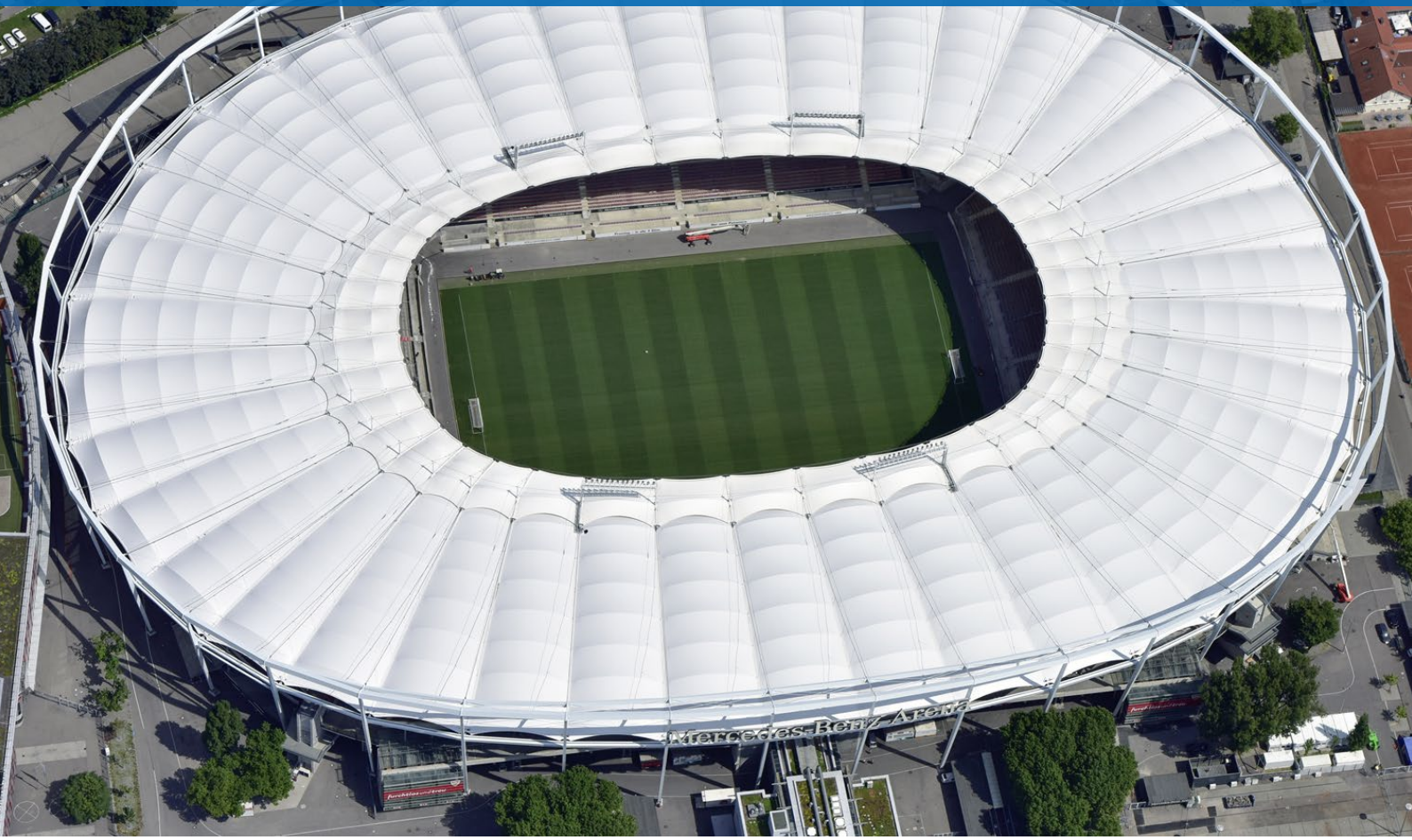
SHERWIN WILLIAMS®

CORROSION PROTECTIVE COATINGS FOR STEEL STRUCTURES

PRACTICAL COATING SYSTEMS FOR ALL IMPORTANT APPLICATIONS ACCORDING TO ISO 12944-5:2020



FROM SPEC TO PROTECT

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CORROSION PROTECTIVE COATINGS FOR STEEL STRUCTURES

Insufficient corrosion protection of steel structures can have serious consequences. Lack of protection frequently leads to structural problems quite apart from the structure's visual appearance. Appropriate protective coatings and sensible maintenance intervals ensure long-term protection of steel structures and can avoid cost-intensive total refurbishment or even decommissioning.

Sherwin-Williams solutions are efficient product systems, high reliability, decades of experience and excellent technical service. Our specialists assist you – whether you are an architect, a planner, a fabricator, a steel constructor or responsible for creating tendering documents – when you need an individual corrosion protection solution.

We accompany your project from object analysis to selecting the right coating system to the final project conclusion.

CONTENT

Important notice:

Following the transfer of the Industrial Coatings business from Sika to Sherwin-Williams on 1st April 2022, our entire product portfolio had to be rebranded in accordance with the Sherwin-Williams branding as of 1st July 2023.

Detailed information on product naming and a holistic overview of all old and new product names can be found in our new Product Reference Guide.

Download the brochure now at:
protectiveeu.sherwin-williams.com

OUR QUALITY PROMISE

Thanks to advanced technologies, exceptional service and decades of experience, Sherwin-Williams Protective & Marine Coatings is a reliable partner for corrosion protection coatings in steel construction.

