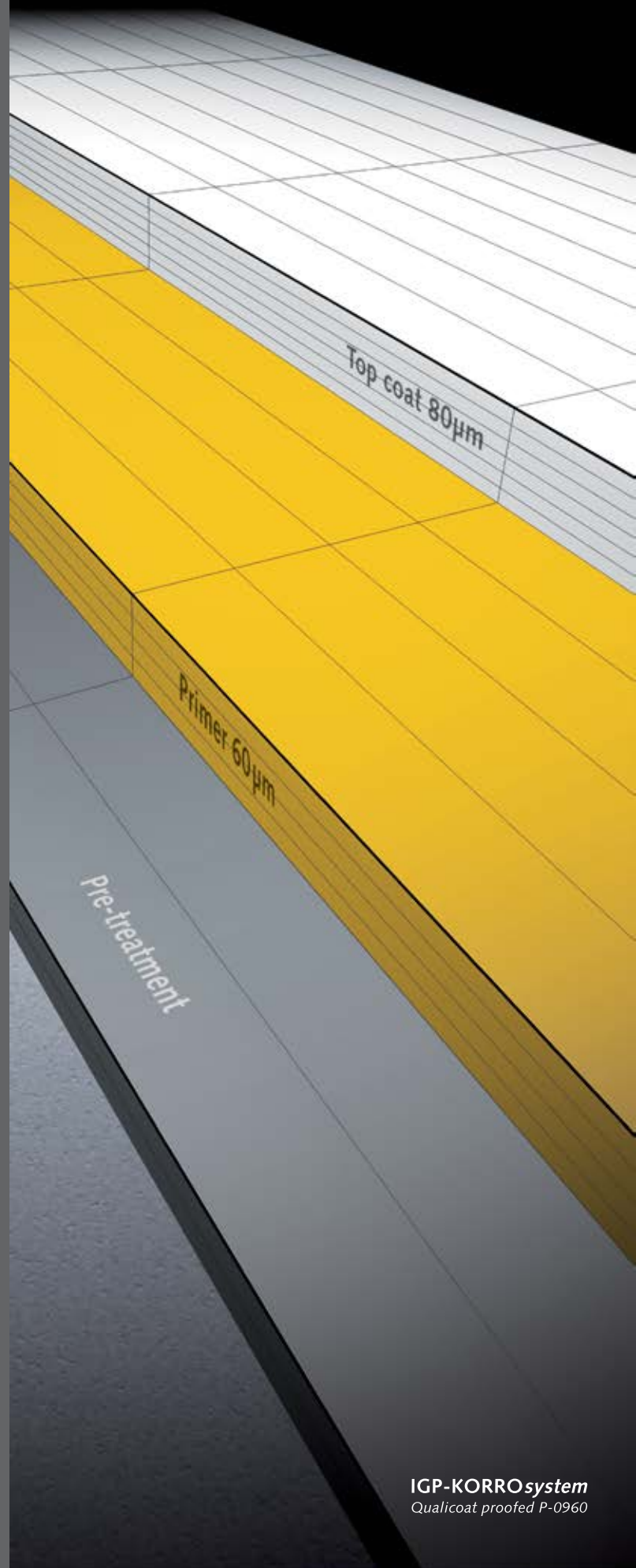


Safer and longer-lasting corrosion protection with IGP powder base coats

Quality assurance through corrosion protection for any substrate by using environmentally-friendly powder varnishes.

 swiss quality



POWDER COATINGS.

IGP-KORROsystem
Qualicoat proofed P-0960

IGP Pulvertechnik AG – your competent partner for corrosion protection

IGP Pulvertechnik AG has been involved in the development and production of ecological powder varnishes for more than 40 years. The topic of “corrosion protection” has always been given great emphasis at IGP. The high quality and safety standard we provide for the benefit of our customers are demonstrated by our continuous new product developments, ongoing certification procedures, qualified personnel and specialized seminar series on the topic of corrosion protection.

Tested and expert corrosion protection – a guarantee for maintaining value

Tested professional competence

Only professionally applied corrosion protection measures can help prevent damage and avoid losses. This requires specifically trained personnel with special expertise. By using “DIN-tested coating inspectors”, IGP guarantees the competent implementation of corrosion protection measures as well as the repair of corrosion damage. Through the international recognition of the DIN label and verification by an accredited certification institute, all IGP customers can safely trust the quality statement in terms of corrosion protection.

