DEKRO PAINTS
CHUGOKU
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MANUFACTURERS/LICENSEE
CMP
CHUGOKU MARINE PAINTS, LTD.

Dekster

INDUSTRIAL COATINGS

GUIDELINES FOR INDUSTRIAL COATING APPLICATIONS



DEKRO PAINTS

Dekro brings Paint to life

Introduction

Dekro Paints provides a variety of heavy duty paints and primers for structural steel, concrete surfaces and mast towers. These heavy duty paints are provided by Dekro's own Marinecote range and through the company's relationship with Chugoku Marine Paints. Chugoku Marine Paints is one of the largest paint manufacturers in Asia and Dekro Paints manufacture coatings under licence in strict accordance to the ISO 9001 quality accreditation from the SABS .

The ISO 9001 certificate represents a significant recognition on a national and international scale. It forms part of the SABS ISO 9000 series, which is a code of practice for quality control systems developed and published by the International Standards Organisation based in Switzerland.





Corrosive Categories

Consult the table below to select the most appropriate classification for your project.

Corrosivity Categories	Corrosivity Categories and Risk	Exterior (Typical Environments)	Interior (Typical Environments)
C1	Very Low		Heated buildings with clean atmospheres, e.g. offices, shops, schools, hotels
C2	Low	Atmospheres with low level of pollution, mostly rural areas	Unheated buildings where condensation can occur, e.g. depots, sports halls
C3	Medium	Urban and industrial atmospheres, moderate sulphur dioxide pollution	Coastal areas with low salinity Production rooms with high humidity and some air pollution e.g. food-processing plants, breweries, dairies
C4	High	High Industrial areas and coastal areas with moderate salinity	Chemical plants, swimming pools, coastal ship and boatyards
C5	Very High	Industrial areas with high humidity and aggressive atmosphere and coastal areas with high salinity	Buildings or areas with almost permanent condensation and with high pollution

Choose the durability of the coating system below. Consider three time spans to categorise durability.. The higher the durability, the longer the time to first major maintenance. Note the durability range is not a “guarantee time”.

Low Durability : Up to 7 years

Medium Durability : 7 to 10 years

High Durability : Up to 15 years



C2 Paint systems for low-alloy carbon steel for corrosivity category C2

Surface preparation: Sa 2½

System	Priming Coats				Subsequent Coats	Paint System		Expected Durability			Dekro's Recommended System			
	Binder*	Type of primer	No. of coats	NDFT (µ)	Binder*	No. of Products	NDFT (µ)	Low	Med	High	Generic Name	Coating System	NDFT (µ)	No. of Coats
A	AK	Misc	1	50	AK	2	110				Synthetic Resin	LZI Primer HB	50	3
											Alkyd Paint	Evamarine	35	
B	AK	Misc	1	40	AK	3	110				Etch Primer	Vasbyt	20	4
											Synthetic Resin	LZI Primer HB	50	
											Alkyd Paint	Evamarine	30	
C	N/A	Misc	0	0	Acrylic	1	120				Direct to Metal	HydroC5	60	2
											Direct to Metal	HydroC5	60	
D	EP	Misc	1	150	EP,PUR	2	230				Epoxy Primer	Umeguard SX	150	3
											Polyurethane	Unymarine	40	

* [Abbreviation] AK: Alkyd / EP: Epoxy / ESI: Ethyl Silicate / PUR: Polyurethane / Zn(R): Zinc Rich Primer
Misc: Primers with miscellaneous types of anticorrosive pigments / NDFT: Nominal Dry Film Thickness

C3 Paint systems for low-alloy carbon steel for corrosivity category C3

Surface preparation: Sa 2½

System	Priming Coats				Subsequent Coats	Paint System		Expected Durability			Dekro's Recommended System			
	Binder*	Type of primer	No. of coats	NDFT (µ)	Binder*	No. of Products	NDFT (µ)	Low	Med	High	Generic Name	Coating System	NDFT (µ)	No. of Coats
A	AK	Misc	1	60	AK	2	140				Acrylic Resin	Acri 700 Primer	60	3
											Acrylic Resin	Acri 700 Finish	40	
											Acrylic Resin	Acri 700 Finish	40	
B	N/A	Misc	0	0	Acrylic	1	120				Direct to Metal	HydroC5	120	2
											Direct to Metal	HydroC5	120	
C	EP	Misc	1	150	EP,PUR	2	230				Epoxy Primer	Umeguard SX	150	3
											Polyurethane	Unymarine	40	
D	EP	ZN®	1	75	EP,PUR	3	305				Epoxy Primer	Epicon Zinc HB -2	75	4
											Epoxy Primer	Umeguard SX	150	
											Polyurethane	Unymarine	40	

