

Infrastructure

Trusted protective coatings



World-leading coatings supplier

Hempel was founded in 1915 and is today one of the world's leading manufacturers and suppliers of coating solutions. Our advanced protective and decorative coatings can be found on millions of surfaces around the globe.

From the world's longest bridges and tallest skyscrapers to airports, sports stadia and civil structures our coatings protect your assets against corrosion in many different and challenging environments.

Our history is rooted in protective coatings for the extreme conditions experienced in the Marine, Decorative and Protective industries, so you can be assured that we offer trusted technology, expert technical service and reliability.

With our vast expertise and knowledge, you know that by choosing Hempel, you are choosing a brand you can trust.



Slavia Praha Football Stadium,
Czech Republic



Global service

We want to give you the right products on site, on time, every time. With the support of our 28 manufacturing plants and over 150 stock points worldwide, we offer a flexible service to all our customers. A service that we believe is second to none.

Proven performance

Our range of high performance protective coatings offer advanced protection and optimised application for a durable finish that looks good for longer, in even the most challenging climates. With a proven track record, we are a trusted protective coatings partner for our customers in the construction industry around the world.

Professional support

Our customers know that specifying the right products is crucial when designing structures, to ensure corrosion and fire protection, good appearance and minimum maintenance. Our multinational, globally based teams are uniquely positioned to ensure the smooth running of your project. From planning to completion, specification to application, we have key people to support you both off and on site.

Innovative solutions

With 15 global research and development facilities, we work locally with you to provide the right solution for your project. Our research and development teams are committed to continuous development of innovative and effective speciality coatings to give you durable protection whilst ensuring environmental responsibilities are met.

Tailored coatings solutions

Our range of high-performance protective and decorative coatings are designed to protect buildings in a number of ways.

Projects are analysed for specific requirements and our experienced advisors deliver systems that will protect against various elements, from changing temperatures and humidity, to the aging of structures and the threat of fire.

Our coatings incorporate advanced technologies designed to improve their effectiveness and longevity and can be specified for use on new buildings or as part of an on-going maintenance programme.

We provide advanced protection for all surfaces and substrates from the ground up.

Our range of coatings are combined into systems that address the specific needs of your project:

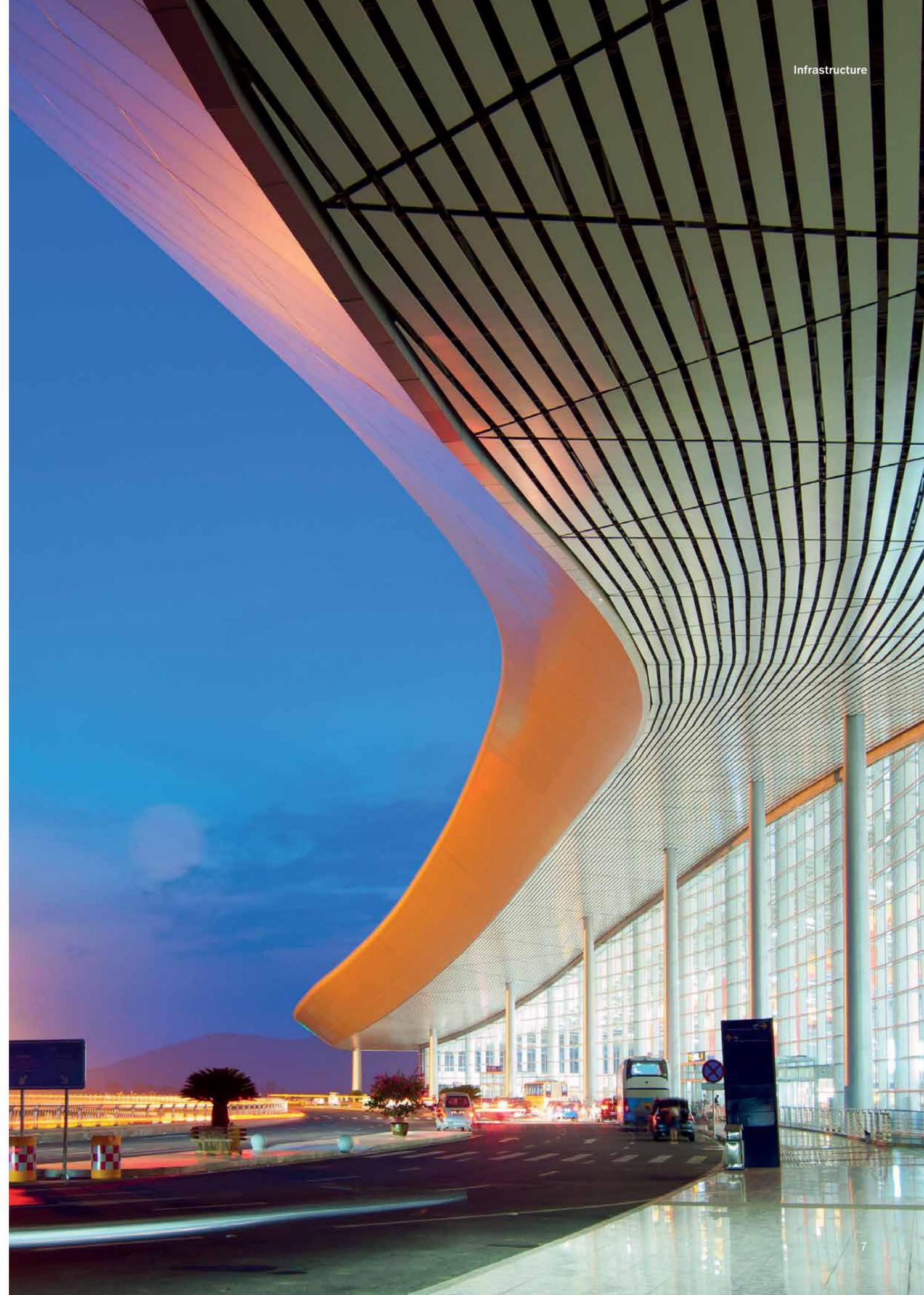
- abrasion and corrosion resistance
- weather resistance
- good gloss and colour retention
- easy to clean and maintain
- fire protection properties

