



thyssenkrupp

patinax[®]

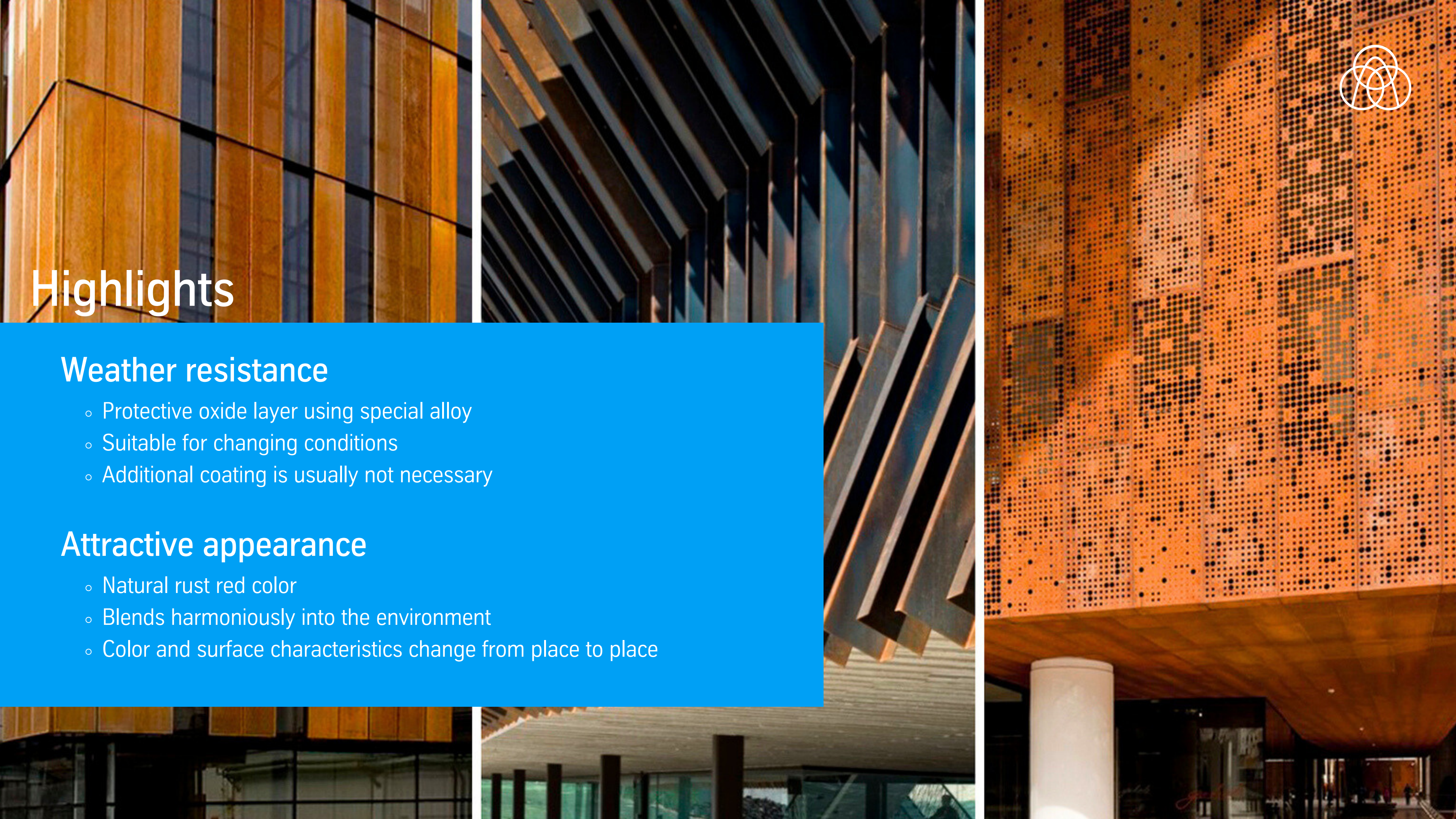
Atmospheric corrosion resistant
steel with a unique appearance



Patinax® weatherproof steel from thyssenkrupp offers a good finish and withstands many conditions. A firmly adhered rust-red patina protects the steel from corrosion and gives the surface an attractive reddish-brown color.