* [Abbreviation] AK: Alkyd / EP: Epoxy / ESI: Ethyl Silicate / PUR: Polyurethane / Zn(R): Zinc Rich Primer
Misc: Primers with miscellaneous types of anticorrosive pigments / NDFT: Nominal Dry Film Thickness

C4 Paint systems for low-alloy carbon steel for corrosivity category C4

Surface preparation: Sa 2½

System	Priming Coats				Subsequent Coats	Paint System		Expected Durability			Dekro's Recommended System			
	Binder*	Type of primer	No. of coats	NDFT (µ)	Binder*	No. of Products	NDFT (µ)	Low	Med	High	Generic Name	Coating System	NDFT (µ)	No. of Coats
A	EP	Misc	1	150	EP,PUR	2	120				Epoxy Primer	Umeguard SX	150	3
											Polyurethane	Unymarine	40	
B	N/A	Misc	0	0	Acrylic	1	120				Direct to Metal	HydroC5	200	2
											Direct to Metal	HydroC5	200	
C	EP	Zn®	1	75	EP,PUR	2	160				Epoxy Zinc Primer	Epicon Zinc HB -2	25	3
											Epoxy Primer	Umeguard SX	150	
											Polyurethane	Unymarine	40	
D	EP	Zn®	1	75	EP,PUR	3	305				Epoxy Zinc Primer	Epicon Zinc HB -2	75	4
											Epoxy Primer	Umeguard SX	150	
											Polyurethane	Unymarine	40	
											Polyurethane	Unymarine	40	
E	EP	EP	1	150	EP,PUR	3	380				Epoxy Primer	Umeguard SX	150	4
											Epoxy Primer	Tuffcoat	150	
											Polyurethane	Unymarine	40	
											Polyurethane	Unymarine	40	

C5 Paint systems for low-alloy carbon steel for corrosivity category C5

Surface preparation: Sa 2½

System	Priming Coats				Subsequent Coats	Paint System		Expected Durability			Dekro's Recommended System			
	Binder*	Type of primer	No. of coats	NDFT (µ)	Binder*	No. of Products	NDFT (µ)	Low	Med	High	Generic Name	Coating System	NDFT (µ)	No. of Coats
A	EP	Misc	1	150	EP,PUR	2	190				Epoxy Primer Polyurethane	Umeguard SX Unymarine	150 40	2
B	N/A	Misc	0	0	Acrylic	1	120				Direct to Metal Direct to Metal	HydroC5 HydroC5	120 120	2
C	EP	Zn®	1	75	EP,PUR	2	265				Epoxy Zinc Primer Epoxy Primer Polyurethane	Epicon Zinc HB -2 Umeguard SX Unymarine	75 150 40	3
D	EP	Zn®	1	75	EP,PUR	3	305				Epoxy Zinc Primer Epoxy Primer Polyurethane Polyurethane	Epicon Zinc HB -2 Umeguard SX Unymarine Unymarine	75 150 40 40	4
E	EP	EP	1	150	EP,PUR	3	260				Epoxy Primer Epoxy Primer Polyurethane Polyurethane	Umeguard SX Tuffcoat Unymarine Unymarine	150 150 40 40	4

Sa 1 – Light blast cleaning.
Sa 2 – Thorough blast cleaning.
Sa 2½ – Very thorough blast cleaning.
Sa 3 – Blast cleaning to visually clean steel.

When viewed without magnification, the surface shall. be free from visible oil, grease and dirt and from mill scale, rust, paint coatings and foreign matter.

Dekster 711 Salt Solve Pro completely removes all salts, resulting in no conductivity. It also removes abrasives and debris from the surface's profile providing a better surface area to bond with coating. Since Dekster 711 Salt Solve Pro leaves a clean, rust-free surface for up to 72 hours, large areas of structures can be blasted and cleaned completely before coating application, instead of having to be coated immediately after blasting every day.