IGP Certificates

IFO – Institute for Surface Technology GmbH

The IFO general test certification standard, recognised by the building authorities, pertains to the compliance of the anti-corrosive effect of powder coating systems on steel building components. IGP corrosion protection systems have passed the test in accordance with DIN EN ISO 12944, part 6, corrosion category C5-I and C5-M. We would be happy to provide you with the certificates of our corrosion protection systems upon request.

SP – Technical research institute of Sweden, chemistry and material technology

The Swedish institute successfully tested the coating structures of IGP's Korroprimer, anti-corrosive primer systems in accordance with the STD VCS 1027.149 accelerated corrosion test. This test is a demanding version of the salt spray test, which is commonly used in the automobile industry.

Qualicoat international – quality seal for aluminium coating in architectural applications

IGP-KORROsystem – certified two-coat application system for aluminium substrates based on Qualicoat P-0960

IGP corrosion testing

Our service for your safety

We can conduct a corrosion inspection of your coating structures using standardised IGP testing devices. We provide you with the results for your interpretation (see DIN 55633).



Salt spray test to DIN EN ISO 9227

Competitive comparison

In continual test procedures, a variety of corrosion-protective powders are tested and compared. The IGP-KORROPRIMER systems consistently receive the best results in these tests.



DIN coating inspector



IFO – Institute for Surface Technology



SP – Technical research institute of Sweden



Qualicoat International

Optimal protection against every type of corrosion

3 steps to the optimal protection of your steel structure with powder coating systems

In the norm DIN 55633 (2009), all the aspects that are significant for appropriate corrosion protection with powder coating systems were taken into consideration. It has supplemented the norm DIN EN ISO 12944, which only

deals with protection by means of liquid coating systems and is closely related to it. Both norms characterise the atmospheric surroundings in terms of corrosion categories based on mass loss information of uncoated steel within the first year of weathering. To select the right powder coating system, follow the 3 steps found below the table.

Note

- The single-layer IGP interior and exterior qualities may be used to cover the minimal demands in accordance with corrosion category C2.
- We recommend a chemical pre-treatment (phosphating or organic silicon) for zinc-plated surfaces.

- We generally recommend the V-version IGP-KORROPRIMER 1001 or the IGP-KORROPRIMER 1809 (low temperature powder) plus an IGP top coat for spray galvanised components.
- Zinc phosphating with IGP powder coating solutions meet the requirements of the C4 corrosion category.

Table for the selection of the optimal coating system

(In accordance with DIN 55633 and DIN EN ISO 12944-1)

Corrosion category (Corrosion level)	Typical environment Outside area	Typical environment Indoor area	Test procedures			Duration of protection		Pre-treatment processes and recommended IGP coating system							
			ISO 2812-1 Chemical resistance in hours	ISO 6270 Condensate test in hours	ISO 9227 Salt spray test in hours	Class	Years	Phosphating and comparable phosphate- free methods	Abrasives blasting SA 2 1/2	Hot dip galvanising					
										Sweeping	Chromating				
C3 (moderate)	City and industrial atmosphere with moderate sulphur dioxide exposure. Moderate coast climate with low salt exposure.	Production rooms with high moisture levels and some air pollution, e.g. systems for food production, laundries, breweries, creameries.	-	48	120	low	< 5	*		*		*		*	
			-	120	240	medium	5 – 15	*		*		*		*	
			-	240	480	high*	> 15	-		-		*		*	
C4 (severe)	Industrial atmosphere and coast region with moderate salt exposure.	Chemical plants, swimming pools, dry docks.	-	120	240	low	< 5			*		*		*	
			-	240	480	medium	5 – 15		not recommended	*		*		*	
			-	480	720	high*	> 15		not recommended	*		*		*	
C5-I (very severe, industry)	Industrial atmosphere with high relative humidity and an aggressive atmosphere.	Buildings or areas with nearly continuous condensation and high contamination levels.	168	240	480	low	< 5			✓		✓		✓	
			168	480	720	medium	5 – 15		not recommended	✓		✓		✓	
			168	720	1440	high*	> 15		not recommended	-		-		✓	
C5-M (very severe, ocean)	Coastal and surrounding region with high salt exposure.	Buildings or areas with nearly continuous condensation and high contamination levels.	-	240	480	low	< 5			✓		✓		✓	
			-	480	720	medium	5 – 15		not recommended	✓		✓		✓	
			-	720	1440	high*	> 15		not recommended	-		✓		✓	

low = short | medium = moderate | high = long

✓ IFO certified IGP coating system | * DIN 55633 tested and fulfilled

Step 1

Selecting the corrosion category

Using the table above, select the corresponding corrosion category.