Our competent sales team, our specialized application technology, the experienced experts in product management, our innovative development department, as well as the production team all contribute to our quality promise.

- Service
- \+
- Innovation
- \+
- Competence
- \+
- Quality and sustainability

INSTRUCTION ON-SITE
during the coating works on request

Within the framework of control areas carrying out
SURFACE CHECKS

Consultation and sale by our experts, tested as
FROSIO INSPECTOR LEVEL III

INDIVIDUAL CONSULTATION
in the choice of the optimal coating system

INCREASED SAFETY THROUGH EFFICIENT PRODUCTS AND PROFESSIONAL CONSULTING

Without long-lasting and functional corrosion protection, many steel structures start to 'look quite old' after only a few years. But it is not only the appearance that is affected – the strength of the structure can also start to suffer. In the worst case, the only choice is between decommissioning the structure or a full refurbishment. That's why you can rely on Sherwin-Williams coating systems to maintain their value, durability and aesthetics right from the start.

Since 1998, the corrosion protection of steel structures has been regulated by the international standard ISO 12944. In 2018, the entire standard was adapted to the state of the art with constantly increasing requirements and findings with regard to corrosion protection coatings. In its nine parts, this standard illuminates the following aspects in detail:

- Basics and environmental influences
- Surface evaluation and preparation
- Conception of initial protection and refurbishment
- Laboratory testing of coating systems
- Execution and supervision of works

Our high-performance products and systems cover the entire spectrum of the defined requirements.

Further information on our full range of corrosion and fire protection coatings can be found on page 27. The selection of the optimal coating system in terms of technical and economic aspects takes work. For this reason, we have presented our suggestions and products in easy-to-follow tables.

Our practice-oriented information will also become a welcome aid for you and make choosing the right corrosion protection system easier. If you have any questions, we will gladly advise you.

Table	
1	Coating systems on steel surfaces
2	Coatings on hot-dip galvanised steel
3	Refurbishment of old coating
4	Product features of our primers
5	Product features of our intermediate coats
6	Product features of our top coats
7	Product features of our intermediate coats
8	Product features of our top coats

