

# Cellulosic passive fire protection coatings

Uncompromising safety.  
Unbeatable efficiency.



# Rest assured. We have everything covered.

## **Intumescent coatings to protect assets, infrastructure and buildings during fire.**

Structural steelwork is one of the leading materials used in the design of the majority of the world's infrastructure projects, from sports stadiums, airports and shopping malls to multi-storey office blocks and datacentres. Should fire occur in one of these buildings, unprotected steelwork can lose its integrity and strength in minutes. Applying a thin film intumescent coating from Hempel will ensure that your building, people and assets are protected for longer.

Hempel's cellulosic intumescent fire protection solutions are applied as a thin film coating. Designed to expand under fire conditions, they provide thermal insulation protection to steelwork for a given period of time. This helps the steel retain its load bearing capacity for longer, allowing additional time for building evacuation and emergency response – and giving you peace of mind that your building and assets, and people's lives, are protected.

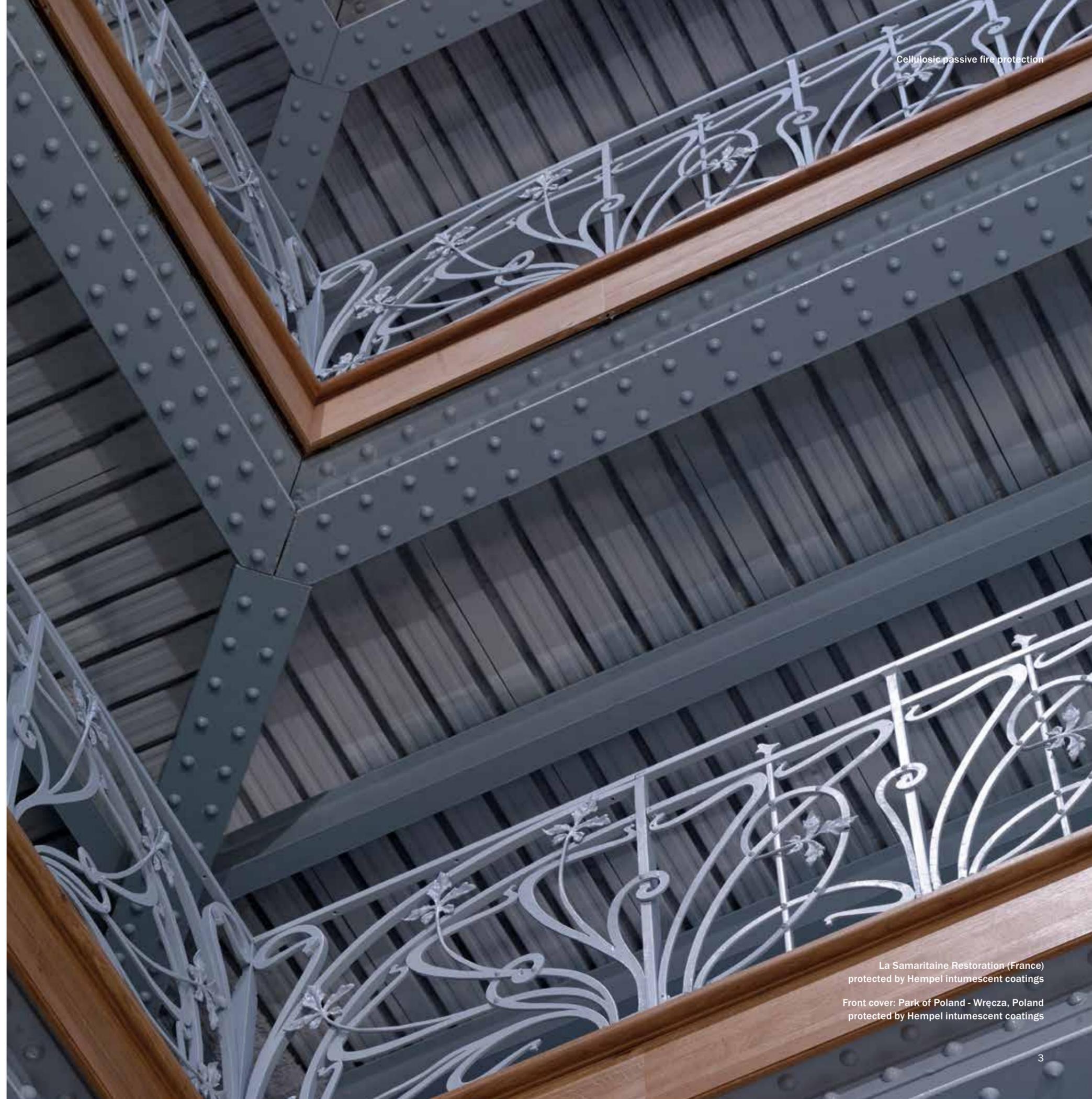
Hempel's cellulosic intumescent coating portfolio can cover any structural steelwork project. Our coatings offer the following benefits compared to similar products on the market:

- Increased durability
- Lower application costs
- Higher application efficiency
- Faster process times
- Excellent aesthetic finish

At Hempel, we don't believe that increased safety should lower your productivity. All our intumescent coatings provide some of the fastest drying and completion times in the industry.

They are also designed to minimise environmental impact. Our waterborne products are very low VOC and our efficient coatings systems use smaller volumes to reduce energy and waste. All this helps contribute to achieving credits in green and sustainable building standards, such as LEED® and BREEAM®.

When it comes to fire protection, Hempel has you covered.



La Samaritaine Restoration (France)  
protected by Hempel intumescent coatings

Front cover: Park of Poland - Wręcza, Poland  
protected by Hempel intumescent coatings



Schiphol Airport - New Pier (The Netherlands) protected by Hempel intumescent coatings

# Advantages across the range for every project

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.

By talking with our customers, we gain a deeper understanding of their needs. This ensures that our coating solutions are always relevant and practical.

Our established products, such as 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). 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.

**“The main benefits we see for using Hempafire Pro 315 are the quicker drying times and the lower loadings it offers to get the fire protection. This means that we can overcoat with a sealer sooner, which means we get increased productivity. Hempafire Pro 315 covers all steel profiles so there is no need to carry more than one material.”**  
 Ashely Lowe, Commercial Director, Vale Protective Coatings Ltd, UK

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.

**“Due to the lower loadings of Hempafire Pro 315, we can now use less paint resulting in quicker drying times. This is a big advantage to our business as it will improve our delivery times, reduce project delays and maximise our overall productivity and throughput.”**  
 Chief Executive Officer, Nanosteel S.A., Portugal

Ease of application

Time is valuable. For maximum efficiency, products need to adapt to project conditions, not the other way around. 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 humidities, from Scandinavia to the Middle East and South East Asia. In addition, product application can be adjusted to maximise process speed and minimise application costs, giving you better efficiency all round.

**“By using Hempafire Pro 315 we secure the high-quality fire protection required whilst also benefiting from an efficient application process and low levels of repair onsite.”**  
 Torben Larsen, CEO, Give Steel A/S, Denmark

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.

Protection from corrosion, weather and fire is ensured by having a compatible system with the best primers, intumescent layers and topcoats. 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 – the right protection without compromise, optimised for efficiency and with a high-quality finish that improves aesthetics on exposed steel.

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.

**“Without the protection of the intumescent coating (Hempacore One) the Fire Department believes that the structure would have collapsed. Thanks to this added protection the structure is in place and we can rebuild as good as new.”**  
 Gabriel, Owner, Raiz Bar, Ponta Delgada, Portugal

# The right solution for every project

Product	Fire resistance (minutes)					Maximum DFT recommended per coat (micron)	Exposure environments*				Corrosion categories**				Technology	Key product benefits
	30	60	90	120	higher than 120		Type Z2	Type Z1	Type Y	Type X	C1	C2	C3	C4		
Hempacore AQ	●	●	◐			750	●	●	●		●	●			high solids waterbased	Very low VOC, market leading DFT's at open sections. On-site applications
Hempafire Optima 500	●	●	●	●	◐	900	●	●	●		●	●	interior		high solids waterbased	Very low VOC, high build coats, quick recoat/overcoat times. On-site applications
Hempacore One	●	●	●	●	◐	1500	●	●	●	●	●	●	●	●	high solids solvent based	One product solution for all fire ratings and profiles with wide coverage. On-site and in-shop applications in warm conditions
Hempacore One FD	●	●	●	●	◐	1500	●	●	●	●	●	●	●	●	high solids solvent based	Fast Dry. One product solution for all fire ratings and profiles with wide coverage. On-site and in-shop applications in cold conditions
Hempafire Pro 315	●	●	◐			1600	●	●	●	●	●	●	●	●	high solids solvent based	Market leading DFT's. Most sections protected in one coat. On-site and in-shop applications in warm conditions
Hempafire Pro 315 Fast Dry	●	●	◐			1600	●	●	●	●	●	●	●	●	high solids solvent based	Fast Dry. Market leading DFT's. Most sections protected in one coat. On-site and in-shop applications in cold conditions
Hempafire Pro 400	●	●	●	◐		1600	●	●	●	●	●	●	●	●	high solids solvent based	Market leading DFT's for R90. One product solution for all steel sections. On site and in-shop applications in warm conditions
Hempafire Pro 400 Fast Dry	●	●	●	◐		1600	●	●	●	●	●	●	●	●	high solids solvent based	Fast Dry, Market leading DFT's for R90. One product solution for all steel sections. On site and in-shop applications in cold conditions