For exterior applications, patinax® offers some advantages that conventional construction steel cannot offer. Due to its special alloy, our steel is particularly weather-resistant and no additional coating is usually necessary. Thanks to its beautiful rust red color, patinax® blends harmoniously into its surroundings.





Highlights

Weather resistance

- Protective oxide layer using special alloy
- Suitable for changing conditions
- Additional coating is usually not necessary

Attractive appearance

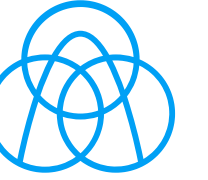
- Natural rust red color
- Blends harmoniously into the environment
- Color and surface characteristics change from place to place



Protected from wind and weather

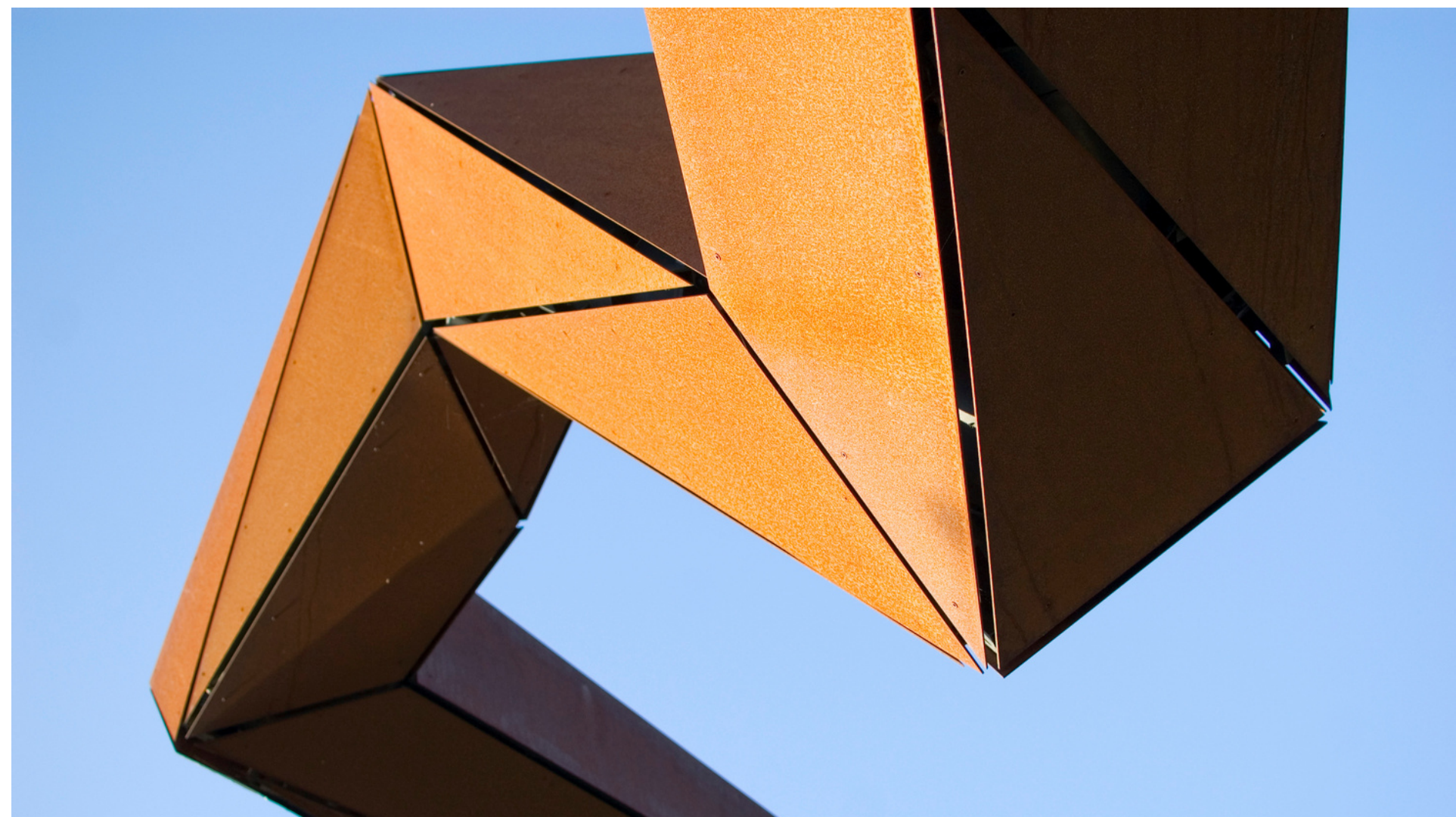
Our Patinax® steel gets its weather resistance properties from the alloying elements copper, chromium, nickel and phosphorus. Through the chemical interaction of these elements, a protective layer forms on the surface of the steel within one to two years, provided the steel faces alternating weather conditions during that time.