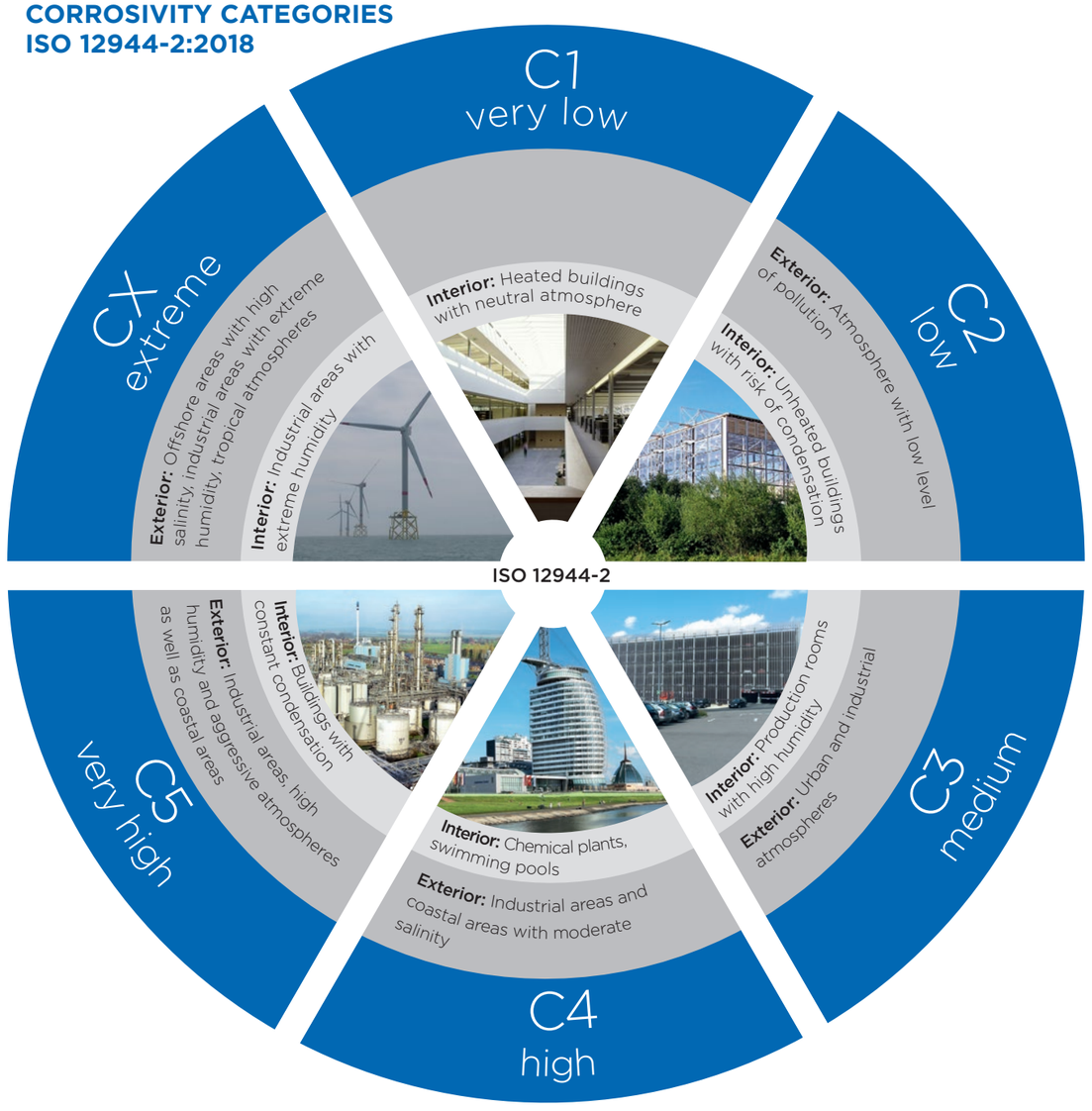
PERFECT RESULTS DUE TO INNOVATIVE AND PROVED COATING SYSTEMS

Corrosion protective coatings of steel structures are exposed to specific corrosion loads depending on the ambient conditions. These are defined in ISO 12944-1,-2 depending on durability range and corrosivity category.

Based on many years of experience, it is now possible to provide coating systems for steel with more than 25 years of durability in almost all atmospheric load ranges. As a result, increasing the durability range to more than 25 years has now been possible.

Durability range	Abbreviation (s)	Period of time
Low	**L** (low)	Up to 7 years
Medium	**M** (medium)	7 – 15 years
High	**H** (high)	15 – 25 years
Very high	**VH** (very high)	More than 25 years

CORROSIVITY CATEGORIES ISO 12944-2:2018



The corrosivity categories were restructured in the 2018 revised standard and now range from C1 to CX. CX describes extreme conditions related to marine climate or tropical atmosphere and is treated within the new part 9 of the standard.

PROTECTION OVER DECADES – ISO 12944-5:2020

To offer safe protection against corrosion, the diffusion barrier through coatings plays an essential role. Therefore, minimum requirements for coating systems are defined in the standard. The minimum number of layers and the minimum layer thickness are normative, i.e. required to protect the object in accordance with ISO 12944.

REQUIREMENTS ON COATING SYSTEMS

NUMBER OF LAYERS AND MINIMUM LAYER THICKNESS

- The **m**inimum **n**umber **o**f **c**oats (MNOC) and the total film thickness (NDFT = **N**ominal **d**ry **f**ilm **t**hickness) of the individual systems are obligatory. Higher film thicknesses and more working steps are possible.

SUBSTRATE

- The standard lists normative systems for steel in surface preparation grade Sa 2½, galvanised steel and steel and steel with thermally sprayed zinc coatings.

- According to the revised standard, metallic zinc layers are a part of the corrosion protection system and no longer part of the substrate.

SYSTEM BUILD-UP*

- The coating system varies according to the desired corrosivity category and durability range.

- From C2 very high it is also possible to adopt coating systems from higher or lower categories. Only the durability range varies according to the corrosivity category.

- From C2 low to C2 high it is possible to use C3 coating systems, but not on reverse. This means that a coating system which is highly suitable for C2 is not necessarily suitable for C3 medium despite identical coating thicknesses. This is due to different corrosion resistance requirements in the two corrosivity categories.

*The requirements based on the revised standard are shown in the table on page 11.

MINIMUM REQUIREMENTS FOR COATING SYSTEMS ON BLASTED OR HOT-DIP GALVANIZED STEEL SUBSTRATES IN ACCORDANCE WITH ISO 12944-5:2020

Coating system			Corrosivity categories							
			C2		C3		C4		C5	
Type of primer	Type of the following layer	Durability range	Number of coats	Total coating thick-ness (µm)	Number of coats	Total coating thick-ness (µm)	Number of coats	Total coating thick-ness (µm)	Number of coats	Total coating thick-ness (µm)
Blasted steel substrate										
Zinc Rich Primer (ESI, EP, PUR)	EP, PUR, AY	**L**	-	-	-	-	1	60	2	160
		M	-	-	1	60	2	160	2	200
		H	1	60	2	160	2	200	3	260
		VH	2	160	2	200	3	260	3	320
ESI, EP, PUR	EP, PUR, AY	**L**	-	-	-	-	1	120	2	180
		M	-	-	1	120	2	180	2	240
		H	1	120	2	180	2	240	2	300
		VH	2	180	2	240	2	300	3	360
AK, AY	AK, AY	**L**	-	-	1	100	1	160	-	-
		M	1	100	1	160	2	200	-	-
		H	1	160	2	200	2	260	-	-
		VH	2	200	2	260	-	-	-	-
Hot-dip galvanized steel										
EP, PUR	EP, PUR, AY	**L**	-	-	-	-	1	80	1	120
		M	-	-	1	80	1	120	2	160
		H	1	80	1	120	2	160	2	200
		VH	1	120	2	160	2	200	2	240
AY	AY	**L**	-	-	-	-	1	80	2	160
		M	-	-	1	80	2	160	2	200
		H	1	80	2	160	2	200	-	-
		VH	2	160	2	200	-	-	-	-

AK: 1-pack alkyd resin coatings **AY:** 1-pack acrylic resin coatings **ESI:** 1-pack or 2-pack ethyl silicate coatings
EP: 2-pack epoxy resin coatings **PUR:** 1-pack or 2-pack polyurethane coatings

TABLE 1A
SELECTION OF COATING SYSTEMS ON STEEL FOR CONDITIONS UP TO C3 HIGH / C5 LOW

COATING SYSTEMS FOR CORROSION PROTECTION OF STEEL STRUCTURES IN VARIOUS ATMOSPHERIC CONDITIONS ACCORDING TO ISO 12944-5:2020. SURFACE PREPARATION: SA 2½ (ISO 12944-4:2018)

