

Civil structures

Global experience
and trusted solutions



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.

Tailored for civil structures

Tailored coatings solutions

Our range of high performance protective and decorative coatings are designed to protect civil structures in many ways.

Our coatings have been developed using advanced technologies to ensure they are effective, durable and retain their good looks. They can be trusted as part of your ongoing maintenance programme and can extend intervals between recoating.

We offer tailored systems to address:

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

Technical support

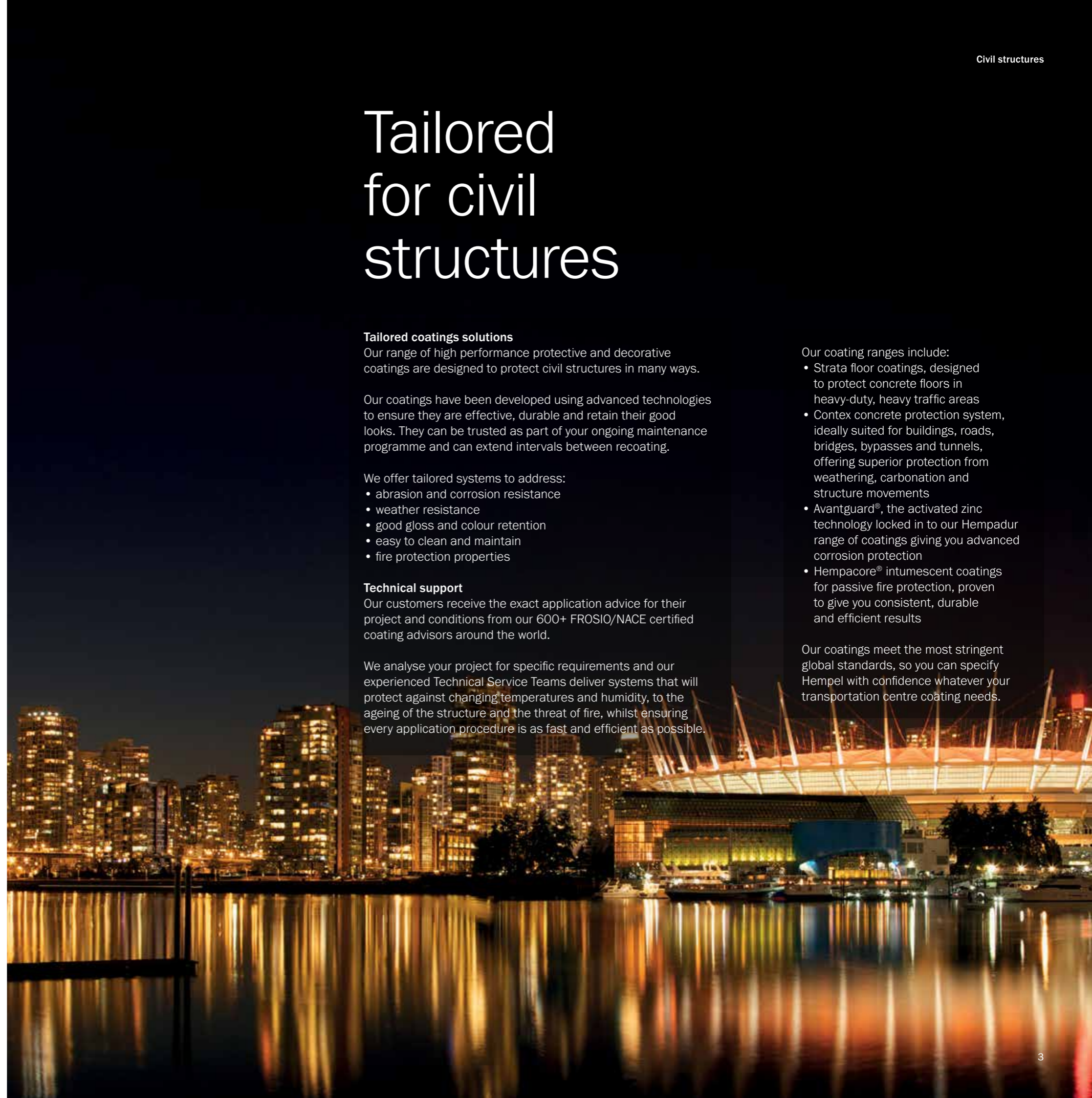
Our customers receive the exact application advice for their project and conditions from our 600+ FROSIO/NACE certified coating advisors around the world.