Dekster 711 Salt Solve Pro can be worked into any blasting process to achieve a totally clean surface, with zero flash-rust and zero residue left behind. Dekster 711 Salt Solve Pro is a clear, simple additive with visible results, eliminating both natural and artificial contaminants. At sea or on land, Dekster 711 Salt Solve Pro is safe to use and compatible with a wide variety of surfaces, including steel, concrete, fiberglass, aluminum, composites, and more!





Primers

Primer coatings for industrial applications

Bannoh 1500- RZ

Modified Polyamide Epoxy

BANNOH 1500 RZ, is a two-component, modified epoxy/polyamide, high-build anti-corrosive primer and binder coat. Manufactured by Chugoku Marine Paints (CMP), it is primarily used in the maritime industry as a protective coating for ships' hulls, decks, and ballast water tanks.

Tuffcoat ST85

Surface Tolerant Epoxy

Tuffcoat ST85 is a surface tolerant, glass reinforced epoxy coating designed to protect steel and concrete with a minimum amount of surface preparation. Excellent abrasion, adhesion and corrosion resistance. Resistance to salt water, solvents and chemicals. Suitable for immersion in water. (not potable water) High solids coating.

Tuffcoat ST100

Surface Tolerant Epoxy

Tuffcoat ST100 is a glassflake filled solvent free surface tolerant epoxy coating, designed to protect concrete with a minimum amount of surface preparation. Suitable for concrete and cement surfaces. Excellent abrasion, adhesion and corrosion resistance. Resistance to salt water, solvents and chemicals. Suitable for immersion in water. (not potable water) High solids coating.



Umeguard SX

Surface Tolerant Epoxy

Umeguard SX , is a surface tolerant primer which is based on pure epoxy resin and specialized pigmentation. It possesses excellent physical properties such as toughness, abrasion resistance and adhesion. It is also used as a tie coat and has excellent adhesion with subsequent twin pack coatings. It is suitable for internal and external application to new .

Epicon Zinc Rich Primer

HB-2

Zinc Rich Epoxy

EPICON ZINC HB-2 is a two component primer, based on a combination of metallic zinc, epoxy resin and hardener. Suitable primer for the protection of blast cleaned steel plates used for under water areas and touch-up primer for zinc silicate shop primer.

Suitable Available Products

Dekster 504 - Surface Tolerant Epoxy Mastic
Dekster 501 - Epoxy Zinc Phosphate Primer



Primers

Primer and direct to metal coatings for industrial applications

Acri 700 Primer

Acrylic Resin Primer

ACRI 700 PRIMER is an effective anti-rust primer based on acrylic resin and drying by evaporation of the solvents. It can be applied directly on to bare steel or existing paint film such as Acrylic, chlorinated rubber and epoxy. It has also good workability and it is possible to obtain thick coat especially by spray application.

LZI Primer HB

Alkyd Resin Primer

LZI Primer is an alkyd resin zinc phosphate primer that dries quickly for effective rust-prevention and excellent resistance to impact and bending. It is used for a rust-preventing primer for inside of superstructure and other steel structures.



Hydro C5

Direct to Metal Coating

Hydro C5 is a unique, self-crosslinking acrylic dispersion anti-corrosive coating for metal substrates.

Metallic Zinc Rich Primer

Zinc Primer

Metallic Zinc Rich Primer is a general purpose zinc primer for the temporary protection of suitably prepared steel structures

Vasbyt

Direct to Metal Primer

Vasbyt is a Fast Drying Acid Hardening Metal Etch Primer. It has very good over-coating properties. It also has excellent adhesion to ferrous metal, galvanised iron and various types of plastic (acting as a key-coat).

Flexicoat

Direct to Metal Coating

Acrylic based coating. It has a satin-matt finish. It is a high build product. It is fast drying. It can be used direct to metal. To be used as topcoat in atmospheric environments. It can be applied at sub-zero surface temperatures.

For general use on iron and steel, primers incorporating rust-inhibitive pigments must be used, for example, zinc phosphate, metallic zinc, etc., in various binders such as the conventional linseed oil, or alkyd resins, or epoxy resins, etc. Too often cheap and inferior primers are used containing less than the minimum quantities of anti-corrosive pigments to be effective. Such paints do more harm than good as they must first be removed before a systematic and effective painting operation can be carried out.