Step 2

Test method and determining protection duration

Based on the low, medium and high classes, you can determine which foreseeable protection duration the object to be coated will have in the respective environment. The protection duration based on ISO 12944 refers to the time lapse up to the first major overhaul. The inspection times listed in the test methods give you an idea of the respective protection duration (class and years) and thus also the corrosion category.

*see recommended IGP top coat system in step 3

Step 3

Selecting the pre-treatment and coating systems

Based on your corrosion category, you select the appropriate coating system with the corresponding pre-treatment. When doing so, pay attention to the recommended IGP-KORROPRIMER system and the minimum layer thickness in accordance with ISO 12944. The proper selection of pre-treatment and the correct application have a significant effect on the performance of the entire corrosion protection.

Names of IGP coating systems:

Top coat outdoor area

IGP-DURA^{pol}
IGP-DURA^{than}
IGP-DURA^{cryl}*
IGP-DURA^{face}
IGP-DURA^{xal}*
IGP-HWF*
IGP-PFC*

IGP-KORROPRIMER systems

10 primer for iron and steel substrates
10V primer for galvanised substrates
18 low temperature powder
30 primer for aluminium substrates

IGP-KORROPRIMER systems – corrosion protection solutions for aluminium and steel

The corrosion-resistant IGP-KORROPRIMER is particularly notable for its excellent mechanical properties and its outstanding chemical resistance. The primer is ideally suited for finishing with all IGP powder varnishes as well as other topcoat paint systems.


Product advantages:

- Can achieve protection class C5-M/-I with appropriate coating structure
- Excellent chemical resistance
- Excellent adhesion to the substrate and between the coats
- Good mechanical properties
- Free of heavy metals
- Low specific weight (cost efficiency)
- Variable finishing (coating powder or liquid varnishes)

Application range:

- Blasted steel
- Chemically pre-treated steel
- Zinc-plated, chromatised steel
- Swept galvanised steel
- Zincor sheet metal for protection of exposed, zinc-free areas
- Steel plate in damp interiors (primer for coarse structures)

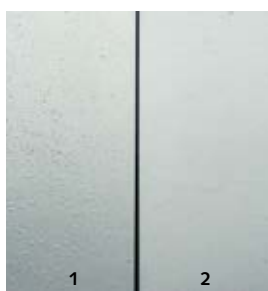
IGP-KORROPRIMER product overview

Substrate	IGP corrosion protection systems	Stoving conditions (object temperature)	Colors	IGP Item number
STEEL	IGP-KORROPRIMER 1001	190 °C / 10–15 min. 180 °C / 20–25 min.	Light grey, approx. RAL 7035 Traffic grey B, approx. RAL 7043	1001A70354A00 1001A70434A00
	IGP-KORROPRIMER 1809 low temperature system 	140 °C / 10–12 min. 130 °C / 15–20 min.	Light grey, approx. RAL 7035	1809A70354A00
	IGP-KORROPRIMER 1001 V for galvanised steel	190 °C / 10–15 min. 180 °C / 20–25 min.	Telegrey 4, approx. RAL 7047 Iron grey, approx. RAL 7011	1001A70474V00 1001A70114V00
	ALUMINIUM	IGP-KORROPRIMER 3002	190 °C / 10–15 min. 180 °C / 20–25 min. 170 °C / 20–30 min.	Traffic grey A, approx. RAL 7042
STEEL & ALUMINIUM	IGP-KORROPRIMER 6007	190 °C / 8–12 Min. 180 °C / 10–15 Min. 170 °C / 15–20 Min.	Light grey ca. RAL 7035	6007A70354A00

IGP solutions for special substrates

IGP-KORROPRIMER 1001 V – the outgas-friendly corrosion protection for galvanised steel

This V-version primer is specially developed for galvanised steel and is suitable for all conventional pre-treatments. Prior to the cross-linking, it allows degassing of the porous zinc surface. This gives a smoother surface.



Tip: The lower the temperature during curing, the less degassing occurs. The low temperature primer IGP-KORROPRIMER 1809 offers an interesting option.