And, our coatings meet the most stringent global standards, so you can specify Hempel with confidence.

Technical support

At Hempel we have more than 600 FROSIO/NACE certified coating advisors around the world ensuring our customers receive the exact application advice for their project and conditions.

Experienced and dedicated, our technical service team is available to give you off and on site advice at every stage of your project, from initial specifications to final application. Globally renowned, they offer expert advice to ensure our solutions last as long as expected and that every application procedure is as fast and efficient as possible.



Effective solutions

With over 100 years of experience in the infrastructure industry, we are able to identify the very specific needs of any site, and can provide effective solutions and services throughout every stage of your project.

We're at the forefront of structural protection technologies, particularly in the fields of fire protection and anti-corrosion coatings.

We are able to match the high volume, stringent quality and advanced delivery demands of the industry on a global level and our local teams work with you to develop innovative solutions that meet your coating application challenges.

Colour

Colour plays a major role in the beauty of any structure and is an essential part of your building's design. We are able to supply coatings in any colour or finish, matt or gloss. We also have a range of easy-clean finishes for high traffic areas to maintain the aesthetics of your buildings.

Safety

A key priority for commercial buildings is to keep people safe in the event of a fire. Our fire protection products protect the integrity and strength of steel structures, helping to prevent the collapse of buildings in case of fire, whilst helping to provide time for people to evacuate. Our fire protection portfolio is flexible, offering designers and engineers the freedom to design and build structures that are more open and light, without compromise.

Whether you are considering corrosion protection of your building, improving its aesthetic quality, or health and safety standards, we have a wealth of knowledge that is readily available to you. We understand that high-quality protective coatings will go a long way to keep your physical and financial assets safer, for longer.

We provide you with a complete service, from specification to application, supporting your projects with our global network of experts and strategically located manufacturing and logistic centres.

Avantguard®

Superior corrosion protection

Here at Hempel, we strive to develop coatings that are ever stronger to protect our customers' assets around the world against the corrosive effects of industry and nature alike.

Avantguard is our innovative, award winning¹ anti-corrosion technology, based on activated zinc. Our patented Hempadur Avantguard coatings have been proven to deliver superior corrosion protection compared to competitor zinc rich epoxy products².

Avantguard technology uses a new combination of zinc, hollow glass spheres and a proprietary activator. This activates the zinc, increasing its protective capabilities.

Improves full systems

Strengthening the system at its core, Avantguard gives the full coating system enhanced corrosion performance.

Redefines protection

Avantguard shows superior anti-corrosive performance in salt spray tests (ISO 12944-6)², as well as reduced rust creep and better corrosion protection in cyclic corrosion testing (ISO 12944:2018 Part 9) and NORSOK M501 revision 6.

