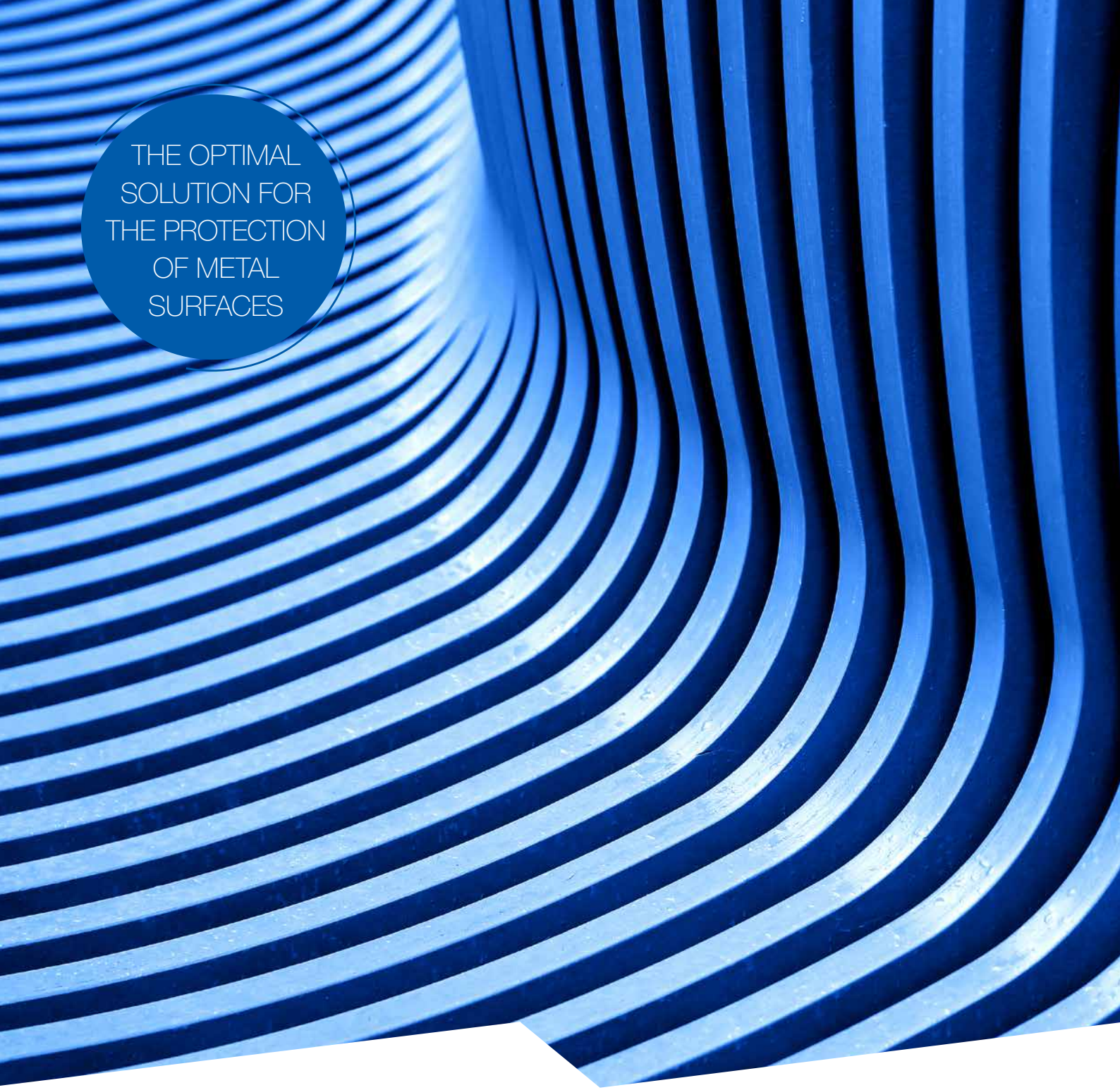


ANTI-CORROSION POWDER PRIMERS

KANSAI HELIOS

KANSAI HELIOS IS A LEADING PRODUCER OF SUSTAINABLE POWDER COATINGS IN THE EUROPEAN MARKET.

THE WORLD OF POWDER COATINGS




DRAWING FROM MORE THAN 35 YEARS OF EXPERIENCE

KANSAI HELIOS Italy has been producing industrial coatings for more than 35 years. Today, the company operates two powder coating production plants in Italy: a thermosetting plant in Riese Pio X (TV) and a thermoplastic plant in Tezze sul Brenta (VI) in northern Italy. As a system supplier in the Italian market, we offer a wide range of perfectly aligned industrial coatings: powder coatings from our local in-house production, liquid coatings, e-coats, as well as adhesives and sealants. In close cooperation with our customers, we drive progress and innovation. As part of KANSAI PAINT, one of the world's leaders in the paints and coatings industry, KANSAI HELIOS represents the European competence center of the group. We focus on high-quality products, customer needs, long-term cooperation, and provide strong technical support.