● = full coverage ◐ = partial coverage

\*according EAD350402-00-1106 \*\*according ISO 12944

Visit [hempel.com](http://hempel.com) to find out more about our intumescent passive fire protection (PFP) coatings



Vienna Airport – Hangar 7 (Austria) protected by Hempel intumescent coatings

# Our solutions in action

## Hempacore AQ

### Three buildings in Romania

A business centre, a warehouse and a food market – three very different buildings, all protected by the same waterborne passive fire protection coating. In 2019 and 2020, civil engineering company Coneco Romania was contracted to apply coatings to three buildings. All three buildings had very different profiles and uses, and Coneco Romania needed a passive fire protection coating that could be used in different areas to deliver 30 minutes, 60 minutes and even up to 90 minutes of fire protection.

At the same time, the coating should protect in low dry film thicknesses, as this would keep costs down. The solution was our waterborne Hempacore AQ.

A cost-effective passive fire protection coating, Hempacore AQ is fast to apply on a variety of steel profiles, ensures a beautiful, lasting finish and provides excellent protection in low dry film thicknesses. In addition, as it contains no chlorine or VOCs, Hempacore AQ complies with the latest environmental standards for green buildings.

## Hempafire Optima 500

### Doha Marriott Hotel

Qatar's most iconic hotel, the Doha Marriott, opened in 1973, and is being renovated in preparation for Qatar's hosting of the FIFA World Cup 2022. The new designs included additional floors, which meant the concrete columns needed strengthening with steel cladding prior to grouting to increase their load capacity. The design required fire protection for two hours, and the customer also wanted a low-VOC, easy-to-apply intumescent coating that would deliver an excellent aesthetic finish. Hempafire Optima 500 was chosen, based on application trials that demonstrated its high film characteristics and application friendly properties, which include low odour, no dust formation and a smooth finish. This improved productivity, enabling the project to be completed faster and reducing the renovation schedule.