Protective coatings

Protective polyurethane coatings for industrial applications

Adthane Enamel

Aliphatic Polyurethane top coats

Adthane Enamel, because of its outstanding properties, can be applied to a wide variety of substrata – concrete, screeds, plaster, polyester, wood, metals and plastics, after correct priming, where outstanding performance is required. It is recommended for the coating of Concrete Surfaces that are suitably primed. It is also resistant to detergents, chemicals, solvents, lubricants, organic fuel oil and high octane fuels.

Unymarine

Polyurethane top coats

Unymarine is based on a polyurethane resin and has excellent gloss retention, durability and chemical resistance that is suitable for protection of concrete. It is also resistant to detergents, chemicals, solvents, lubricants, organic fuel oil and high octane fuels.

Suitable Available Products

Dekster 112 - Acrithane

Unlike epoxy, polyurethane is U.V. stable (aliphatic polyurethanes) which means it won't yellow when exposed to sunlight. Flexibility – Polyurethane resin flooring systems usually offer good flexibility, potentially accommodating minor movement whereas epoxy systems are more brittle.





Solvent entrapmnt or pinholing is a common coating defect that occurs when solvent from an applied layer of coating evaporates and gets trapped under a top layer of paint that has evaporated faster and dried. The vapours that are trying to escape form small convex blisters or pinholes in the surface, creating a weak point in the coating film.







Epicon T500

Food Grade Epoxy

Epicon T-500 is a high build type epoxy coating, has excellent physical properties such as adhesion, toughness, abrasion resistance, etc. as well as chemical resistance to salt-water, fresh water, petroleum products, crude oil, alkalis and weak acids. It is suitable as a protective coating for tank interiors. Airless spray can build a dry film thickness of 75 – 125 microns per coat. It is suitable as a protective coating for concrete floors at factories where liquid and solid foods are manufactured. Coating can be used for cold storage facilities.

Acri 700

Food Grade Coating

Available in attractive colours and based on alkali resistant pigments and binder, it is a quick and economical solution to rejuvenate old, previously coated, or new floors. Weather and U.V resistant it is ideal for outdoors. It resists hot tyre pick up and being a single component, ready to use it is ideal for floor coating maintenance where food processing is completed.

Epicon T800

Food Grade Epoxy

Epicon T-800 is a high-build type epoxy phenolic coating, which has excellent physical properties such as adhesion, toughness, abrasion resistance, as well as chemical resistance to salt-water, fresh water, hot water, petroleum products, crude oil, alkalis and weak acids. It is suitable as a protective coating for concrete floors at factories where liquid and solid foods are manufactured. Coating can be used for cold storage facilities.



Food grade coatings are mostly used in food and drink processing plants, wholesale warehouses and retail food storage facilities, as the name would suggest. Food grade paints are not only used for specific types of food or drink – they can be used for all types and for a variety of reasons. Dekro Paints stock a wide array of FDA compliant coating systems for a multitude of food processing applications and potable water tanks.



UQD Hammertone

Hammer Finishes

Hammer Finishes are extensively used for switch boxes, domestic sheet metal ware, instrument cases, electrical components, machinery, office machinery and equipment, prefabricated office panelling and many other varied applications.

UQD Zinc Phosphate

Primer Coating

A cost effective zinc phosphate metal primer designed for spray, dipping and brushing application of general steelwork where a tough fast drying primer coat is required.