Primer		Top coat		Total system		Corrosivity category															
						C2				C3				C4				C5			
Product name	NDFT (µm)	Product name	NDFT (µm)	Number of coats	NDFT (µm)	low	medium	high	very high	low	medium	high	very high	low	medium	high	very high	low	medium	high	very high
Kem-Kromik™ Steel Protect VHS Rapid	100			1	100	■	■														
Kem-Kromik™ Steel Protect VHS Rapid	80	**Kem-Kromik™ CorroTop**	80	2	160	■	■	■													
Kem-Kromik™ Aktivprimer Rapid	80	**Kem-Kromik™ CorroTop**	80	2	160	■	■	■													
Acrolon® PUR Color Plus	120			1	120	■	■	■													
Macropoxy® EP Color	120			1	120	■	■	■		■											
Kem-Kromik™ Steel Protect VHS Rapid	120			1	120	■	■	■		■											
Kem-Kromik™ Steel Protect VHS Rapid	120	**Kem-Kromik™ Steel Protect VHS Rapid**	80	2	200	■	■	■		■	■			■							
Kem-Kromik™ 6630 High Solid	100	**Kem-Kromik™ 6630 High Solid**	100	2	200	■	■	■	■	■	■	■		■	■						
Acrolon® PUR Color Plus	90	**Acrolon® PUR Color Plus**	90	2	180	■	■	■	■	■	■	■		■	■			■			
Macropoxy® EP Color	100	**Macropoxy® EP Color**	80	2	180	■	■	■	■	■	■	■		■	■			■			
Macropoxy® EP Color	100	**Acrolon® PUR Color Plus**	80	2	180	■	■	■	■	■	■	■		■	■			■			
Macropoxy® EG-1 Plus	100	**Acrolon® EG-5***	80	2	180	■	■	■	■	■	■	■		■	■			■			
Macropoxy® EG Phosphate Rapid	100	**Acrolon® EG-5***	80	2	180	■	■	■	■	■	■	■		■	■			■			
Acrolon® ZP Primer	100	**Acrolon® PUR Color Plus**	80	2	180	■	■	■	■	■	■	■		■	■			■			

* Alternatively Acrolon® EG-4, Acrolon® 2330 or Acrolon® 2230 VHS

TABLE 1B
SELECTION OF COATING SYSTEMS ON STEEL FOR CONDITIONS UP TO C5

COATING SYSTEMS FOR CORROSION PROTECTION OF STEEL STRUCTURES IN VARIOUS ATMOSPHERIC CONDITIONS ACCORDING TO ISO 12944-5:2020. SURFACE PREPARATION: SA 2½ (ISO 12944-4:2018)

Primer		Intermediate coat		Top coat		Total system		Corrosivity category								
								C3	C4				C5			
Product name	NDFT (µm)	Product name	NDFT (µm)	Product name	NDFT (µm)	Number of coats	NDFT (µm)	very high	low	medium	high	very high	low	medium	high	very high
Kem-Kromik™ 6630 Primer	80	**Kem-Kromik™ 6630 High Solid**	100	**Kem-Kromik™ 6630 High Solid**	100	3	280	■	■	■	■					
Macropoxy® Primer HE N	160			**Acrolon® EG-5***	80	2	240	■	■	■	■		■	■		
Macropoxy® EG-1 Plus	160			**Acrolon® EG-5***	80	2	240	■	■	■	■		■	■		
Macropoxy® 450 Rapid	120			**Acrolon® EG-120**	120	2	240	■	■	■	■		■	■		
Macropoxy® Poxicolor	120			**Macropoxy® Poxicolor**	120	2	240	■	■	■	■		■	■		
Zinc Clad® 2204 VHS	220			**Acrolon® 2230 VHS**	80	2	300	■	■	■	■	■	■	■	■	
Dura-Plate® Poxicolor SW N	220			**Acrolon® EG-5***	80	2	300	■	■	■	■	■	■	■	■	
Macropoxy® EG Phosphate N	100	**Macropoxy® EG-1 Plus**	120	**Acrolon® EG-5***	80	3	300	■	■	■	■	■	■	■	■	
Macropoxy® EG Phosphate Rapid	100	**Macropoxy® EG-1 Rapid Plus**	120	**Acrolon® EG-5***	80	3	300	■	■	■	■	■	■	■	■	
Acrolon® ZP Primer	100	**Acrolon® ZP-1**	120	**Acrolon® EG-5***	80	3	300	■	■	■	■	■	■	■	■	
Zinc Clad® R Plus	80	**Macropoxy® EG-1 Plus**	100	**Acrolon® EG-5***	80	3	260	■	■	■	■	■	■	■	■	
Zinc Clad® R Rapid Plus	80	**Macropoxy® EG-1 Rapid Plus**	100	**Acrolon® EG-5***	80	3	260	■	■	■	■	■	■	■	■	
Macropoxy® Primer HE N	100	**Macropoxy® EG-1 VHS/Plus**	120	**Acrolon® EG-5***	80	3	300	■	■	■	■	■	■	■	■	
Zinc Clad® R Plus	80	**Macropoxy® EG-1 VHS**	100	**Acrolon® EG-5***	80	3	260	■	■	■	■	■	■	■	■	
Zinc Clad® R Plus	80	**Macropoxy® Poxicolor**	120	**Macropoxy® Poxicolor**	120	3	320	■	■	■	■	■	■	■	■	