## Hempacore One

### La Samaritaine, France

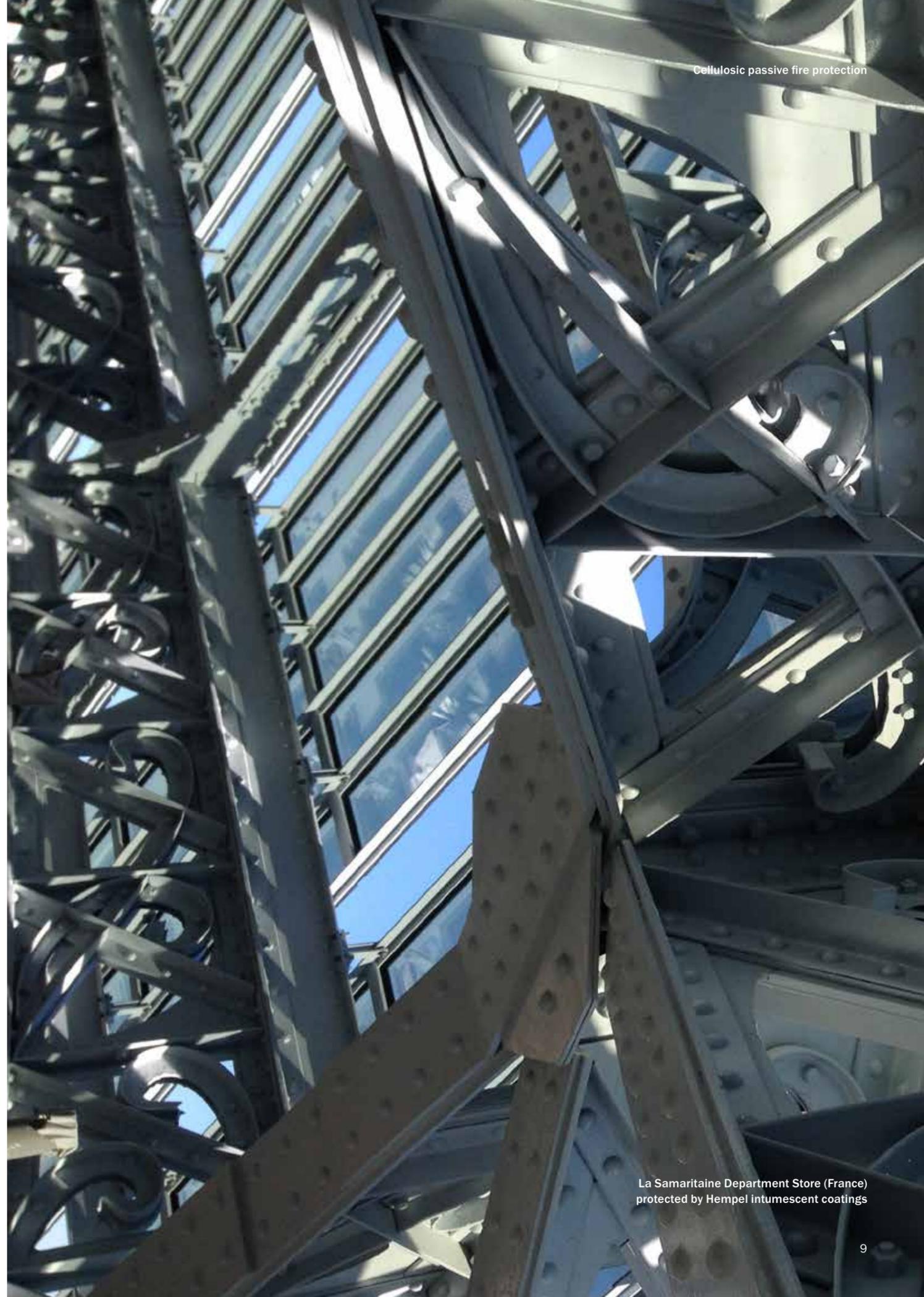
Hempel is proud to play an active role in the restoration of this French historic building - La Samaritaine, an iconic department store over 100 years old. The renovation challenge required a solution that met the building's safety issues while maintaining its classic Art Nouveau and Art Deco design.

Hempel was chosen to protect the steel from corrosion and fire, with a three-coat passive fire protection system, featuring Hempacore One 43600. The product offers up to 180 minutes of cellulosic fire protection in interior and exterior conditions up to C4. Importantly for architects and paint applicators, due to its lower loadings, Hempacore One can also be applied in a thinner layer compared with alternative intumescent products, resulting in shorter application times and a more natural look.

## Hempafire Pro 315

### Schiphol Airport, Amsterdam

Schiphol Airport is the third busiest in Europe, serving more than 71 million passengers in 2019. It is undergoing expansion, including a 55,000 m<sup>2</sup> pier providing eight new gates. The airport has a strong commitment to fire safety, reflected in their extensive firefighter training programme, to which ensures the fastest possible response time in case of emergency. Unsurprisingly, they wanted a high-quality passive fire protection coating for the 6,000 tonnes of structural steel in the new building. Nanosteel, the project's main coating application company, was looking for a coating that offered at least sixty minutes of passive fire protection and was also fast and easy to apply. Our solution was Hempafire Pro 315 Fast Dry, which gave Nanosteel every advantage in the successful completion of their project.



