº: PB300/255/10

Determination of the suitability of the powder coating painting system for steel in accordance with the DIN 55633 Standard, in a C5-I corrosive environment for high durability.

Determination of the Adapta anticorrosive protection system for steel and galvanized steel in accordance with DIN 55633 Standard for ISO 12944-6 certification.

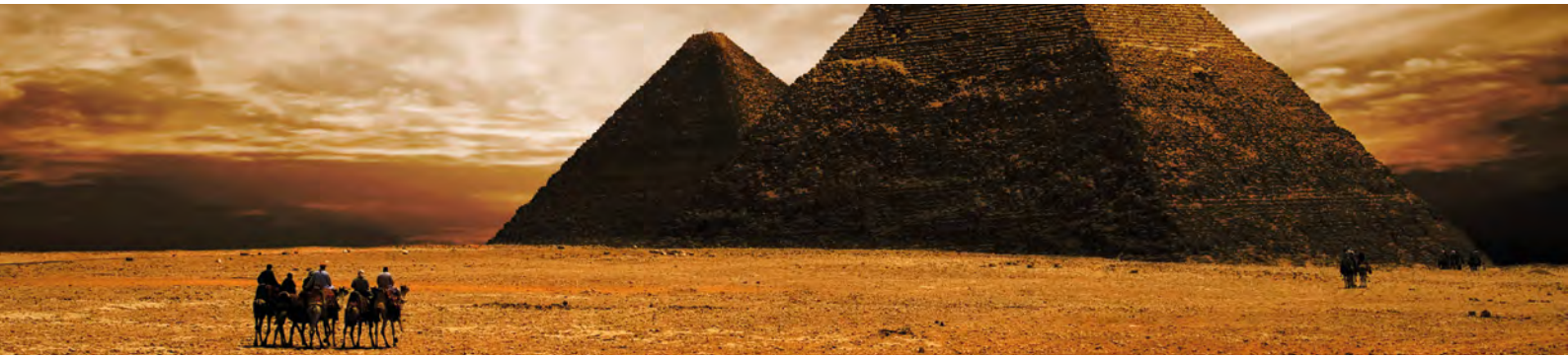
Corrosion Category	Environment	1st Coat product	ISO 2808 Thickness	Baking of 1st Coat	2nd Coat product	ISO 2808 Thickness	Baking of 2nd Coat	Total µ	Protection System Coats
C1 - High	Rural areas, low pollution level. Buildings with heating / neutral atmosphere.	INTERIOR series E & H EXTERIOR series R & D	80-100µ	180-190ºC				80-100µ	1
C2 - High			80-100µ	190-200ºC				80-100µ	1
C3 - High	Urban & industrial atmospheres. Moderate levels of sulphur dioxide. Production area with high humidity levels	"R" primer	80-100µ	180-190ºC				80-100µ	1
		Epoxy primer	60-70µ	180-190ºC	C, R, D	60-90µ		120-160µ	2
		Epoxy primer	60-70µ	180-190ºC	C, R, D	60-90µ		120-160µ	2
C4 - High	Industrial and coastal areas. Chemical processing plants	ES-7105 RB-7708	60-90µ	180-190ºC	Qualicoat Class 1 & Class 2	70-90µ	180-190ºC	130-180µ	2
C5I - High	Industrial areas with high humidity levels and aggressive atmospheres	ES-7105 RB-7708	60-90µ	180-190ºC	Qualicoat Class 1 & Class 2	70-90µ	180-190ºC	130-180µ	2
C5M - High	Nautical areas, high seas, estuaries, coastal areas with high salinity levels	ES-7105 RB-7708	60-90µ	180-190ºC	Qualicoat Class 1 & Class 2	70-90µ	180-190ºC	130-180µ	2