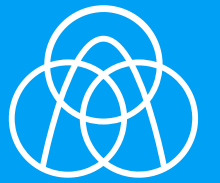
This purposefully created oxide layer, composed of low-solubility sulfates or phosphates, acts as a protective shield for the steel beneath. After this first period of oxidation, the surface becomes practically impermeable to oxygen.



A uniquely attractive exterior

At the end of the process, which lasts approximately three years, the atmospheric corrosion resistant steel with a unique appearance will show its typical reddish brown color. The exact coloration and surface characteristics differ depending on the environment in which the steel is used. In the city, in the countryside or by the sea, each place has its peculiarities. Patinax® reacts to environmental conditions and blends with its environment naturally. Due to its unique appearance, this steel is especially suitable for artistic architecture projects, such as steel sculptures or exterior facades. Other landscape structures, such as bridges, can also benefit from the use of patinax®, taking advantage of its high corrosion resistance and attractive coloring.





Easy application, most of the time without coating

When using Patinax® for exterior applications, customers most often do not have to pay for an additional coating. Thanks to its natural oxide layer, our weathering steel is almost always used without protection. Even so, you have to check if the place meets the requirements. If the environment is particularly contaminated or particularly humid, we strongly recommend additional surface protection.

You can also consider using patinax® 355P in these circumstances. This grade of steel has a higher phosphorus content than Patinax 355® and therefore even greater corrosion resistance. Both grades are available as cut-to-size sheet metal or strap/coil.

Patinax® can be formed, machined, flame-cut, welded, screwed and riveted. In particular, Patinax® 355 can be applied and processed in the same way as comparable carbon structural steel. However, when it comes to weather resistance, rust behavior and appearance, this thyssenkrupp weathering steel is superior.