* Alternatively Acrolon® EG-4, Acrolon® 2330 or Acrolon® 2230 VHS

TABLE 1C
SELECTION OF COATING SYSTEMS ON STEEL FOR CONDITIONS UP TO C5 VERY HIGH

COATING SYSTEMS FOR CORROSION PROTECTION OF STEEL STRUCTURES IN VARIOUS ATMOSPHERIC CONDITIONS ACCORDING TO ISO 12944-5:2020. SURFACE PREPARATION: SA 2½ (ISO 12944-4:2018)

Primer		Intermediate coat		Top coat		Total system		Corrosivity category								
								C3	C4				C5			
Product name	NDFT (µm)	Product name	NDFT (µm)	Product name	NDFT (µm)	Number of coats	NDFT (µm)	very high	low	medium	high	very high	low	medium	high	very high
Zinc Clad® 2204 VHS	140	**Zinc Clad® 2204 VHS**	140	**Acrolon® EG-5***	80	3	360									
Zinc Clad® R Plus	80	**Macropoxy® EG-1 VHS/Plus**	160	**Acrolon® EG-5***	80	3	320									
Zinc Clad® R Rapid Plus	80	**Macropoxy® EG-1 Rapid Plus**	2x80	**Acrolon® EG-5***	80	4	320									

* Alternatively Acrolon® EG-4, Acrolon® 2330 or Acrolon® 2230 VHS

TABLE 2
SELECTION OF COATING SYSTEMS ON HOT-DIP GALVANIZED STEEL

DUPLEX SYSTEMS FOR CORROSION PROTECTION OF STEEL STRUCTURES IN VARIOUS ATMOSPHERIC CONDITIONS ACCORDING TO ISO 12944-5:2020. HOT-DIP GALVANIZED STEEL ACCORDING TO ISO 1461

Surface preparation	Primer		Top coat		Total system		Corrosivity category													
							C2				C3				C4				C5			
	Product name	NDFT (µm)	Product name	NDFT (µm)	Number of coats	NDFT (µm)	low	medium	high	very high	low	medium	high	very high	low	medium	high	very high	low	medium	high	very high
Sweep-blasting	**Acrolon® 2330**	80			1	80	■	■	■													
Sweep-blasting	**Kem-Kromik™ 6630 High Solid**	80	**Kem-Kromik™ 6630 High Solid**	80	2	160	■	■	■	■	■	■	■		■	■			■			
Sweep-blasting	**Acrolon® EG-120**	120			1	120	■	■	■	■	■	■	■		■	■			■			
Sweep-blasting	**Kem-Kromik™ 6630 High Solid**	100	**Kem-Kromik™ 6630 High Solid**	100	2	200	■	■	■	■	■	■	■	■	■	■	■		■	■		
Sweep-blasting	**Macropoxy® EG-1 Plus**	80	**Acrolon® EG-5***	80	2	160	■	■	■	■	■	■	■	■	■	■	■		■	■		
Sweep-blasting	**Macropoxy® 450 Rapid**	120	**Acrolon® EG-5***	80	2	200	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Sweep-blasting	**Macropoxy® EG-1 Plus**	120	**Acrolon® EG-5***	80	2	200	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Sweep-blasting	**Macropoxy® EG-1 VHS**	120	**Acrolon® EG-5***	80	2	200	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Sweep-blasting	**Macropoxy® Poxicolor**	120	**Macropoxy® Poxicolor**	120	2	240	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Sweep-blasting	**Macropoxy® EG-1 VHS**	160	**Acrolon® EG-5***	80	2	240	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Sweep-blasting	**Macropoxy® EG-1 Plus**	160	**Acrolon® EG-5***	80	2	240	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Surface-active, aqueous cleaning of galvanized steel (1)																						
Clean with Cleaner Wash (1)	**Kem-Kromik™ 6630 High Solid**	80	**Kem-Kromik™ 6630 High Solid**	80	2	160	■	■	■	■	■	■	■									
Clean with Cleaner Wash (1)	**Acrolon® EG-120**	120			1	120	■	■	■	■	■	■	■		■	■						
Clean with Cleaner Wash (1)	**Macropoxy® EG-1 Plus**	80	**Acrolon® EG-5***	80	2	160	■	■	■	■	■	■	■	■	■	■	■					

* Alternatively Acrolon® EG-4, Acrolon® 2330 or Acrolon® 2230 VHS
(1) Preparation of the surface: Thoroughly clean and degrease galvanized steel surfaces by using an surface-active, aqueous cleaning agent e.g. Cleaner Wash (exposure time approx. 10 min). Wash the cleaned surfaces carefully and thoroughly with clear water. All adhesion-reducing layers must be removed. The surface must be free from oil, grease, dirt and corrosion products.

TABLE 3
SELECTION OF COATING SYSTEMS FOR ALUMINIUM AND STAINLESS STEEL

SYSTEMS FOR ALUMINUM AND STAINLESS STEEL
Coating systems for aluminum and stainless steel are not regulated in ISO 12944.
The coating systems and tests are based on ISO 12944-5 and 12944-6.
The durability is based on ISO 12944-1 and ISO 12944-2.
Other typical tests for these substrates were not carried out.