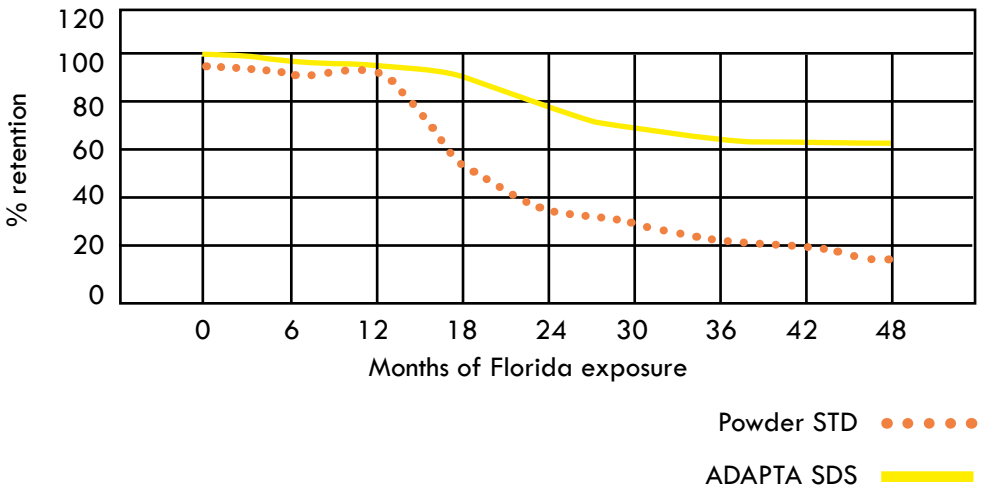
All the systems included in the above table have been designed to exceed the most demanding specifications of the ISO 12944 Standard in so far as refers to high durability, providing maximum resistance to corrosion.

1. The gloss and colour retention capacity when exposed to sunlight may be improved considerably by using an ADAPTA SDS®, Qualicoat Class 2 (P-0778) system as the second coat of the ADAPTA RUSTPROOF® protection system.
2. Polyester powder priming without TGIC (suitable for painting aluminium) that can act as final coat or part of a two-coat protection system.
3. Epoxidic primer specially designed to protect sharp edges and angles C.C. (Corner Coverage).
4. ADAPTA RUSTPROOF® System powder coating protection in accordance with the ISO 12944-6 requirements, category C5-I, High durability. (IKS Institut für korrosionsschutz Dresden GMBH, Report nº: PB300/255/10).

ADAPTA SDS®

The SDS® - Super Durable System - series are especially designed for the coating of aluminium profiles used in architecture and for other substrates where maximum external resistance is required, with special attention being paid to the retention of shine and colour. The Adapta SDS® coatings are approved with the Qualicoat Class 2 licence and GSB MASTER. They can be supplied in a wide range of solid or metallised colours.





Natural ageing	ISO 2810	Exposure in Florida 5° angle
Chequered adherence	ISO 2409	OK, no detachment
Impact Resistance	ISO 6272	OK, no detachment
Pencil hardness	ISO 15184	2H
Buchholz hardness	ISO 2815	OK, >80
Stone chip resistance	ISO 20567	OK
Abrasion resistance Taber	1,000 cycles	OK, <100 milligram loss

Multicolor Effects Alchemy

MULTICOLOR EFFECTS

ADAPTA POWDER COATINGS

Coatings also known as bi-colours or interference colours where the main feature is the extensive display of changing colours that display the colours in line with the direction of light and the viewing angle. The interaction between absorption and reflection of light produces fascinating optical effects that can also be seen in weak light and intensifies with spherical objects or with curved shapes. The continuous chromatic changes of the coating give over the feeling of movement even mixing up the variety of colours and effects. The Adapta Bonding System® technology allows and ensures a homogeneous optical effect, essential for use in emblematic projects or where high standards of quality are required.

Advantages

- Possibility of short runs (in comparison to other systems of protection).
- Maintenance of colour-appearance in all of the components (Adapta Bonding System® technology).
- High resistance to handling ("finger print resistant" property).
- High surface hardness.

ALCHEMY

The Adapta ALCHEMY collections mean to be a reference in the functional sector as a high performance alternative for chemical finishes such as stainless steel, stainless anodising, natural aluminium, nickel, selenium, titanium, etc.
These types of organic coatings have excellent resistance to bad weather and maximum solidity to light as well as optimal performance against chemical agents.