"DESIGNING EXCELLENCE" – R&D AT THE HIGHEST LEVEL

Our R&D Team is continuously developing and fine-tuning the product portfolio to ensure that it will continue to meet the highest demands of our customers. KANSAI HELIOS Italy is particularly known for its **flexibility and high level of availability.** More than **900 products in 750 different RAL shades** and textures are constantly available at the Italian production sites in Riese Pio X (TV) and Tezze sul Brenta (VI), where approximately **10,000 tons of powder and PVC coatings** are produced every year.

THE MORE ENVIRONMENTALLY-FRIENDLY CHOICE

The absence of harmful chemicals in the formulation of powder coatings makes them an eco-friendly choice. Their application process, which involves electrostatically spraying dry powder onto a surface, eliminates the need for solvents and significantly reduces volatile organic compound (VOC) emissions. This not only enhances workplace safety but also contributes to a cleaner environment. Additionally, powder coatings generate minimal waste as any overspray can be collected and reused, further minimizing material consumption.

Our anticorrosion primers hold the prestigious Qualisteelcoat approval, demonstrating their adherence to rigorous standards for quality, performance, and environmental sustainability.

DEFINITION OF CORROSION

Corrosion is a natural, gradual process that leads to the alteration of a material's original characteristics and physical properties. This transformation is irreversible and stems from an electrochemical phenomenon, wherein the metal interacts with its surrounding environment.

Corrosion is predominantly linked to metallic materials, encompassing metals and their alloys. It can be described as a process of disintegration and recombination with other elements. Under specific environmental conditions, these elements operate at a higher energy level compared to their corresponding minerals, making them susceptible to corrosion.*

*Source: Wikipedia

KANSAI HELIOS OFFERS SPECIAL ANTI-CORROSION PRIMERS THAT ENSURE THE HIGHEST RESISTANCE TO CORROSION-FERROUS METAL OBJECTS.

DETERMINATION OF THE MOST SUITABLE **ANTI-CORROSION CYCLE** FOR METAL ARTICLE

Sort the environments for corrosion class and for the durability of the coating cycle.
(ISO 12944-2 and ISO 12944-3)

CORROSION CLASS	DURABILITY	INTERIOR	EXTERIOR	CONDEN-SATION TEST HOURS (ISO 6270-1)	NSS TEST HOURS (ISO 9227)	CYCLIC AGEING TEST* HOURS (ISO 12944-6 ANNEX B)
C1		Heated buildings with clean atmo-sphere, e.g. offices, shops, schools, hotels.				
C2	Low (>7 years)	Unheated buildings where there can be condensation like deposits, sporting locals.	Environments with low levels of pol-lution, especially rural areas.	48	-	-
	Medium (7-15 years)			48	-	-
	High (15-25 years)			120	-	-
	Very High (>25 years)			240	480	-
C3	Low (>7 years)	Production areas with high humidity and a corresponding level of pollution; for example, food industries, laundries, breweries, dairies.	Urban and indus-trial environments, moderate sulphur dioxide pollution. Coastal areas with low salinity.	48	120	-
	Medium (7-15 years)			120	240	-
	High (15-25 years)			240	480	-
	Very High (>25 years)			480	720	-
C4	Low (>7 years)	Chemical plants, swimming pools, construction sites for coastal boats.	Industrial areas and coastal areas with moderate salinity.	120	240	-
	Medium (7-15 years)			240	480	-
	High (15-25 years)			480	720	-
	Very High (>25 years)			720	1440	1680
C5	Low (>7 years)	Areas with almost permanent condensation and with high pollution.	Coastal areas with high salinity / Industrial areas with high humidity and aggressive atmosphere.	240	480	-
	Medium (7-15 years)			480	720	-
	High (15-25 years)			720	1440	1680
	Very High (>25 years)			-	-	2688
Cx*	High (15-25 years)	Areas with extreme humidity and aggressive atmosphere.	Coastal areas with high salinity / In-dustrial areas with extreme humidity and aggressive atmosphere.	-	-	4200

*Currently not applicable to QUALISTEELCOAT paint systems.