Surface preparation	Primer		Intermediate coat		Top coat		Total system		Corrosivity category															
									C2				C3				C4				C5			
	Product name	NDFT (µm)	Product name	NDFT (µm)	Product name	NDFT (µm)	Number of coats	NDFT (µm)	low	medium	high	very high	low	medium	high	very high	low	medium	high	very high	low	medium	high	very high
Degreasing	**Macropoxy® EG-1 Plus**	80			**Acrolon® EG-5***	80	2	160																
Sweep-blasting	**Macropoxy® EG-1 Plus**	120			**Acrolon® EG-5***	80	2	200																

TABLE 4
SELECTION OF COATING SYSTEMS FOR THERMAL-SPRAYED ZINC COATINGS

SYSTEMS ON THERMAL-SPRAYED ZINC COATINGS ACCORDING ISO 12944-5: 2020 AND ISO 2063: 2019

Sealer		Intermediate coat		Top coat		Total system		Corrosivity category															
								C2				C3				C4				C5			
Product name	NDFT (µm)	Product name	NDFT (µm)	Product name	NDFT (µm)	Number of coats	NDFT (µm)	low	medium	high	very high	low	medium	high	very high	low	medium	high	very high	low	medium	high	very high
Macropoxy® EG-1 Plus + 20% Thinner EG	~ 20	**Macropoxy® EG-1 Plus**	120	**Acrolon® EG-5***	80	2	200																
Macropoxy® EG-1 Plus + 20% Thinner EG	~ 20	**Macropoxy® EG-1 Plus**	160	**Acrolon® EG-5***	80	2	240																

TABLE 5
SELECTION OF COATING SYSTEMS FOR REFURBISHMENT OF OLD COATINGS

COATING SYSTEMS FOR MAINTENANCE OF STEEL CONSTRUCTIONS IN ATMOSPHERIC CONDITIONS

Surface preparation partially	Primer		Intermediate coat		Top coat		Total system		Corrosivity category															
									C2				C3				C4				C5			
	Product name	NDFT (µm)	Product name	NDFT (µm)	Product name	NDFT (µm)	Number of coats	NDFT (µm)	low	medium	high	very high	low	medium	high	very high	low	medium	high	very high	low	medium	high	very high
P St 3	**Kem-Kromik™ Aktivprimer Rapid**	80			**Kem-Kromik™ Steel Protect VHS Rapid**	80	2	160	■	■	■													
P St 3	**Kem-Kromik™ Aktivprimer Rapid**	80			**Kem-Kromik™ CorroTop**	80	2	160	■	■	■													
P St 3	**Kem-Kromik™ Aktivprimer Rapid**	80	**Kem-Kromik™ Aktivprimer Rapid**	80	**Kem-Kromik™ 6630 High Solid**	80	3	240	■	■	■	■	■	■			■							
P St 2	**Kem-Kromik™ 6630 Primer**	80	**Kem-Kromik™ 6630 High Solid*6**	80	**Kem-Kromik™ 6630 High Solid**	80	3	240	■	■	■	■	■	■	■		■	■			■			
P St 2	**Macropoxy® Primer HE N**	140			**Acrolon® PUR Color Plus**	80	2	220	■	■	■	■	■	■	■		■	■			■			
P St 2	**Macropoxy® Primer HE N**	140			**Acrolon® EG-5***	80	2	220	■	■	■	■	■	■	■		■	■			■			
P St 3	**Macropoxy® Primer HE N**	100	**Macropoxy® EG-1 VHS/Plus**	80	**Acrolon® EG-5***	80	3	260	■	■	■	■	■	■	■	■	■	■	■		■	■		
P Ma	**Macropoxy® Primer HE N**	100	**Macropoxy® EG-1 VHS/Plus**	140	**Acrolon® EG-5***	80	3	320	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
P Sa 2½	**Macropoxy® Primer HE N**	80	**Macropoxy® EG-1 VHS/Plus**	140	**Acrolon® EG-5***	80	3	300	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
P Sa 2½	**Macropoxy® EG Phosphate N**	80	**Macropoxy® EG-1 Plus**	140	**Acrolon® EG-5***	80	3	300	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	

* Alternatively Acrolon® EG-4, Acrolon® 2330 or Acrolon® 2230 VHS

COATING SYSTEMS FOR THE REFURBISHMENT OF STEEL CONSTRUCTIONS IN ATMOSPHERIC CONDITIONS
SURFACE PREPARATION: ULTRA HIGH-PRESSURE WATER JETTING ACCORDING TO ISO 8501-4: 2021

Surface preparation	Primer		Intermediate coat		Top coat		Total system		Corrosivity category															
									C2				C3				C4				C5			
	Product name	NDFT (µm)	Product name	NDFT (µm)	Product name	NDFT (µm)	Number of coats	NDFT (µm)	low	medium	high	very high	low	medium	high	very high	low	medium	high	very high	low	medium	high	very high
Wa 2; Flash rust M	**Macropoxy® Primer HE N**	100	**Macropoxy® EG-1 Plus**	80	**Acrolon® EG-5/ Acrolon® 2330**	80	3	260	■	■	■	■	■	■	■	■	■	■	■		■	■		