We analyse your project for specific requirements and our experienced Technical Service Teams deliver systems that will protect against changing temperatures and humidity, to the ageing of the structure and the threat of fire, whilst ensuring every application procedure is as fast and efficient as possible.

Our coating ranges include:

- Strata floor coatings, designed to protect concrete floors in heavy-duty, heavy traffic areas
- Contex concrete protection system, ideally suited for buildings, roads, bridges, bypasses and tunnels, offering superior protection from weathering, carbonation and structure movements
- Avantguard®, the activated zinc technology locked in to our Hempadur range of coatings giving you advanced corrosion protection
- Hempacore® intumescent coatings for passive fire protection, proven to give you consistent, durable and efficient results

Our coatings meet the most stringent global standards, so you can specify Hempel with confidence whatever your transportation centre coating needs.





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.

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

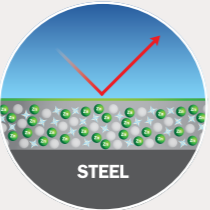
Avantguard is fast drying with best-in-class³ overcoating intervals. The products are easy to apply, even in high temperatures and humidity as shown in exposure tests. There is less rework due to cracking, as the coating is more tolerant, even with high DFTs.

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.

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.

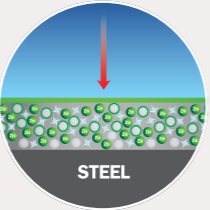
2. This superiority has been independently proven by third party laboratory neutral salt spray tests according to ISO 9227. In this test, steel protected with Avantguard produced a lower evolution of rust creep, assessed according to ISO 12944-6, when tested up to 3x the duration for C5 high environments.

3. Avantguard's overcoating interval is a minimum of 33% faster than competitor zinc-rich epoxies when comparing product data sheets.



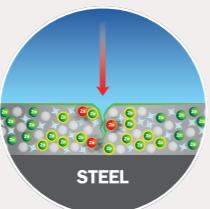
Barrier

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

Hempadur Avantguard 550

Anti-corrosive performance in compliance with ISO 12944 C5 high, which is fast 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.

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.

The Louvre Museum

Abu Dhabi, United Arab Emirates

The innovative Louvre Abu Dhabi building, designed by Pritzker Prize-winning architect Jean Nouvel, combines modern architecture and inspiration drawn from the region's traditions, the design reflects the desire to create a universal museum in which all cultures are brought together.

8,000 tonnes of steelwork that form the domed roof needed protection against the corrosive salts from the sea of the Persian Gulf and the natural climate of Saadiyat Island.

For this project our customer chose a combination of our protective coatings to ensure the most durable and aesthetic finish for this striking structure.