CYCLIC AGEING TEST*

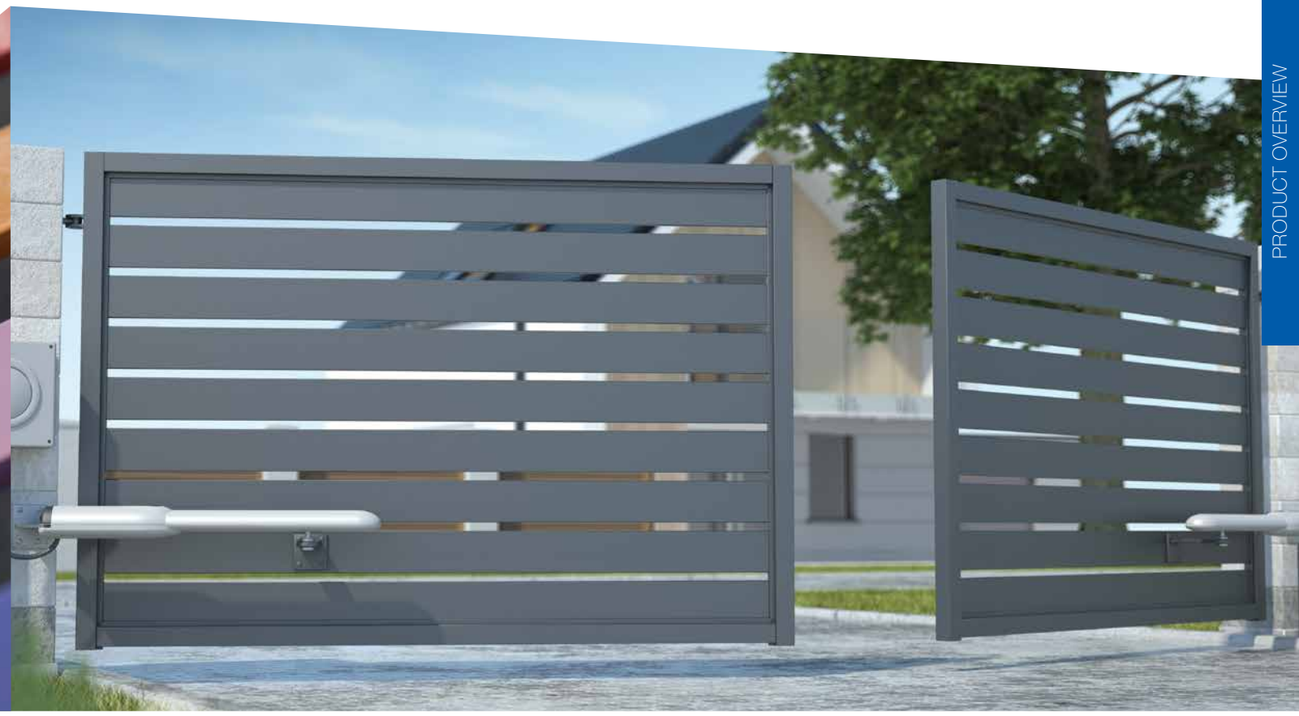
Each cycle takes 7 days (168 h) and includes:
- 3 days of UV and humidistat; alternating every 4 hours
- 3 days of neutral salt spray
- 1 day exposure at -20°C

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
UV/ condensation - ISO 16474-3			Neutral salt spray - ISO 9227			Low-temp. exposure at (-20 ± 2) °C

SURFACE PRE-TREATMENT

Choose the preparatory treatment of metal surfaces to be coated: According to the desired degree of corrosion resistance and the type of material to be coated it is necessary to remove any element that may cause loss of adhesion of the paint from the metal, such as oils, fats and / or rust, and use an appropriate pretreatment to maximize the effectiveness of the coating systems.

FERROUS	ALUMINIUM
Phosphating Iron* + passivation Phosphating zinc* + passivation Sandblasting min. Sa 2,5/3 Ra 7/12 **or alternative processes that provide equivalent results*	Pretreatment Cr-free (fluoro titanic *or* fluorozirconic acid)* Chromate* Anodizing **or alternative processes that provide equivalent results*



PRODUCT OVERVIEW

OUR ANTI-CORROSION PRIMERS AT A GLANCE

O-EP SERIES – EPOXY PRIMERS

The Epoxy Primer O-EP Series have been formulated to ensure the **highest resistance to corrosion-ferrous metal objects** exposed in critical humidity, salinity and industrial pollution, **according to ISO 12944-6**. They are effective for the protection of street and architectural furniture, of agricultural and industrial machines, parts of vehicles, and any other metallic product for internal and / or external that needs to be preserved from corrosion.