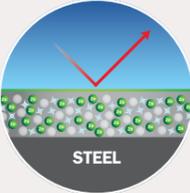
Redefines durability

Avantguard displays improved mechanical strength in the protective coating with significantly improved crack resistance. The NACE cracking test (Thermal Cycling Resistance test) and Hempel's welding test have proved that Avantguard substantially reduces cracking at both low and high DFT.

Redefines productivity

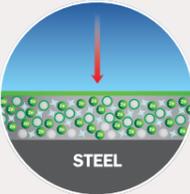
Avantguard is fast drying with best-in-class³ overcoating intervals. The products are easy to apply, even in high temperatures and humidity as shown in exposure tests. There is less rework due to cracking, as the coating is more tolerant, even with high DFTs.

These activated zinc primers reduce the effects of corrosion, offering advanced protection and increased durability for all-round performance. Unlike standard zinc epoxies, Avantguard is effective using all three methods of anti-corrosive protection.



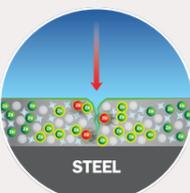
Barrier

Improved barrier properties
Avantguard displays low water permeability. The salts produced by the unique zinc activation process fill any space within the film, sealing it and enhancing the barrier properties of the coating.



Inhibitor

Inhibition effect for improved protection
The zinc salts formed contain high levels of chloride ions that are captured as they are diffused from the environment through the film. This reduces the concentration of corrosive agents that reach the steel surface.



Galvanic

Activated zinc gives excellent anti-corrosive properties
In the presence of oxygen, water and salt, zinc reacts faster than steel. This delays the corrosion process for much longer.

“Avantguard has a self-healing effect on micro cracks, which is something that we’ve never seen before. The insoluble salts which are created in the unique zinc activation process actually occupy the space left by the microcrack, further preventing the development of a more serious crack.”

Josep Palasi
Hempel Strategic Technology Director

1. Avantguard won the prestigious 2014 European Frost & Sullivan Award for New Product Innovation and NACE's MP Corrosion Innovation of the Year Award 2105.
2. This superiority has been independently proven by third party laboratory neutral salt spray tests according to ISO 9227. In this test, steel protected with Avantguard produced a lower evolution of rust creep, assessed according to ISO 12944-6, when tested up to 3x the duration for C5 high environments.
3. Avantguard's overcoating interval is a minimum of 33% faster than competitor zinc-rich epoxies when comparing product data sheets.

Hempadur Avantguard 550

Anti-corrosive performance in compliance with ISO 12944 C5 high, which is faster curing and easy to apply.

Complies with the requirements for Level 3, type II in SSPC Paint 20, 2002.

Utilises ASTM D520, type II zinc dust.

Parameters	
DFT range (min and max)	50 – 100 micron
Curing time – dry to handle (20-25°C)	1h 30min
VS%	65
VOC (g/L)	321
Pot life (20°C)	3hrs
Min. overcoating intervals with epoxy (20°C)	1h
Application equipment	Airless spray, air spray, brush

Hempadur Avantguard 750

Anti-corrosive performance in compliance with NORSOK M-501 which is faster curing, easy to apply and retains it's properties even at excessive application.

Complies with NORSOK M-501 Ed. 6 (ISO 12944:2018 Part 9) and Level 2, type II in SSPC Paint 20, 2002.

Utilises ASTM D520, type II zinc dust.

Parameters	
DFT range (min and max)	50 – 100 micron
Curing time – dry to handle (20-25°C)	1h 30min
VS%	65
VOC (g/L)	317
Pot life (20°C)	4hrs
Min. overcoating intervals with epoxy (20°C)	1h
Application equipment	Airless spray, air spray, brush

The core of fire protection

Hempacore® intumescent coatings for passive fire protection

A key consideration in the construction of any civil structure is to keep the risk of fire to a minimum, and, in the event of a fire, to protect the people during evacuation and reduce fire damage to the building. In extreme cases, steel can buckle and collapse in a matter of minutes.

We understand that you need fire protection you can trust. Our Hempacore range is designed specifically for the construction market. It can be specified with up to two hours protection of the integrity and strength of steel structures, helping to prevent the collapse of buildings in case of fire, whilst helping to provide time for people to evacuate.

Our Hempacore product range includes advanced solvent-based acrylic technology. This allows easy application with the advantage of low VOC and the ability to spray high DFT in a single coat for a fast drying finish.