- 1 Surface disturbance by outgassing
- 2 Blister-free coating solution with IGP-KORROPRIMER 1001 V

IGP-KORROPRIMER 3002A – anti-corrosion primer for aluminium and aluminium alloys

For optimal adhesion between the pre-treated aluminium and the top coat:

- Improved protection against filiform corrosion
- Improved protection against chemicals
- Better edge coverage

Only certified 2 coat system

This system should always be used in negative environmental conditions such as salt-content and aggressive chemicals (swimming pools and heavy environmental pollution)

Usage information and benefits

“Setting” the primer coat

Two-coat application processes are time-consuming. It is therefore important to keep the stove retention time as short as possible. The term “setting” refers to reaching the recommended temperature one time in accordance with our technical data sheets. Setting is not the same as fully curing the primer coat. The stability of the coating is ensured (no thinning at the edge). This saves you both time and money in the coating process. Please observe our processing instructions (www.igp.ch).

Stove circulating air temperature 200 °C	Object temperature	Substrate thickness 0,8 mm	Substrate thickness 3,0 mm	Substrate thickness 20,0 mm
	140 °C	2,2 min.	6,0 min.	16 min.
	160 °C	3,2 min.	7,3 min.	22 min.
	180 °C	4,4 min.	11,1 min.	33 min.
	200 °C	7,9 min.	~ 25 min.	> 60 min.

The table shows the relationship between stove circulating air temperature and the various timespans for reaching a specific object temperature (setting).

Both ecological and economical thanks to being zinc-free

IGP-KORROPRIMERS do not contain zinc! Since the proportion of zinc ratio is not high enough to form an active corrosion protection in powder varnishes, this heavy metal, which is subject to labelling, makes powder varnish uneconomical while also not increasing the protective properties.

Spreading rate

	Y Spec. weight	Coating-tickness	Coating-result
IGP-KORROPRIMER:	1,6 g / cm ³	70 µm	9,5 m ²
Primer with zinc content:	3,2 g / cm ³	70 µm	4,4 m ²

Benefits in practical application

All IGP-KORROPRIMER powder varnishes for steel (1001, 1809) and aluminium coatings (3002) have very good mechanical properties. Due to their film flexibility, they have excellent functionality for subsequent processing steps. The user-friendly handling and highly practical functionality are impressive features.



4

Production-related and/or application-related deviations are possible. Please observe our technical data sheets and technical information as well as the processing instructions. Practical experiments adapted to the particular object and stoving oven to determine the best possible stoving conditions are recommended in any event..



5

What is corrosion?

Corrosion is the greatest enemy of all metal substrates. According to DIN, corrosion means "the destruction of metals through chemical or electrochemical reactions to their environment". This "environment" is made up of the natural circumstances such as the surrounding atmosphere, amount of precipitation and proximity to rivers or oceans.

The environmental impact caused by "humans", such as air pollution or increased solar radiation, are taking on ever-increasing importance. Among factors that can also accelerate the negative corrosion reaction is the residue from the individual metal processing phases. The best known example of corrosion is the rusting of iron. This oxide is a solid substance, which grows continuously as

a bulky, porous covering on the metal and negatively impacts characteristics such as load-bearing capacity, cohesiveness, and durability. But corrosion is not only a well-known issue for steel substrates. Aluminium substrates can also be affected by Filiform corrosion, which is caused by the effect of chlorides in connection with corresponding humidity levels.

Economical effect and ecological solution

According to estimates, the average annual accumulating costs and related costs due to losses in production and capacity that are a result of corrosion amount to 3.5 % of the national incomes in industrial countries: a loss totalling billions.

To avoid this and to protect steel and aluminium constructions, organic coating systems can be applied. IGP's 2-layer powder coating system specifically protects a variety of substrates such as steel, galvanised steel and aluminium against the various outward forms of corrosion.

The systems consist of corrosion inhibiting and adhesion promoting IGP-KORROPRIMERS in the form of a powder base coat and a weather-proof, UV-resistant powder varnish.

The benefits of the environmentally-friendly and long-lasting IGP powder coating systems in the sector of industrial and building industry corrosion protection have been confirmed by new standards such as DIN 55633 "coating materials, corrosion protection of steel structures through powder coating systems".

Photo captions

Wilbert Turmkrane GmbH, Waldlaubersheim (1)

Glattalbahn, Zürich (2)

Bridge Leidschenveen, Den Haag (3)

Leutenegger + Frei AG, Andwil (4)

ENVIRAL® Oberflächenveredelung GmbH, Niemegek (5)



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