TABLE 6
PRODUCT FEATURES OF OUR PRIMERS

Primer	Density (kg/l)	Volume solids Vol. (%)	Volume solids Wt (%)	Dry film thickness (µm)	Theoretical consumption (kg/m²)	Minimum application temperature	Waiting time until overcoating [1] at 10°C	Waiting time until overcoating [1] at 20°C	Kem-Kromik™ 6630 High Solid/EG	Kem-Kromik™ Steel Protect VHS Rapid	Kem-Kromik™ CorroTop / EG	Macropoxy® EG-1 VHS / EG-1 VHS N	Acrolon® ZP-1	Macropoxy® EG-1 Plus/Rapid Plus	Acrolon® EG-4 / EG-5	Acrolon® EG-5 Clearcoat	Acrolon® PUR Color Plus	Acrolon® 2230 VHS	Acrolon® EG-120	Acrolon® 2330	Macropoxy® Poxicolor
									Suitable intermediate and top coats												
Kem-Kromik™ 6630 Primer 1-pack oxidative drying primer for manually de-rusted surfaces and well adhering old coatings systems	1.5	62	79	80	0.195	+ 5°C	48 hrs	24 hrs	●	●											
Kem-Kromik™ Aktivprimer Rapid 1-pack primer for manually de-rusted surfaces, on galvanised, stainless steel and aluminium	1.6	60	78	80	0.215	+ 5°C	48 hrs	24 hrs	●	●	●										
Macropoxy® EG Phosphate N 2-pack high-solid epoxy zinc phosphate primer, acc. to TL/TP-KOR-Stahlbauten, Blatt 87	1.6	62	80	80-120	0.205-0.310	+ 5°C	7 hrs	3.5 hrs				●	●	●	●	●		●	●	●	
Macropoxy® EG Phosphate Rapid 2-pack high-solid epoxy zinc phosphate primer, acc. to TL/TP-KOR-Stahlbauten, Blatt 97	1.6	57	79	80	0.225	0°C	4 hrs	1.5 hrs				●	●	●	●	●		●	●	●	
Zinc Clad® R Plus 2-pack low-solvent epoxy zinc-rich primer, acc. to TL/TP-KOR-Stahlbauten, Blatt 87, suitable as welding primer and for SLV joints	2.3	71	89	60-80	0.194-0.259	+ 5°C	2.5 hrs	2 hrs				●	●	●					●		●
Zinc Clad® R Rapid Plus 2-pack low-solvent epoxy zinc-rich primer, acc. to TL/TP-KOR-Stahlbauten, Blatt 97	2.3	69	88	60-80	0.200-0.267	0°C	0.75 hrs	0.5 hrs				●	●	●					●		
Acrolon® ZP Primer 2-pack fast-curing polyurethane primer with zinc phosphate	1.5	62	78	80	0.195	0°C[3]	3 hrs	2 hrs					●		●		●		●	●	
Zinc Clad® 2204 VHS Very low-solvent 2-pack epoxy zinc dust primer with micaceous iron oxide	2.05	77	89	80-200	0.210-0.525	+ 10°C	12 hrs	6 hrs							●			●		●	
Macropoxy® Primer HE N 2-pack low-solvent, surface-tolerant epoxy primer	1.5	71	83	80-100	0.169-0.211	+ 5°C	10 hrs	6 hrs				●	●	●	●	●	●	●	●	●	
Macropoxy® 450 Rapid 2-pack fast-curing epoxy resin primer and intermediate coat with zinc phosphate for steel or galvanised steel	1.6	68	83	80-120	0.210-0.280	0°C	9 hrs	6 hrs				●		●	●	●	●	●	●	●	●

[1] The drying times depend on the film thickness and refer to 80 – 100 µm dry film thickness

TABLE 7
PRODUCT FEATURES OF OUR INTERMEDIATE COATS

Intermediate coat	Density (kg/l)	Volume solids Vol. (%)	Volume solids Wt (%)	Dry film thickness (µm)	Theoretical consumption (kg/m²)	Minimum application temperature	Waiting time until overcoating [1] at 10°C	Waiting time until overcoating [1] at 20°C	Suitable coatings systems: Macropoxy® EG-1 VHS / EG-1 VHS N	Macropoxy® EG-1 Plus/Rapid Plus	Acrolon® EG-4 / EG-5	Acrolon® 2230 VHS	Acrolon® EG-120	Acrolon® 2330
Macropoxy® EG-1 Plus 2-pack low-solvent, micaceous iron oxide epoxy intermediate coat for primed steel or directly on galvanised steel, acc. to TL/TP-KOR-Stahlbauten, Blatt 87	1.5 1.4[2]	69 70[2]	81 81[2]	80-160 80-200[2]	0.174-0.348 0.160-0.400[2]	+ 5°C	8 hrs	4 hrs		●	●	●	●	●
Macropoxy® EG-1 Rapid Plus 2-pack low-solvent, micaceous iron oxide epoxy intermediate coat for primed steel or directly on galvanised steel, acc. to TL/TP-KOR-Stahlbauten, Blatt 97	1.5 1.4[2]	66 70[2]	80 81[2]	80-160	0.182-0.363 0.160-0.320[2]	0°C	5 hrs	2.5 hrs		●	●	●	●	●
Macropoxy® EG-1 VHS 2-pack very high solid, micaceous iron oxide epoxy intermediate coat for primed steel or directly on galvanised steel, acc. to TL/TP-KOR-Stahlbauten, Blatt 94	1.8	78	90	80-160	0.185-0.370	+ 5°C	13 hrs	5 hrs	●	●	●	●	●	●
Macropoxy® EG-1 VHS N 2-pack very high solid, micaceous iron oxide epoxy intermediate coat for primed steel or directly on galvanised steel, acc. to TL/TP-KOR-Stahlbauten, Blatt 94	1.7	77	88	80-120	0.177-0.265	+ 5°C	7 hrs	10 hrs	●	●	●	●	●	●
Acrolon® ZP-1 2-pack polyurethane micaceous iron oxide intermediate coat for primed steel according to TL/TP-KOR-Stahlbauten, Blatt 87/97	1.6 1.5[2]	60 63[2]	77 79[2]	80-120	0.215-0.320 0.190-0.290[2]	+ 5°C	3.5 hrs	3 hrs			●	●		●