Hydrolock Primer

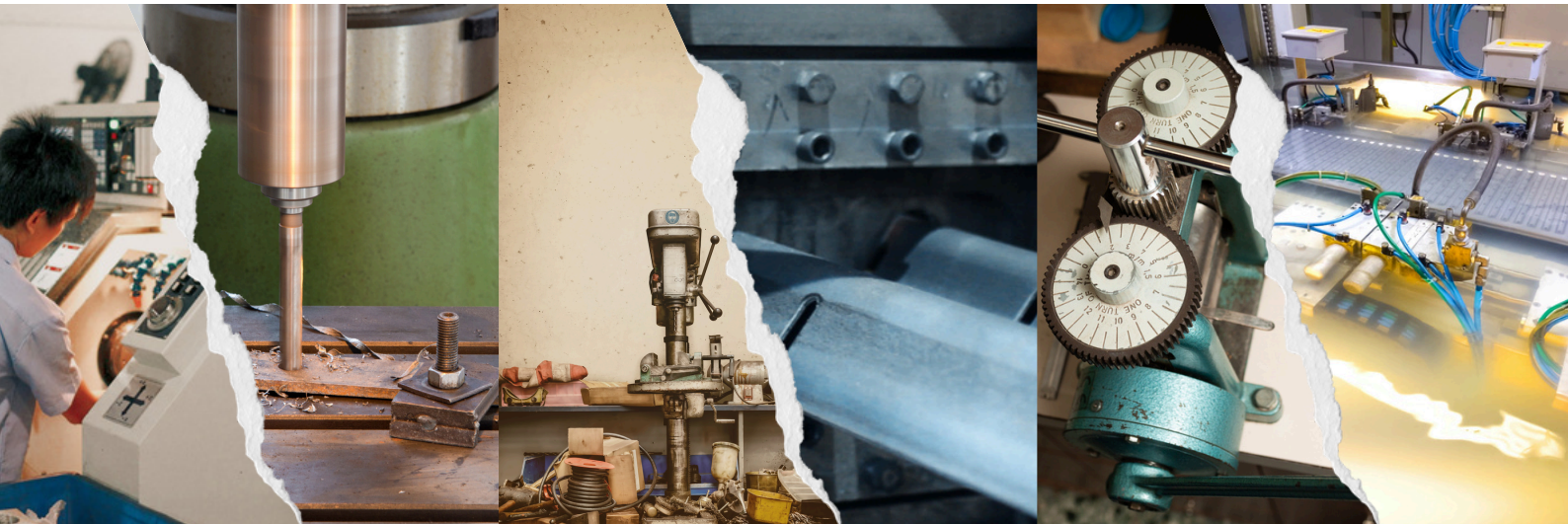
Waterbased Epoxy Primer

Hydrolock Primer is a rapid curing, water based primer consisting of two components; a pre-reacted epoxy resin dispersed in water (Part A), and a waterborne modified polyamine solution (Part B). In its wet mixed state, it is off white and dries to a clear finish. Hydrolock Primer is suitable for use on most sound and eroded building surfaces where both a penetrative and bonding effect is needed. Substrates include concrete (including damp and partially cured cementitious renders, screeds and mortars, bituminous surfaces (e.g. asphalt), roofing felts, insulation foams, wooden protrusions, previously painted surfaces, glass reinforced polyester and waterproofing membranes prior to re-coating. The product's rapid curing properties allow faster contract completion and consequent savings on site/labour costs.

Wash Primer

Acid Etch Primer

A Vinyl Butyral based Primer, which confirms to SABS Standard 723 type Wash Primer. Commonly referred to as Wash Primer. - Main use is over well prepared Galvanised Iron Aluminium, Non-ferrous Metal or PVC. - It's main function is to provide adhesion to the above materials. - Twin Pack Etch Primers have limited anti-corrosive properties, and are not intended for exposure to the elements for any length of time. - Primers such as Zinc Phosphate are normally applied over Etch Primers to reinforce and provide additional anti corrosive properties. - Twin Pack Etch Primers performs well over bonded fiberglass and other similar types of moulded plastic material.



CANAL WALK BRIDGE



CASE STUDY

OBJECTIVES

Coatings are essential for protecting structural steel bridges from corrosion as replacement of corroded steel is costly.

The important factors in the protection of iron and steel by painting are:

·The thoroughness of the preparatory work before painting.

·The type of primer used

·The thickness of the paint system.

As far as preparatory work is concerned, it has been shown that the effective life of a paint coating of perfectly clean steel, free from rust and scales, maybe up to five times longer than that of the same coating applied to imperfectly cleaned steel.

Steelwork must be primed as soon as possible after it has been prepared, as even a few hours of exposure in a damp or contaminated atmosphere will nullify the thoroughness of the preparatory work.

Hence, an extensive coating system was applied to all areas.