In addition the Hempacore range includes waterborne coatings that comply with the latest environmental standards for green building, suitable for in shop and on site applications.

Hempacore is proven to give you consistent, durable and efficient fire protection.

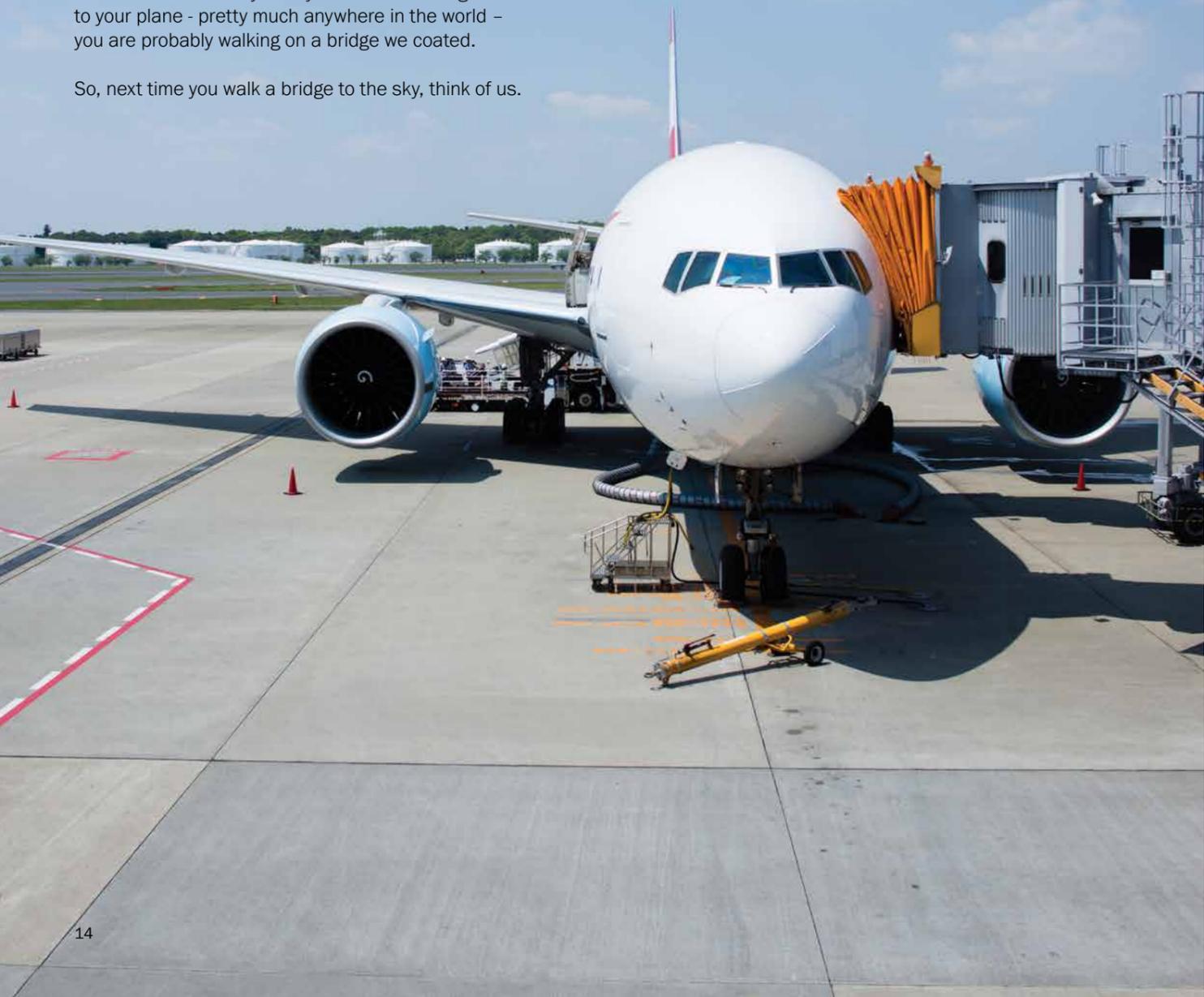
Making connections

Air bridges connecting you to the sky

When you walk across the boarding bridge from the terminal building to your aeroplane, you're more than likely walking on a structure protected from the elements by Hempel.

We are recognised as a leading supplier of coatings to many industries, but very few people know that we have been the leading coating supplier of a very particular niche market, passenger boarding bridges for airports. This means that every time you walk from the gate to your plane - pretty much anywhere in the world - you are probably walking on a bridge we coated.