Products
Hempel's Galvosil 15700
Hempadur Mastic 45881
Hempathane 55910



Tornado Tower, Doha, Qatar

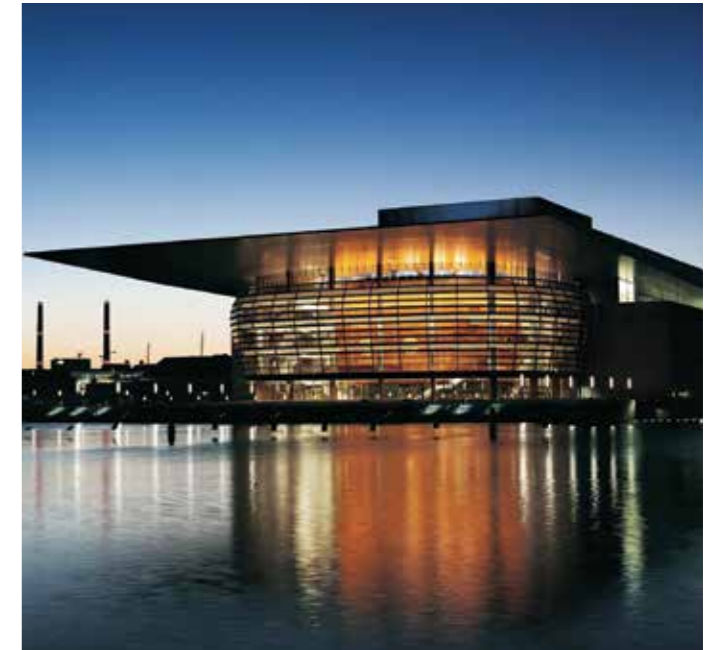
The Tornado Tower is located in the thriving West Bay business district of Doha, Qatar. The impressive building is 200 metres tall and offers 58,000 square metres of world-class office space on 52 floors. Tornado Tower sets new standards both inside and out, with Hempel supplying the protective coatings.



Products
Topaz emulsions 588ME/589ME
Hempadur Mastic 45881

Copenhagen Opera House, Copenhagen, Denmark

One of the most modern and expensive opera houses in the world, Denmark's national opera house was constructed using limestone, glass and steel. A characteristic feature of the building is the giant roof, which has a cantilevered design and covers an impressive 158 metres x 90 metres, the size of three football fields.



Products
Epoxy Primer
Hempacore 43600
Hempathane HS 55810

Kuwait Trade Centre, Kuwait City, Kuwait

The Kuwait Trade Centre stands on an almost square podium base and rises to a pointed peak, 218 metres above ground. The design consists of a cylindrical shaped concrete central core around which the steel floor plates are arranged and orientated to create a twisting tower. Hempel is the chosen coating supplier for ongoing maintenance.



Products
Hempadur Zinc 17360
Hempadur Mastic 45880
Hempaxane Classic 55000

Strata

Ultimate protection for floors

Offering best-in-class abrasion resistance and mechanical strength, it has been developed to reduce the need for cyclical maintenance whilst offering high standards in sustainability. Strata products are ideal for demanding applications and total solutions.

Strata Epoxy HT

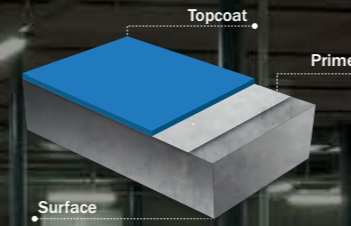
High-build two component solvent free epoxy floor coating for heavy traffic purpose.

Special features

- Outstanding mechanical properties
- High abrasion and chemical resistance
- Low odour
- Smooth glossy or slip-resistant surface
- Available in a wide range of colours

Areas of use

Designed to protect concrete substrates in heavy-duty areas such as factories, manufacturing, warehousing, airfield workshops, food production, medical laboratories and car parks with heavy traffic. It is suitable for areas like ramps, turning circles, parking lots, and areas with heavy forklift traffic in particular.



Certificates/approvals:

Property	Standard	Result
Adhesion strength	ASTM D4541-09	4.7 N/mm ²
Tensile strength	ASTM C307-03	20 N/mm ²
Flexural strength	ASTM C580-02	39 N/mm ²
Compressive strength	ASTM C579-01	89 N/mm ²
Abrasion resistance	ASTM D4060-10	60 mg/1000 cycles
Impact resistance	ASTM D2794	0.3 kg-m
Shore D hardness	ASTM D2240-05	D/79/1