100%
SUCCESS RATE



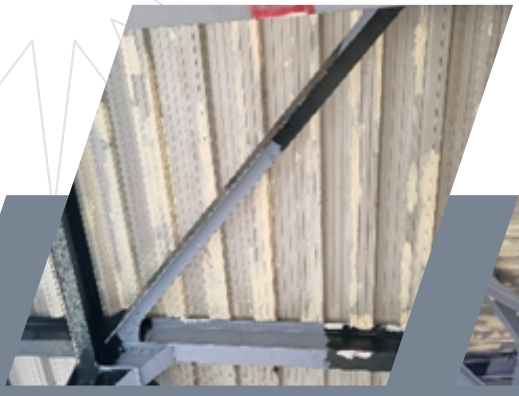
Surface preparation is the most important part in the performance of any paint system. Prior to priming or painting it is essential to ensure that the substrate is sound, to remove any chalkiness, salt contamination and loose and flaking paint by means of hydroblasting to SA 2.5 Swedish Standard, or SIS SA 2.5.







Dekro Paints oversaw the redecoration of the structural steel and metal structure completed in 2024 Site inspections was completed regularly and coating thicknesses measured and logged as per site inspection reports. The following specification was followed:
Remove all loose and friable paint by mechanical means to expose ferrous oxide. Mechanically clean to St.2. preferably using pneumatic descaler where required.
For corrosion prevention and salt removal dilute Holdtight 102 (Dilution ratio of 100:1 is most common for blast and wash water cycles) and apply per high pressure water jetting. Refer to technical data sheet for application parameters
Feather all edges and build up removed corroded mild steel by applying Dekster 205 Fairing Compound in layers not exceeding 20mm (at 25°C) using a spatula mix two parts by volume of base resin (white) with one part activator (red) to a uniform pink colour. (Do not Add Thinners) Apply with a trowel or scraper and smooth with water. Allow to cure overnight (12- 24 hours) before sanding.
Application : Apply first coat of Tuffcoat at 150µ and allow 12 hours drying time (Max 3 days)
Apply second stripecoat of Tuffcoat at 150µ and allow 12 hours drying time (Max 3 days)
Apply two coats of Unymarine at 30 - 50µ and allow 4 hours drying time between coats
A minimum thickness of 360µ for the coating system must be achieved.







Daily dew points were taken using an Elcometer 319 Dewpoint Meter. It obtains accurate climatic parameters required to determine whether the conditions are suitable for painting. It measures relative humidity, air temperature, surface temperature and dewpoint temperatures. Steel temperatures must be a minimum of 3°C above dew point, measured in the vicinity of the substrates.



CRYSTAL TOWERS BRIDGE



CASE STUDY

OBJECTIVES

•As easy as it sounds, painting a walkway bridge should be simple, but there were certain factors that had to be taken into consideration before applying the coatings, namely:

•Surface Contamination

•Accessibility

•Method of substrate cleaning as well as the method of application of the final coatings.

•Weather

•Prior to commencement of the project, we carried out a detailed site inspection to ensure we understood the scope of works required to refurbish the existing coatings and eradicate the existing corrosion on the steel railings.

•Due to the means of application been a factor to consider, the coatings used had to be ones that provide longevity and protection to the various substrates against the weather conditions, UV, and corrosion protection.

•A marine coating system was provided, namely Umeguard SX as the primer coat; Tuffcoat over the welds and Unymarine as the final coating for it's excellent durability and chemical resistance.

100%
SUCCESS RATE



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Standard Industrial Colours

Consult the table below for a selection of our standard industrial colours

CS650 BLACK	CS516 GREY	CS615 GREY	CS614 GREY	CS611 GREY	CS651 WHITE	CS622 YELLOW	CS620 YELLOW	CS619 BUFF	CS618 LIGHT BUFF
CS656 BUFF	CS617 BUFF	CS625 SIGNAL RED	CS623 ORANGE	CS626 ORANGE	CS514 GREEN	CS519 GREEN	CS518 GREEN	CS517 GREEN	CS632 GREEN
CS630 GREEN	CS631 GREEN	CS680 BLUE GREEN	CS676 BLUE	CS643 BLUE	CS649 BLUE	CS640 BLUE	CS679 BLUE	CS511 RED BROWN	CS627 BROWN









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GUIDELINES FOR INDUSTRIAL COATING APPLICATIONS

DEKRO PAINTS

Dekro brings Paint to life