So, next time you walk a bridge to the sky, think of us.



Vienna International Airport

Austria

Vienna International Airport's new Hangar No. 7 is protected against fire with the help of Hempacore. An impressive 7,000m² this new hangar is a busy travel centre.

The building contractors not only wanted to be sure of a durable protective coating that would meet fire safety regulations, but be easy to maintain and give a smart, long lasting finish. By choosing our tailored three-coat system, they also achieved fast and efficient application, allowing Hangar No. 7 to be fully operational in less time.



Products

- Hempadur Fast Dry 17410
- Hempacore One FD 43601
- Hempathane Topcoat 55210

High Speed Train Station

Vigo, Spain

The Southern Terminus at Vigo will serve the AVE high speed trains running along Galicia's Atlantic seaboard. Safety and environmental protection are key considerations in its construction.

Built on a number of levels, the terminus is underground with 180 retail outlets overhead. The customer chose Hempel to provide reliable, protective coatings solutions for the structure's 8,000m² of steel, guaranteeing long lasting protection against the corrosive elements of the weather and city centre pollution and helping to protect 1,000s of commuters in case of fire.



Products

- Epoxy Primer
- Hempacore 43600
- Hempathane HS 55810

Winning solutions

2014 World Cup Stadia, Brazil

Although the 2014 FIFA World Cup officially kicked off on 12th June 2014 when host nation Brazil played Croatia, we had been actively involved in the country's intense stadium preparation programme for the previous 3 years.

Hempel was a natural choice for this project. With our global facilities and flexible service offering, it was possible to assist our customer efficiently both in Portugal, for the initial build and in Brazil for subsequent touch up and repair work after the long crossing.

The huge metal structures for all 3 stadia were manufactured and fully coated in Portugal, before being shipped to Brazil and erected on site. Our systems were chosen to resist the corrosive salty ocean crossing, the hard knocks that happen during transportation and protect against the Brazilian climate for many years to come.

With a reputation among steel constructors as an extremely reliable product that combines excellent mechanical resistance with high productivity, Hempadur Fast Dry 15560 was integral to this durable protective coating system.

Arena Fonte Nova in Salvador da Bahia, with a capacity for 55,000 spectators, and coated with 40,000 litres of Hempel, was awarded the 2013 European Steel Design Award by ECCS (European Convention for Construction Steelwork).

Part of the legacy of Brazil 2014, these three stadia continue to play an important role as major sporting venues and our coatings systems continue to protect a combined 6,220 tonnes of steel that form their roofs.

Products

- Hempadur Zinc 17360
- Hempadur Fast Dry 15560
- Hempathane HS 55610



Stadiums including:
Arena Fonte Nova Stadium
Castelao Stadium
Arena do Gremio Stadium



Photo: Fábio Lima

2014 Winter Olympics

Sochi, Russia

The vision of Sochi 2014 was to unite the resources of the city, the region and the Russian nation to develop greatly needed sports venues, and necessary infrastructure, in a sustainable, inclusive, and environmentally responsible manner.

Before the Games, Russian Railways modernised its transport infrastructure with an impressive 12 mountain tunnels, 71 bridges and flyovers, new passenger stations and the Adler-Alpika combined road and rail connection, a huge feat of engineering covering some 116km.

The climate pattern in Sochi is complex, with high humidity and rapid, extreme temperature changes, overlaid with salty, marine conditions leading to significant condensation on metal surfaces.



Using over 1 million litres of paint, our tailored coatings systems were the ideal solution to address the range of coatings needs. We even had a solution to give the Bob Sleigh Run long lasting protection against the elements.

Beijing Airport T3

China

Built to evoke the iconic Chinese dragon, Beijing Capital International Airport Terminals T3A & T3B were the auxiliary projects of Beijing Olympic Games 2008 and are now a key part of this busy international airport.

Over 8,000 tonnes of new steel give shape to the structure and this is coated with a tailored, high weather resistant system to protect against hot, humid summers and cold, dry winters.