Results

Chemical resistance and durability	Standard	Trial	Result
Resistance to acetic saline mist	ISO 9227:1990	1,000 hours	√
Resistance to constant atmospheric humidity	ISO 6270	1,000 hours	√
Accelerated ageing trial	ISO 11341:1997	1,000 hours	√
Mortar resistance	ASTM D 3260:1996	24 hours	√

BONDING SYSTEM®

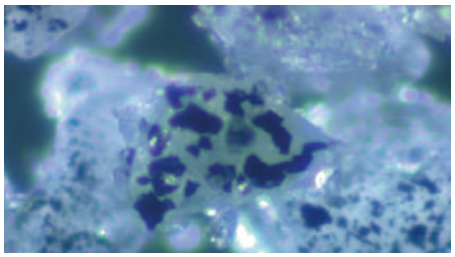
The large quantity of shades that the metallic pigments show and their wide field of application have meant significant innovations in metallised powder coating aspects. Adapta Color stands apart with its on-going presence in the special product market with the launch of new collections and the rapid adoption of most of the recent innovations both on a product level and equally that of its formulations. The new Adapta Bonding System® technology will bring greater value to its metallised products, working with its customers towards the success of their projects.

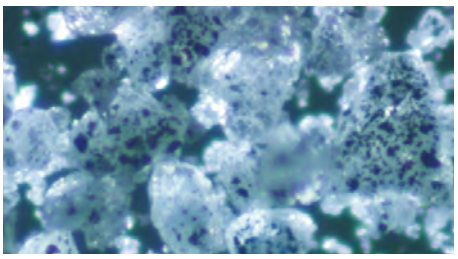
Innovation

The Adapta Bonding System® technology was born as the answer to the current market trend, aimed at improved beauty by means of coatings with a metallic or pearl appearance.

The bringing together of the three key aspects, these being colour, application and reliability allows the Adapta Bonding System® to consolidate the process as the most revolutionary in the powder coating market.

■ Microscope image capture at 1,280 times of an Adapta Bonding System® coating.





Results

Technology	Recirculation 1	Recirculation 2	Recirculation 3
Normal Dry Blend Mix	ΔL= -1.97	ΔL= -3.17	ΔL= -3.78
ADAPTA Bonding System	ΔL= -0.23	ΔL= -0.39	ΔL= -0.97

■ Trial carried out on a metallised coating (9006).

Advantages

- Consistency of product appearance (effect-colour).
- It enables the colour shades to be expanded with better pigmentations.
- Spraying without a build up on the spray gun electrodes.
- Elimination of surface defects on the pieces.
- Improved productivity increasing the recovery of the coating, retaining colour consistency.
- Improvement of the triboelectric application.
- It retains the effect-colour with differing application parameters.

Quick Coats®
HVM
Back Up®

QUICK COATS® & HVM

ADAPTA POWDER COATINGS

Transparent hammered or textured coatings give it this finish when applied on any colour. The advantages of QUICK COATS® are the possibility of fast customer service together with the drastic reduction of stocks for low turnover products.

HVM (High Vacuum Metallisation) coatings have been designed to provide an excellent surface finish that facilitates subsequent high vacuum metallisation operations.

Personalised approvals

Adapta Color designs products to customers' requirements which comply with special standards or specifications.

- Plastic materials and objects intended to come into contact with food products. Determination of the Overall Migration in acid, alcohol and oily simulation in accordance with the European Directive.
- Toy Safety Migration of certain elements.
- Resistance of the coatings to the domestically used chemical agents.

BACK UP®

This is a double coat system developed to prevent changes of shade from differences in the thickness in coloured lacquers.
There are no edges due to an excess of the coat on the edges or water marks on flat surfaces. This coating is made up of a transparent lacquer applied onto a metallised base; the system obtains the required colour once it has been cured.

ADAPTA
POWDER COATINGS

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