Chemical resistance	Method	Result
Distillated water (cold)	ASTM D1308	No discolouration, change in gloss, blistering, softening, swelling, loss of adhesion or special phenomena was observed.
Distillated water (hot)		
Ethyl Alcohol (50% vol)		
Vinegar (3% acetic acid)		
Alkali solution (5%)		
Soap solution Detergent solution		

Strata Epoxy SL2000

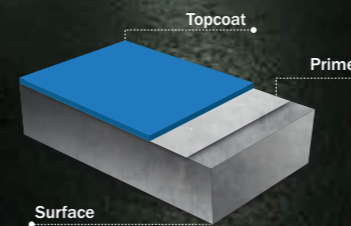
Strata Epoxy SL 2000 is a self-smoothing, solvent-free, three-component epoxy floor coating.

Special features

- Self-smoothing, seamless surface
- From 1 to 3mm DFT
- Excellent abrasion and impact resistance
- Excellent chemical resistance
- Available in a wide range of colours

Areas of use

Designed to protect concrete substrates where a seamless flooring surface combined with excellent mechanical properties is essential. It is ideal for areas where hygiene is vital such as hospitals. It can be applied up to 3mm DFT depending on the specification.



Certificates/approvals:

Property	Standard	Result
Adhesion strength	ASTM D4541-09	4.8 N/mm ²
Tensile strength	ASTM C307-03	19 N/mm ²
Flexural strength	ASTM C580-02	42 N/mm ²
Compressive strength	ASTM C579-01	84 N/mm ²
Abrasion resistance	ASTM D4060-10	59 mg/1000 cycles
Impact resistance	ASTM D2794	0.4 kg-m
Shore D hardness	ASTM D2240-05	D/83/1

Chemical resistance	Method	Result
Distillated water (cold)	ASTM D1308	No discolouration, change in gloss, blistering, softening, swelling, loss of adhesion or special phenomena was observed.
Distillated water (hot)		
Ethyl Alcohol (50% vol)		
Alkali solution (5%)		
Soap solution Detergent solution		

Cellulosic passive fire protection

Uncompromising safety, unbeatable efficiency

From the world's most impressive stadiums to the tallest skyscrapers, our solutions are constantly relied upon to protect against fire and corrosion in difficult and challenging environments.

Our established PFP products, Hempacore One and Hempacore AQ, offer 30-120 minutes of fire protection to almost all section types and are still in global use after many years.

Our new Hempafire product range ensures that we and our customers continue to develop and grow the passive fire protection market. Hempafire Pro 315 and Hempafire Pro 400 provide 60 minutes and 90 minutes of fire protection respectively, with unrivalled dry film thicknesses (DFTs). While Hempafire Optima 500 offers 90 and 120 minutes of waterborne fire protection, with higher application efficiency and reduced VOC emissions to meet sustainability requirements.

Our intumescent team offers global support to ensure that whatever or wherever your building is, our fire protection solutions are optimised, fit for purpose and suitable for all your project needs. We can also provide a full estimation and fire engineering service and bespoke project advice to ensure uncompromised asset protection at a lower total cost.

Increase productivity with faster processes and fewer coats to apply

Critical to intumescent painting application, faster drying times give you shorter intervals before overcoating. When coupled with higher DFTs per coat, this allows you to deliver the required protection in fewer coats, reducing project times both on and off site.

Reduced complexity

Having multiple products for different steel profiles increases project complexity. Our range includes one product solutions that can cover all profiles, from thin wall hollow sections to large open and cellular beams. This simplifies project execution and reduces the risk of incorrect application, maximising safety.

Reduce cost, increase efficiency

Our products help your teams and facilities deliver higher turnover and profitability. Lower loadings mean less paint consumption and reduced material costs. Higher DFTs per coat mean less coats to apply and faster project completion. Combined, the benefits are significant.

For project efficiency, Hempafire Pro 315 and Hempafire Pro 400's exceptionally low loadings significantly reduce paint consumption compared to similar products.