[1] The drying times depend on the film thickness and refer to 80 – 100 µm dry film thickness
[2] Data based on micaceous iron oxide free color shades

TABLE 8
PRODUCT FEATURES OF OUR TOP COATS

Top coats	Density (kg/l)	Volume solids Vol. (%)	Volume solids Wt (%)	Dry film thickness (µm)	Theoretical consumption (kg/m^2)	Minimum application temperature	Waiting time between overcoating [1] at 10°C	Waiting time between overcoating [1] at 20°C	Suitable primer in terms of refurbishment: Kem-Kromik™ Aktivprimer Rapid	Kem-Kromik™ 6630 High Solid/EG	Kem-Kromik™ 6630 Primer	Macropoxy® Primer HE N	Macropoxy® EG Phosphate (Sa 2½)
Kem-Kromik™ 6630 High Solid 1-pack oxidative drying high-build coating in RAL or DB colour shades	1.4 1.5[2]	62 61[2]	77 77[2]	80 - 160	0.180-0.360 0.195-0.390[2]	+ 5°C	36 hrs	24 hrs	●	●	●	●	
Acrolon® EG-4 2-pack acrylic polyurethane top coat containing micaceous iron oxide pigments (MIO) in DB colour shades4), acc. to TL/TP-KOR-Stahlbauten, Blatt 87	1.4	55	70	60 - 100	0.153-0.256	+ 5°C	16 hrs 12 hrs[3]	12 hrs 4 hrs[3]				●	●
Acrolon® EG-5 2-pack acrylic polyurethane top coat in RAL colour shades, acc. to TL/TP-KORStahlbauten, Blatt 87	1.3	61	74	60 - 100	0.130-0.217	+ 5°C	18 hrs 13 hrs[3]	14 hrs 5 hrs[3]				●	●
Acrolon® EG-120 2-pack very high solid polyurethane top coat in RAL and DB colour shades	1.3 1.6[2]	70 70[2]	80 83[2]	60 - 120	0.149-0.223 0.183-0.274[2]	+ 5°C	20 hrs	11 hrs				●	●
Macropoxy® EP Color 2-pack primer and top coat in RAL colour shades	1.6	62	80	80	0.205	+ 5°C	7 hrs	3.5 hrs				●	●
Acrolon® PUR Color Plus 2-pack primer and top coat based on polyurethane with anti-corrosion pigments, in silk-att RAL colour shades	1.2	66	74	80 - 180	0.144-0.324	+ 5°C	6-9 hrs	4-5 hrs				●	●
Kem-Kromik™ Steel Protect VHS Rapid 1-pack synthetic resin-based primer and top coat	1.55	65	81	60 - 160	0.143-0.380	+ 5°C	12 hrs	5 hrs	●	●	●	●	
Kem-Kromik™ CorroTop/EG 1-pack alkyd resin top coat with smooth, glossy surface in RAL and DB colour shades	1.3	56	73	60 - 120	0.140-0.280 0.150-0.300[2]	+ 5°C	24 hrs	12 hrs	●	●	●	●	
Acrolon® 2230 VHS 2-pack very high solid, acrylic polyurethane top coat in RAL colour shades with high weather and colour stability	1.4	70	82	60 - 100	0.120-0.200	+ 5°C	14 hrs	5 hrs				●	
Acrolon® 2330 2-pack acrylic polyurethane top coat in RAL colour shades with increased weathering and colour stability	1.3	56	69	50 - 80	0.115-0.185	+ 5°C	18 hrs	8 hrs				●	●
Macropoxy® Poxicolor Very low-solvent, micaceous iron oxide free, 2-pack primer, intermediate and top coat based on epoxy resin combination binders, acc. to TL/TP-KOR-Stahlbauten, Blatt 81	1.6	76	87	80 - 120	0.196-0.250	+ 5°C	12 hrs	6 hrs				●	

[1] The drying times depend on the film thickness and refer to 80 – 100 µm dry film thickness
[2] Data based on micaceous iron oxide colours
[3] Accelerated with Acrolon® PUR Accelerator

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- Airports
- Railway stations

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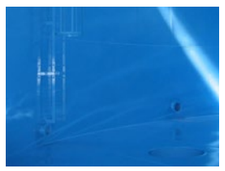
- Port facilities
- Flood protection
- Steel sheet piles

TANK PROTECTION



- Tanks
- Silos and vessels
- Pipeworks
- Secondary containment

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- Mineral oil industry
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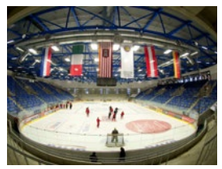
FIRE PROTECTION

FOR STEEL



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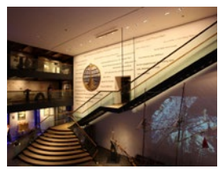

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