Xe-MP SERIES – EPOXY POLYESTER PRIMERS NEW GENERATION

NEW

KANSAI HELIOS Xe-MP Series offers a new generation of primers. They guarantee the same corrosion resistance performance as classic primers based on epoxy resins.

They convince with their specific characteristics:

- Easy repainting with a second top-coat layer.
- Prevents NOx oxidation in direct flame or air stream gas ovens.
- Exhibits high out-gassing properties on various supports like die-cast aluminum, zamak, cast iron, hot-dip galvanized steel, electro-galvanized steel, etc.

O-EP SERIES PRODUCTS

- **Epoxy-based + Zinc dust**
  O195.O293 – EP GRIGIO ZINC PRIMER L.
- **Epoxy-based – Outgasing**
  O165.O393 – EP GRIGIO OP. PRIMER RAL 7001 TS
- **Epoxy-based Zinc-free technology**
  O195.O773 – EP GRIGIO SL. ECO-PRIMER ZN-FREE

XE-MP SERIES PRODUCTS

Second Generation E-Static Hybrid Primer*

- X195.O923e – MP GRIGIO PRIMER e-STATIC OUT-GAS G.O.
- X165.O959e – MP PRIMER e-STATIC OUT-GAS G.O. CART.

* Primers pending QUALISTEELCOAT approval.

O-EP PRIMER & TOPCOAT

KANSAI HELIOS Epoxy Primer O-EP Series have excellent adhesion to the substrate and prepare the articles to be repainted, showing excellent adhesion between layers in combination with suitable KANSAI HELIOS topcoat:

- X- Mp Series
- PH-Pes ECO-IND Series
- P-Pes IND Series
- Q-Pes Series
- N-Pe-Sd Series

The double layer system KANSAI HELIOS Primer Series **O-EP + Topcoat** improves the aesthetic qualities of the manufactured articles and mask various processing defects, such as blowholes, bubbles, or pinholing.

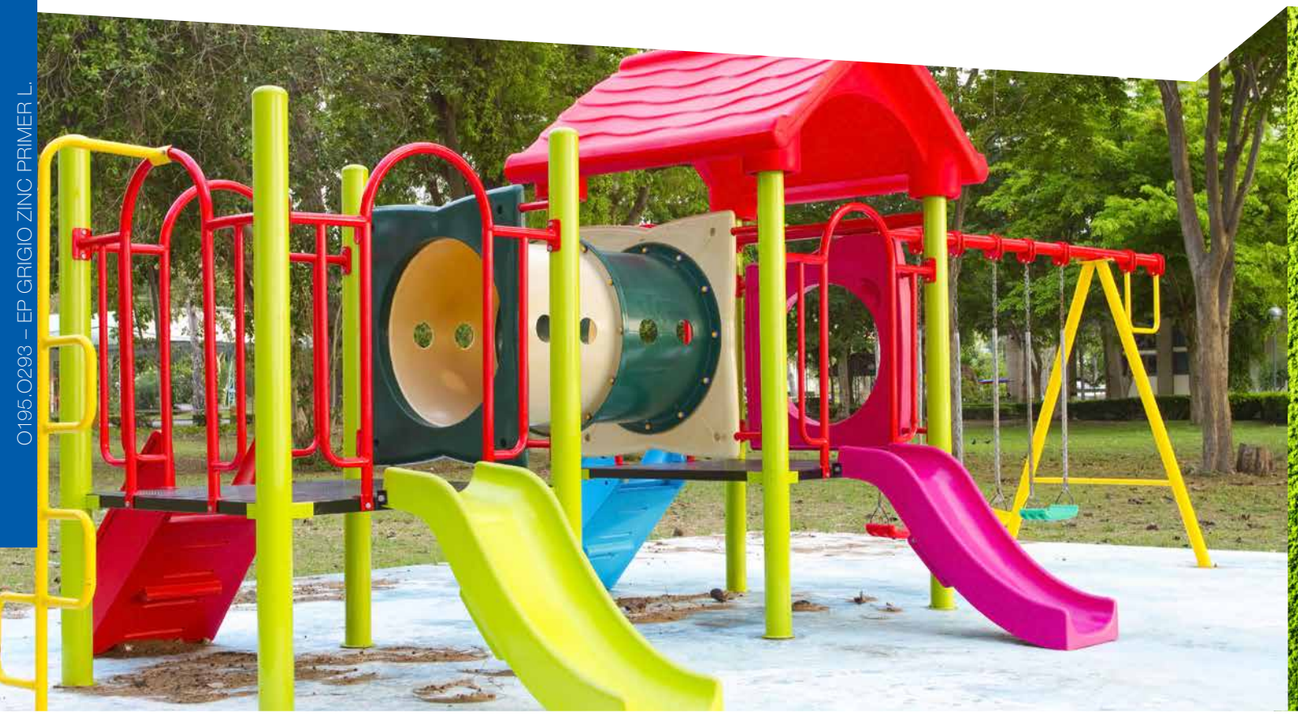
ECO-Primer O195 and top coat Q-Pes series (Qualicoat approved series) have been approved for Qualisteelcoat coating cycles:

- PE-0115 ST2-C4H Mechanical pretreatment
- PE-0116 ST2-C4H Chemical pretreatment
- PE-0117 HD2-C5H Mechanical pretreatment
- PE-0118 HD2-C5H Chemical pretreatment

ADVANTAGES

- improves the aesthetic qualities
- mask various processing defects (blowholes, bubbles, or pinholing)
- excellent adhesion to the substrate

quali steel coat
International Quality Label for Coated Steel



O195.O293
EP GRIGIO ZINC PRIMER L.

The product was developed as **a primer or anti-corrosive primer** for ferrous substrates, based on a high crosslinking density epoxy system and a high percentage of zinc. It improves dramatically the resistance to corrosion, humidity and chemical agents. The primer O195.O293 prepares the metal articles for multilayer coating systems, masking various manufacturing defects.

Using a suitable pre-treatment cycle, the primer O195.O293 and a suitable KANSAI HELIOS topcoat (PH-Series Pes ECO-IND, P-IND Pes, Q-Pes and N-Pe-Sd as needed) a barrier and cathodic protection is created, thanks to the "sacrificial anode" effect played by zinc, which makes the substrate protected from corrosion even in the harshest conditions according to ISO 12944.

TECHNICAL CHARACTERISTICS

Colour: Grey
Finishing: Smooth semi glossy
Density: 2,7/2,9 gr./cm^3
Film thickness: min. 80 µm
Mechanical characteristics: (sse specific TDS)

Curing conditions:

- 180/15-20' (°C object temperature for minutes), if used as a finishing coat.
- 150/15' o 180/3' (°C object temperature for minutes), if used as a primer.
  Partial curing is essential to optimize the adhesion of a powder topcoat.
- Note: In the presence of direct-flame gas ovens or malfunctioning ovens, there can be a surface oxidation of the primer, due to fumes of the gas used, which reduces the adhesion between it and the topcoat.

O165.O393
EP GRIGIO OP. PRIMER RAL 7001 TS

The product was developed as a primer or anti-corrosive primer for multilayer coating systems of alloy aluminum. Based on a high density of crosslinking epoxy system and special additives, due to its specific formulation, the primer **O165.O393** helps the reduction of "air bubbles" on the substrates that could generate degassing. The primer **O165.O393** has excellent resistance to chemicals and moisture and can also be used as a finish coat.

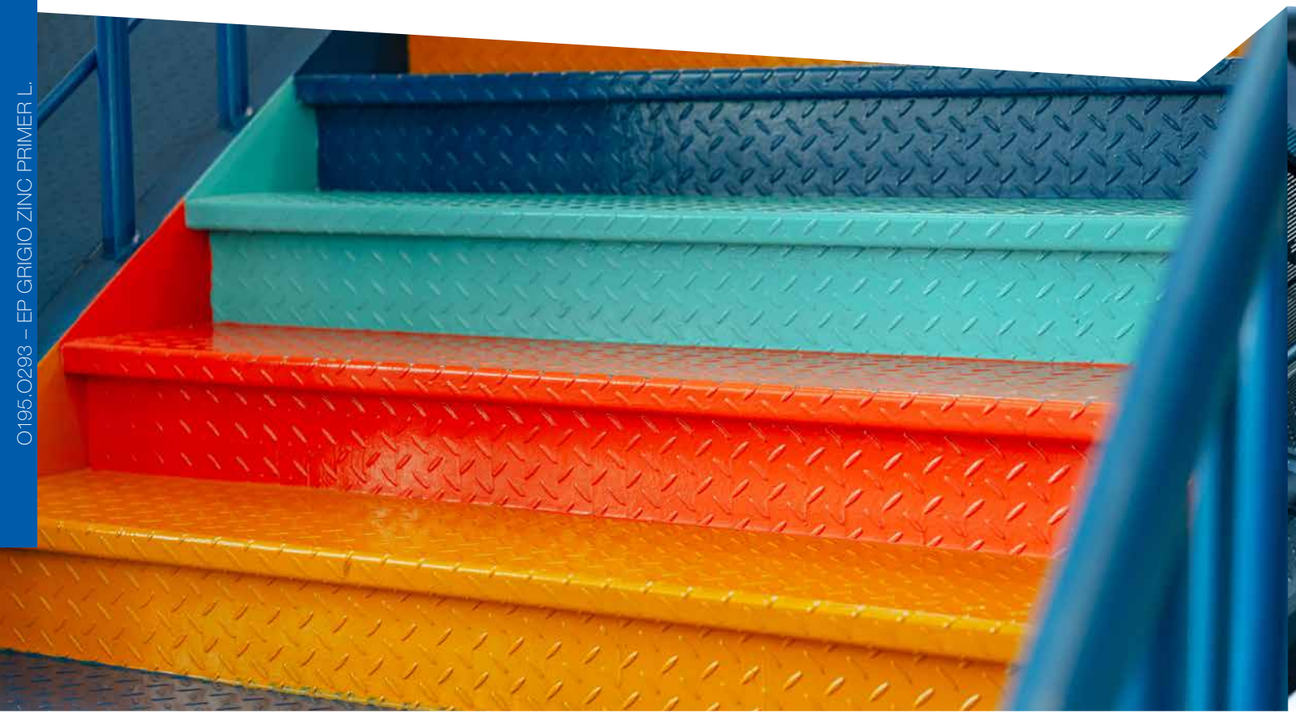
Using a suitable pre-treatment cycle and a suitable KANSAI HELIOS topcoat (PH-Series Pes ECO-IND, P-IND Pes, Q-Pes and N-Pe-Sd as needed), the primer **O165.O393** creates a "barrier effect" that gives the substrate an excellent corrosion protection according to ISO 12944.