Ease of application

Time is valuable. For maximum efficiency, products need to adapt to the project. That's why we create robust solutions that can be applied in a wide range of conditions. Combined with our comprehensive range of primers and topcoats, and the advice of our experts, we can help you find the perfect system for your needs – to save you time and ensure even the tightest project deadlines can be achieved.

Hempafire Pro 315, Hempafire Pro 400 and Hempacore One, for example, can be applied anywhere, either in-shop or onsite, and in a wide range of temperatures and humidity. In addition, product application can be adjusted to maximise process speed and minimise application costs, giving you better efficiency all round.

Lasting performance, enhanced appearance

Hempel's intumescent protection coatings protect and beautify over the long term. They provide optimal steel protection from fire and corrosion, and dry evenly to provide a superior finish in the most demanding scenarios. This extends your building's lifetime, ensuring that its safety and appearance stand the test of time.

Our products are developed to withstand a variety of climatic and exposure conditions. They are tested according to the rigorous requirements of international standards and third-party certifications, including CE marking, Certifire and ApplusFire.

Durability is a key element, tested accordingly in different types of accelerated weather and corrosion tests, and assessed through real exposure tests in different locations around the world.

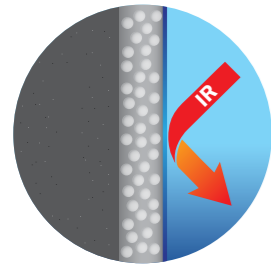
As every exposure condition has different technical requirements, our complete coatings range and advice of our experts ensure you get the most suitable solution for your project's specific needs.

Our Hempacore and Hempafire products are proven in the field. Our intumescent systems have shown to maintain their aesthetics and corrosion resistance after many years in service – and, on occasions when fire has occurred, they have protected the steel structure as specified, helping safeguard both property and lives.

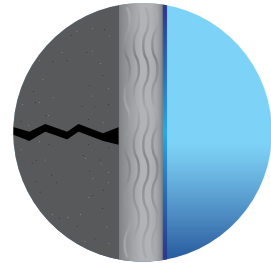
Contex

Protective exterior coatings

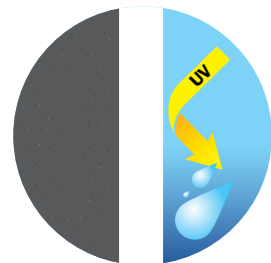
Tough climates require tough protection. Our Contex range uses advanced technology to deflect solar rays, reduce heat conductivity, protect against carbonation and enhance crack bridging. Ideally suited for buildings, roads and bridges, it is available in a variety of finishes and textures that prolong the life of concrete surfaces.



Product	Benefits
Contex Thermoguard Contex Thermoguard is a multifunctional waterborne topcoat designed to reflect near infrared radiation to provide thermal insulation and extreme long lasting colours in hot climates. It is based upon advanced heat-reflective pigments and 100% pure acrylic technology to ensure maximum performance in harsh climates.	Reduce indoor air temperature with up to 5°C Reduced façade maintenance due to very long lifetime Reduce Urban Heat island effect Protect the surface from carbonation



Product	Benefits
Contex EM Contex EM is waterborne elastomeric topcoat with outstanding dynamic and static crack bridging properties to accommodate structure movements. It is based on 100% pure acrylic binders and provide effective protection against harsh climatic conditions. The breathable smooth textured surface offers brilliant anti-carbonation properties.	Outstanding crack bridging properties Excellent anti-carbonation properties Excellent UV resistance Exceptional weathering resistance



Product	Benefits
Contex Topcoats Contex topcoats are known for their outstanding colour retention, allowing exterior walls to maintain their appearance even in the hottest climates. They are available in both waterborne and solvent-borne versions to serve different needs and requirements. Contex topcoats have three different sheens: Matt, Silk, Semi-gloss.	Outstanding weather resistance Excellent UV resistance Proven colours retention and opacity properties Excellent anti-carbonation properties

Jaber Al Ahmad Al Jaber Sabah Hospital

Kuwait

This is the largest medical centre in the state of Kuwait. A hospital that provides 1,168 beds together with state of the art medical services to a projected population of 600,000. The hospital will be keeping with the Kuwait Ministry of Health's long-term strategy to provide the highest quality of health care to the people of Kuwait.