Products

- Hempadur Zinc 17360
- Hempadur Mastic 45880
- Hempaxane Classic 55000

Selected references

Project	Location	Products	Year
Audi Plant, San Jose Chiapa	Puebla, Mexico	Hempalin Enamel 52140, Hempadur Fast Dry 17410, Hempacore One 43600, Hempacore One FD 43601, Hempadur Mastic 45881	2015
Vigo AVE Railway Station	Vigo, Spain	Hempacore One 43600	2015
VW Plant	Kaluga, Russia	Speed-Dry Alkyd 4314 (primer), Speed-Dry Alkyd 4314 (topcoat)	2015
Adler Railway Station	Sochi, Russia	Hempathane HS 55610	2014
Arena do Grêmio	Porto Alegre, Brazil	Hempadur Zinc 17360, Hempadur Fast Dry 15560, Hempathane HS 55610	2014
Domestic Terminal, Adnan Menderes Airport	Izmir, Turkey	Hempadur Fast Dry 17410, Hempadur Fast Dry 45410	2014
Itaipava Arena Fonte Nova	Salvador, Brazil	Hempadur Zinc 17360, Hempadur Fast Dry 15560, Hempathane HS 55610	2014
MetroBus Buenos Aires	Buenos Aires, Argentina	Hempadur Zinc 17360, Hempathane HS 55610	2014
Singapore University of Technology & Design (SUTD)	Singapore	Hempadur Mastic 45881, Hempathane Topcoat 55210	2014
Torun Sports Hall	Torun, Poland	Hempadur Fast Dry 17410, Hempadur Mastic 45880, Hempacore FD 43601, Hempatex Hi-Build 46410	2014
Allianz Arena	Munich, Germany	Hempadur Fast Dry 17410, Hempadur Mastic 4588W, Hempathane HS 55610	2013
Olympic Bobsleigh Track	Sochi, Russia	Hempadur Mastic 45880, Hempathane Topcoat 55210	2013
Olympic Park and Train Station	Sochi, Russia	Hempadur Fast Dry 15560, Hempadur Mastic 45880, Hempathane HS 55610	2013

Project	Location	Products	Year
Shanghai Centre Shanghai, China	Shanghai, China	Hempadur Mastic 45880	2011-2014
BTS Airport	Bratislava, Slovakia	Hempadur Fast Dry 17410, Hempadur Mastic 45880, Hempathane HS 55610	2010-2011
Guangzhou Railway Station, China	Guangzhou, China	Hempadur Zinc 15360, Hempel Mastic Epoxy Paint 4588P, Hempel's Fluorocarbon Paint 559CN	2010
Chengdu Terminal 2	Chengdu, China	Hempadur Zinc 17360, Hempadur Mastic 45880, Hempel's Fluorocarbon Paint 559CN	2009-2012
Kunming New International Airport	Yunnan Province, China	Hempadur Mastic 45880, Hempadur Mastic 45880, Hempaxane Classic 55000	2009-2012
Dongguan Guild Hall	Dongguan, China	Hempadur Zinc 15360, Hempadur Mastic 45880, Hempathane Topcoat 55210	2008-2010
Fuzhou Exhibition Hall	Fujian Province, China	Hempel's Galvosil 15700, Hempel's Mastic Epoxy Paint 4588P, Hempathane Topcoat 55910	2008-2010
Arena Zenica	Zenica, Bosnia and Herzegovina	474EO Contraflam S	2007
Beijing International Airport T3	Beijing, China	Hempadur Zinc 17360, Hempadur Mastic 45880, Hempaxane Classic 55000	2004-2006
Copenhagen Opera House	Copenhagen, Denmark	Hempel's Shopprimer E 1528, Hempadur 4714, Hempathane Topcoat 55210	2003-2004
S.L.B. - Luz Stadium	Lisbon, Portugal	Hempadur Zinc 15360, Hempadur Fast Dry 15560, 55P21	2003
Guangzhou Olympic Sports Centre	Donghou, China	Hempel's Shopprimer ZS 15890, Hempadur Primer 15300, Hempatex Enamel 56360	1999-2001

About Hempel

As a world-leading supplier of trusted coating solutions, Hempel is a global company with strong values, working with customers in the protective, marine, decorative, container and yacht industries. Hempel factories, R&D centres and stock points are established in every region.

Across the globe, Hempel's coatings protect surfaces, structures and equipment. They extend asset lifetimes, reduce maintenance costs and make homes and workplaces safer and more colourful. Hempel was founded in Copenhagen, Denmark in 1915. It is proudly owned by the Hempel Foundation, which ensures a solid economic base for the Hempel Group and supports cultural, social, humanitarian and scientific purposes around the world.

Hempel A/S

Lundtoftegaardsvej 91
2800 Kgs. Lyngby
Denmark

Tel: +45 4593 3800
Email: infrastructure@hempel.com
[infrastructure.hempel.com](https://www.infrastructure.hempel.com)