TECHNICAL CHARACTERISTICS

Colour: Grey Ral 7001
Finishing: Smooth matt
Density: 1,6/1,7 gr./cm^3
Film thickness: min. 80 µm
Mechanical characteristics: (sse specific TDS)

Curing conditions:

- 180/15-20' (°C object temperature for minutes), if used as a finishing coat.
- 150/15' o 180/3' (°C object temperature for minutes), if used as a primer.
  Partial curing is essential to optimize the adhesion of a powder topcoat.
- Note: In the presence of direct-flame gas ovens or malfunctioning ovens, there can be a surface oxidation of the primer, due to fumes of the gas used, which reduces the adhesion between it and the topcoat.



O195.O773
EP GRIGIO SL. ZN-FREE PRIMER

This new product was developed as a primer or anti-corrosive primer for ferrous substrates, totally Zn-free, is based on a high crosslink density epoxy system and an original amorphous filler. The primer **O195.O773** has outstanding resistance to corrosion, moisture and chemicals, has better mechanical properties and adhesion to ferrous substrates than classic zinc primers. It is totally devoid of hazard pictograms labeling and does not require ADR for the transport. Due to its low specific weight the **yield per coated m² is increased**.

O195.O773 primer, used in conjunction with an appropriate pre-treatment cycle and a suitable KANSAI HELIOS topcoat (PH-Series Pes ECO-IND, IND Pes-P, Q-Pes and N-Pe-Sd as needed), creates a "barrier effect" so it does not exploit the sacrificial anode but it makes the substrate protected from corrosion at least at the same level of the zinc-based primer, and meets the most stringent conditions according to ISO 12944.

TECHNICAL CHARACTERISTICS

Colour: Grey
Finishing: Smooth semi glossy
Density: 1,3/1,4 gr./cm³
Film thickness: min. 80 µm
Mechanical characteristics: (sse specific TDS)

Curing conditions:

- 180/15-20' (°C object temperature for minutes), if used as a finishing coat.
- 150/15' o 180/3' (°C object temperature for minutes), if used as a primer.
  Partial curing is essential to optimize the adhesion of a powder topcoat.
- Note: In the presence of direct-flame gas ovens or malfunctioning ovens, there can be a surface oxidation of the primer, due to fumes of the gas used, which reduces the adhesion between it and the topcoat.

NEW GENERATION PRIMERS: XE-MP SERIES

X195.O923e - MP GRIGIO PRIMER e-STATIC OUT-GAS G.O.
X165.O959e - MP PRIMER e-STATIC OUT-GAS G.O. CART.

The anti-corrosion primers of KANSAI HELIOS Xe-MP Series are based on epoxy resins. They possess a high cross-linking density, providing the best corrosion protection for ferrous substrates. As a result, they are exempt from labeling obligations and contain special conductive functional pigments. This allows for extremely easy repainting with a second layer of topcoat.