Products
Contex EM 58600
Strata Epoxy WB 48560
Topaz Zero Emulsions 58701



The National Museum of Qatar

Doha, Qatar

We were delighted to be appointed as the trusted supplier for this prestigious project.

Zero VOC was a prominent requirement of the specification and Topaz Zero emulsions, with their additional benefits of being hazard free and environmentally friendly, met the client's needs exactly.

With over 30,000 litres used on this project, the client can rest assured that his sustainable responsibilities have been met.

Additionally our client benefited from our attentive and consistent service from initial enquiry through to project completion.



Products
Topaz emulsions 588ME/589ME
Strata Epoxy HT 35590

Dongguan Commercial Assembly Hall

Taiwan

Dongguan Taiwan Commercial Assembly Hall is an iconic building standing 289 metres high and epitomises Taiwan culture. This is the first Taiwan Commercial Assembly Hall built in the mainland city and is located on Dongguan Avenue in the centre of Dongguan City. It covers a ground area of more than 30,000 square metres, and the total construction area is 220,000 square metres, with more than 90 floors.



Products
Hempadur Zinc 15360
Hempadur Mastic 45880
Hempathane Topcoat 55210

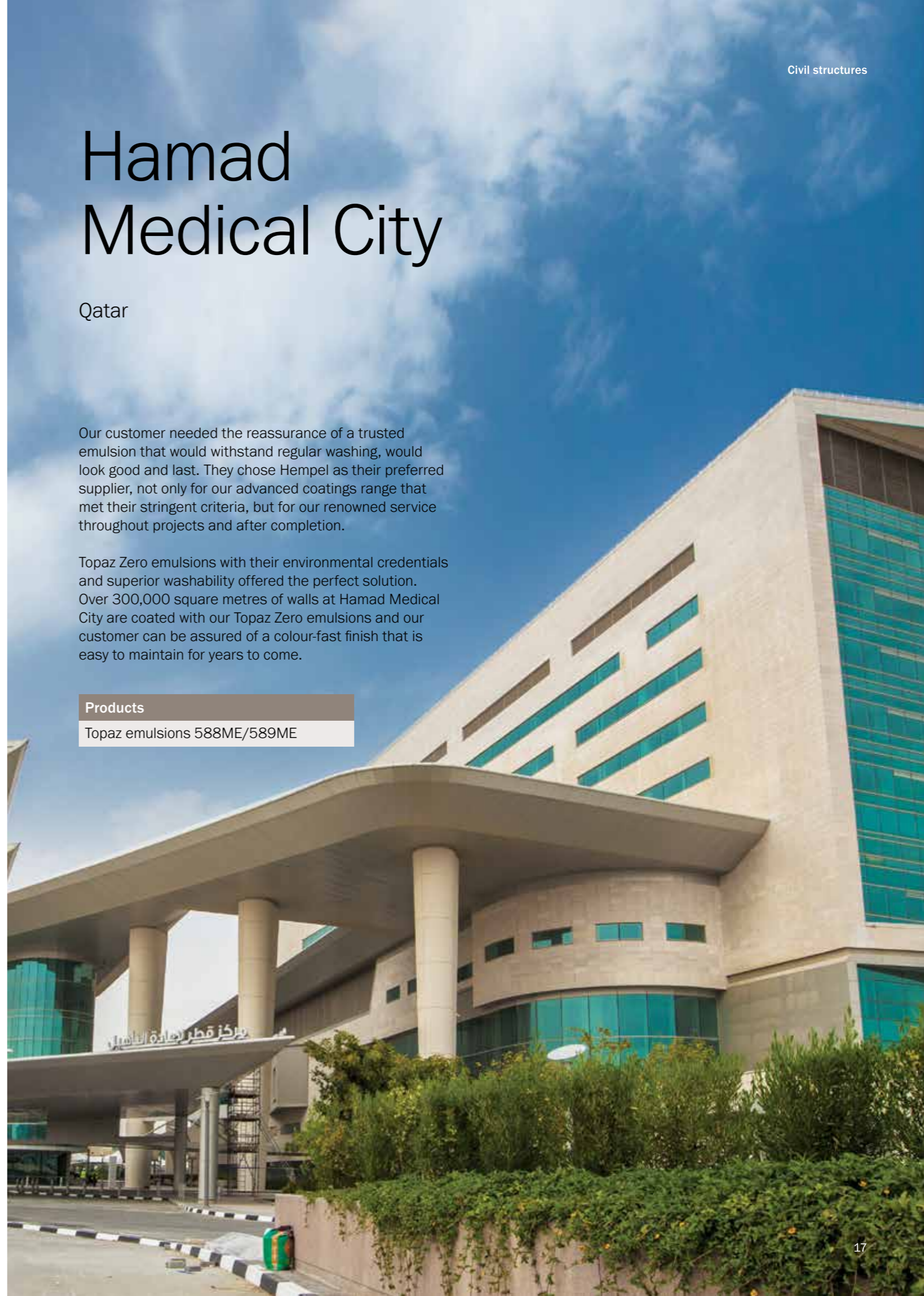
Hamad Medical City

Qatar

Our customer needed the reassurance of a trusted emulsion that would withstand regular washing, would look good and last. They chose Hempel as their preferred supplier, not only for our advanced coatings range that met their stringent criteria, but for our renowned service throughout projects and after completion.

Topaz Zero emulsions with their environmental credentials and superior washability offered the perfect solution. Over 300,000 square metres of walls at Hamad Medical City are coated with our Topaz Zero emulsions and our customer can be assured of a colour-fast finish that is easy to maintain for years to come.