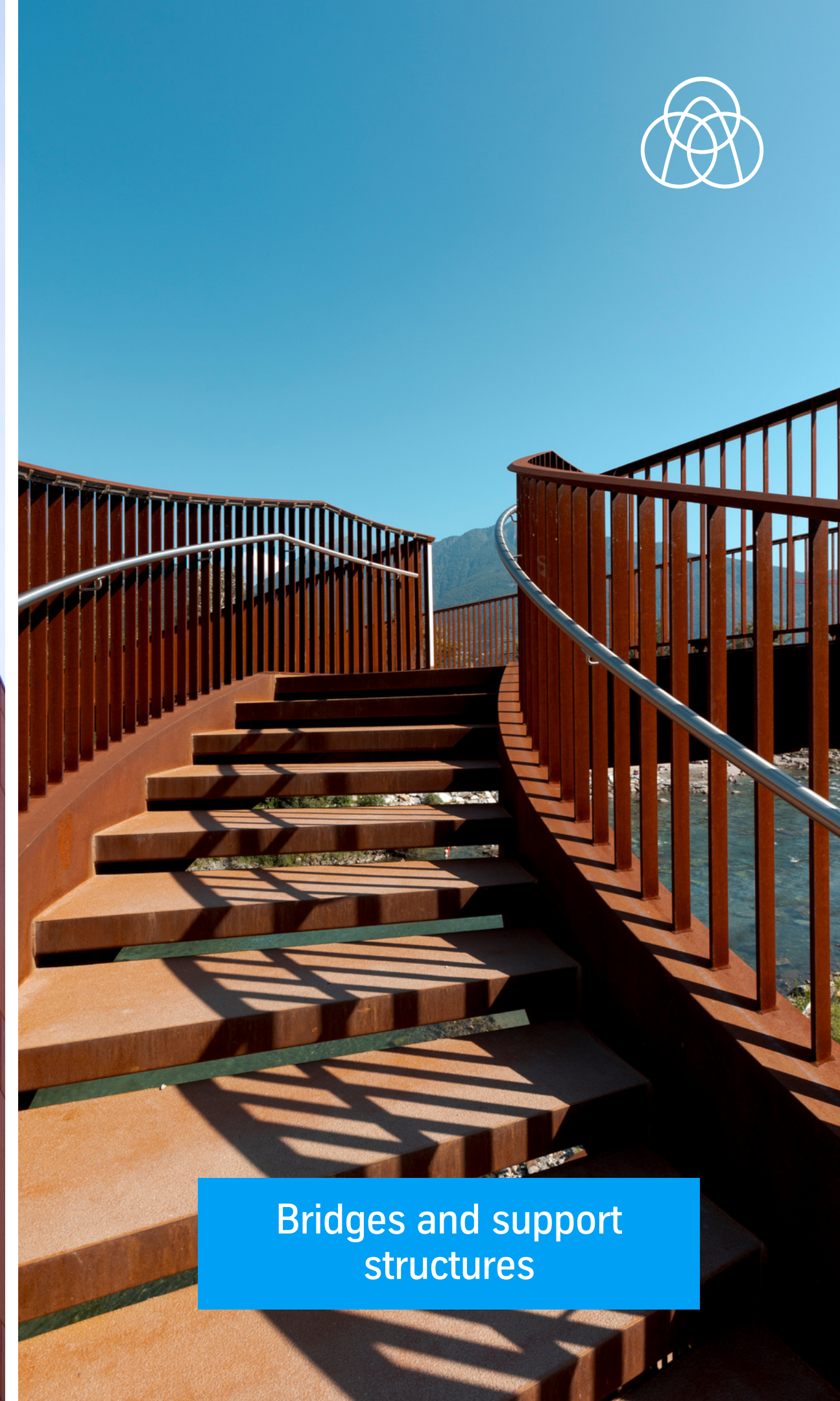
Where could we see weathering steel?



Sculptures

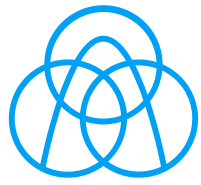


Exterior facades



Bridges and support structures

Technical characteristics



Delivery status: +AR or +N

Chemical									
Mass fractions in casting analysis	C [%] max.	And [%]	Mg [%]	P [%]	S [%] max.	Cr [%]	With [%]	IN [%]	Ni [%] max.
Steel type									
● Patinax® 355	0.16	0.30 - 0.50	0.80 - 1.25	≤ 0.030	0.030	0.40 - 0.65	0.25 - 0.40	0.02 - 0.10	0.40
● Patinax® 355P	0.12	0.25 - 0.75	0.20 - 0.50	0.07 - 0.15	0.030	0.50 - 1.25	0.25 - 0.55	-	0.65

● Hot rolled strip, cut to length sheet, quarter sheet
To obtain a fine-grained structure, a sufficient amount of nitrogen-absorbing elements is added, for example ≥ 0.02% Al.

Mechanical properties - Test direction transverse to the rolling direction at room temperature									
Steel type	Elastic limit		Tensile strength		Minimum elongation				Notch impact energy
	R _{eH} [MPa]		R _m [MPa]		A [%] L ₀ = 80 mm				KV [J] at a test temperature of -20° C
	Thickness		Thickness		Thickness				
	≤16.0 mm	>16.0 mm	<3.0 mm	≥3.0 mm	>1.5 ≤ 2.0mm	>2.0 ≤ 2.5mm	>2.5 < 3.0	L ₀ = 5.65 √ S ₀ ≥3.0 mm	
	mm		mm		mm				
● Patinax® 355	≥ 355	≥ 345	510 - 680	470 - 630	14	15	16	20	≥ 27
● Patinax® 355P	≥ 355		510 - 680	470 - 630	14	15	16	20	≥ 27

● Hot rolled strip, cut to length sheet, quarter sheet

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