Primers X195.O923e and X195.O959e exhibit resistance to corrosion, humidity, and chemical products. Additionally, their mechanical and adhesion properties are on par with, if not superior to, KANSAI HELIOS' first-generation primers.

These primers used in synergy with a specific pre-treatment cycle and specific finish (PH Pes ECO-IND, IND Pes-P, Q-Pes and N-Pe-Sd series as necessary), create a "barrier effect" which makes the substrate protected from corrosion and meet the most stringent conditions according to ISO12944.

TECHNICAL CHARACTERISTICS

Colour: Dark grey
Finishing: Smooth semi-gloss / smooth matte
Density: 1.45/1.55 gr/cm³
Film thickness: min. 80 µm
Mechanical characteristics: (sse specific TDS)

Curing conditions:

- 180/15-20' (°C object temperature for minutes), if used as a finishing coat.
- 150/15' o 180/3' (°C object temperature for minutes), if used as a primer.
  Partial curing is essential to optimize the adhesion of a powder topcoat.
- Note: In the presence of direct-flame gas ovens or malfunctioning ovens, there can be a surface oxidation of the primer, due to fumes of the gas used, which reduces the adhesion between it and the topcoat.

TABLE GUIDE

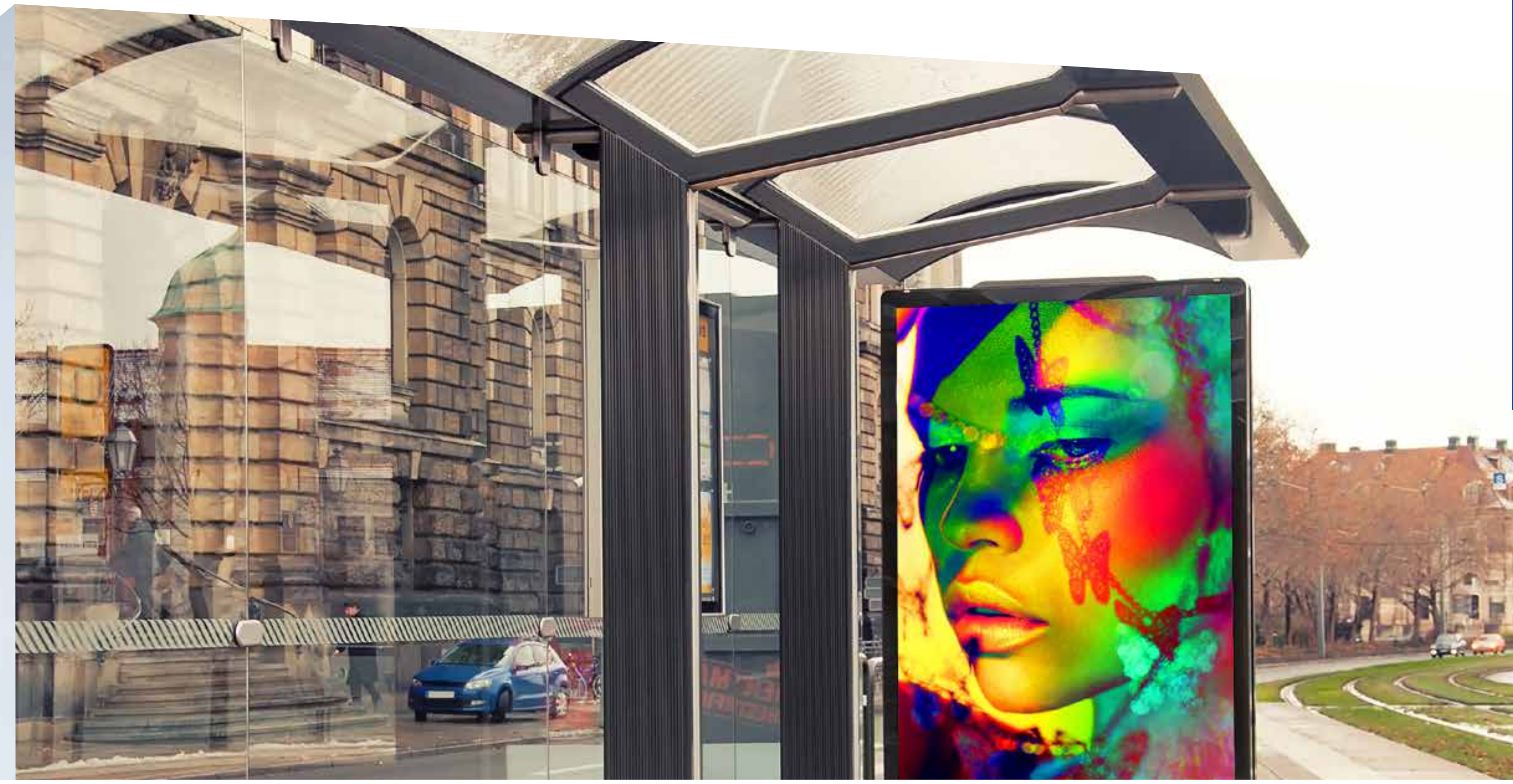


TABLE GUIDE FOR **PAINTING OF METAL SURFACES**

Test NSS (ISO 9227)	h 0-125	h 125-250	h 250-500	h 500-750	h 750-1000	h 1000-1500	h 1500-2000	h 2000-3000	h > 3000
Mechanical preparation / Suggested Pre-treatment	Phosphating Fe*	Phosphating Fe*	Phosphating Zn* + passivation	Phosphating Fe* *or* Phosphating Zn* + passivation	Phosphating Fe* *or* Phosphating Zn* + passivation	Phosphating Zn* + passivation	Sandblasting Sa 2,5/3-Ra 7/12 *or* Phosphating Zn* + passivation	Sandblasting Sa 2,5/3-Ra 7/12 *or* Phosphating Zn* + passivation	Sandblasting Sa 2,5/3-Ra 7/12 *or* Phosphating Zn* + passivation
Suggested Primer	not necessary	not necessary	O165.O393 X165. O959e** X195.O923e** **80 µm**	O165.O393 EP O195.O293 EP Zn O195.O773 Zn-free X165.O959e** X195.O923e** **80 µm**	O165.O393 EP O195.O293 EP Zn O195.O773 Zn-free X165.O959e** X195.O923e** **80 µm**	O165.O393 EP O195.O293 EP Zn O195.O773 Zn-free X165.O959e** X195.O923e** **80 µm**	O195.O293 EP Zn O195.O773 Zn-free X165.O959e** X195.O923e** **80 µm**	O195.O293 EP Zn O195.O773 Zn-free **80 µm**	O195.O293 EP Zn O195.O773 Zn-free **80 µm**