Products
Topaz emulsions 588ME/589ME



Maison de l'Ordre des Avocats

Paris, France

Also known as the 'House of the Paris Bar Association', this modern building is designed with glass façade and a glossy metal exoskeleton, which needed proven passive fire protection coating that would enable the steel to maintain its load-bearing capacity for up to 60 minutes during a fire.

Hempel's Hempafire Pro 315 intumescent coating system was chosen due to its compliance with the EN 13501-2 standard as well as its exceptionally low loadings, the product requires significantly lower dry film thicknesses resulting in reduced paint consumption, increased application time and lower project costs.

Products

Hempafire Pro 315

Hempathane 55750



Selected references

Project	Location	Products	Year
Sabah Al Salem Sports Hall	Kuwait, Middle East	Casa Stone Tex 582ME, Topaz 588ME	2016
Vigo AVE Railway Station	Vigo, Spain	Hempacore One 43600	2015
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
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
Arena do Grêmio	Porto Alegre, Brazil	Hempadur Zinc 17360, Hempadur Fast Dry 15560, Hempathane HS 55610	2014
Logistikzentrum Geobra Logistic Centre	Herrieden, Germany	Speed-Dry Alkyd 43140 (DTM)	2014
Kunming New International Airport	Yunnan Province, China	Hempadur Mastic 45880, Hempaxane Classic 55000	2009-2012
Fuzhou Exhibition Hall	Fujian Province, China	Hempel's Galvosil 15700, Hempel's Mastic Epoxy Paint 4588P, Hempathane Topcoat 55910	2008-2010
Beijing International Airport	Beijing, China	Hempaxane Classic 55000, Hempadur Zinc 17360, Hempadur Mastic 45880	2008
Copenhagen Opera House	Copenhagen, Denmark	Hempel's Shopprimer E 1528, Hempadur 4714, Hempathane Topcoat 55210	2003-2004

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.

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