Suggested Topcoat	**Interior** O-Ep series X- Mp series PH-Pes ECO-IND series **80-100 µm**	**Interior** O-Ep series X- Mp series PH-Pes ECO-IND series **80-100 µm**	**Interior** O-Ep series X- Mp series PH-Pes ECO-IND series **80-100 µm**	**Interior** O-Ep series X- Mp series PH-Pes ECO-IND series **80-100 µm**	**Interior** O-Ep series X- Mp series PH-Pes ECO-IND series **80-100 µm**	**Interior** O-Ep series X- Mp series PH-Pes ECO-IND series **80-100 µm**	**Interior** O-Ep series X- Mp series PH-Pes ECO-IND series **80-100 µm**	**Interior** O-Ep series X- Mp series PH-Pes ECO-IND series **80-100 µm**	**Interior** O-Ep series X- Mp series PH-Pes ECO-IND series **80-100 µm**
	Exterior	**Exterior** PH-Pes ECO-IND series P-Pes IND series Q-Pes series N-Pe-Sd series **80-100 µm**	**Exterior** PH-Pes ECO-IND series P-Pes IND series Q-Pes series N-Pe-Sd series **80-100 µm**	**Exterior** P-Pes IND series Q-Pes series N-Pe-Sd series **80-100 µm**	**Exterior** P-Pes IND series Q-Pes series N-Pe-Sd series **80-100 µm**	**Exterior** P-Pes IND series Q-Pes series N-Pe-Sd series **80-100 µm**	**Exterior** P-Pes IND series Q-Pes series N-Pe-Sd series **80-100 µm**	**Exterior** P-Pes IND series Q-Pes series N-Pe-Sd series **80-100 µm**	**Exterior** P-Pes IND series Q-Pes series N-Pe-Sd series **80-100 µm**

*(or alternative processes that provide equivalent results) -
In case of particular requirements, a second primer layer in addition to the first and subsequent topcoat can be used.
** product not yet certified by Qualisteelcoat

NOTES: For special projects, where resistance to salt spray higher than 3000 hours is required, please contact KANSAI HELIOS Italy. All the tests of corrosion resistance were performed on UNI 5961 Fe-salt phosphated steel panels, UNI 5961 Zn-salt phosphated steel panels and Sa 2,5 sandblasted steel panels. Always refer to the specific technical datasheet of the product.

ECO-Primer O195 and top coat Q-Pes series are Qualisteelcoat approved

quali steel coat
International Quality Label for Coated Steel

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