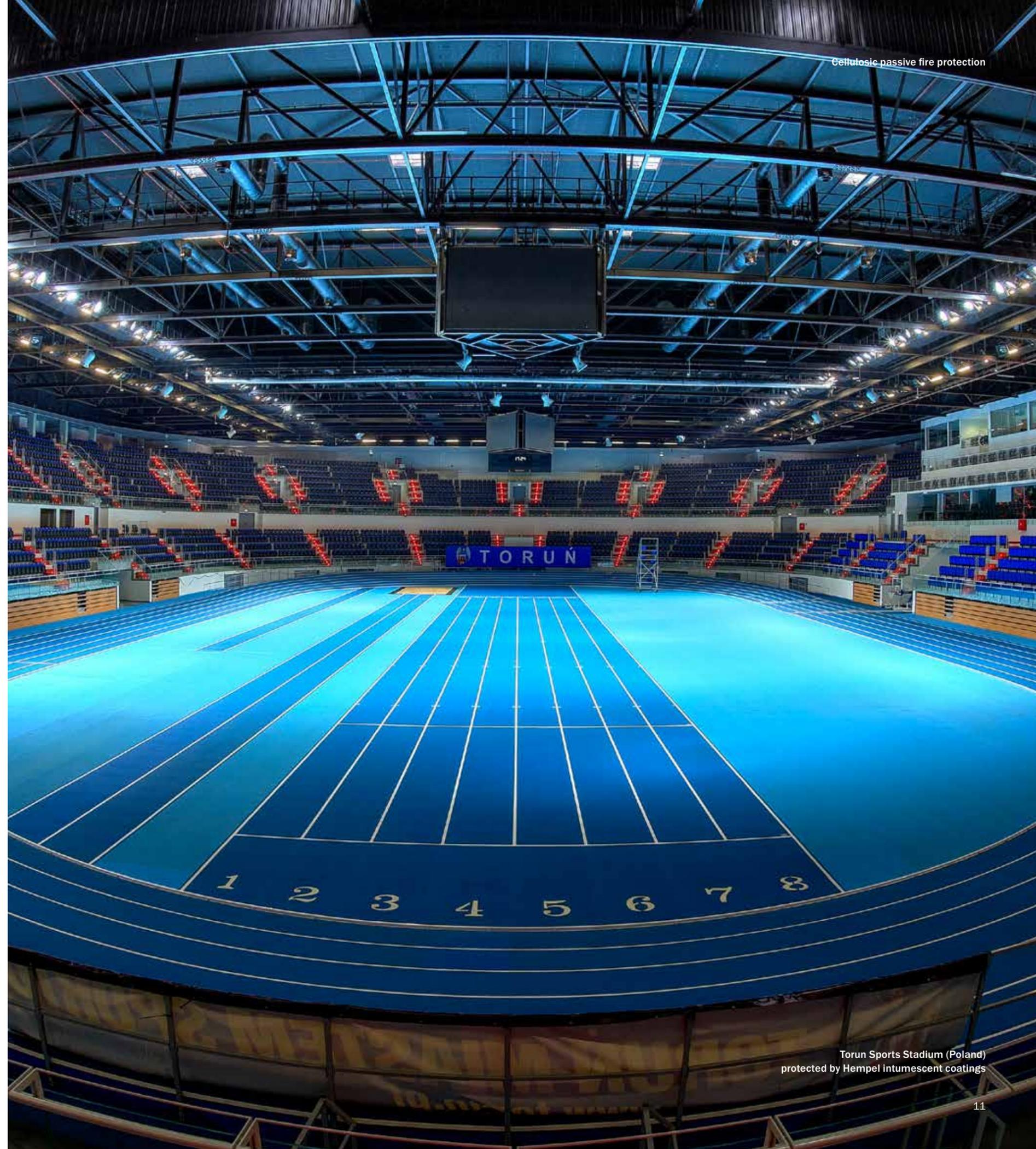
La Samaritaine Department Store (France)  
protected by Hempel intumescent coatings

# Protecting a whole world of steel structures

From airports to train stations, hospitals to sports stadiums, shopping malls to conference halls, Hempel's intumescent coatings protect all kinds of buildings all over the world.

These include:

- **Animal Biotechnology Research Centre**, Spain
- **Arena Torun**, Poland
- **Assima Tower**, Kuwait
- **Birmingham Hospital**, UK
- **Doha Marriott Hotel**, Qatar
- **Dubrovnik Airport**, Croatia
- **Duqm Airport**, Oman
- **Evangelismos Athens Hospital - New Surgical Wing**, Greece
- **Fire Station - San José**, Costa Rica
- **Halle Secrétan**, France
- **Jordal Amfi Ice Hockey Stadium**, Norway
- **Khoula Hospital**, Oman
- **La Samaritaine Renovation**, France
- **Maison de l'Ordre des Avocats**, France
- **North Gate Mall**, Qatar
- **Palestinian and Sudanese School**, Qatar
- **Park of Poland - Wręcza**, Poland
- **Porsche Centre Hamburg**, Germany
- **Raiz bar**, Portugal
- **Reverse Osmosis Building - Khobar**, Kingdom of Saudi Arabia
- **Sakhir Conference Hall**, Bahrain
- **Schiphol Airport New Pier**, The Netherlands
- **Torre Reforma**, Mexico
- **Václav Havel Airport Prague**, Czech Republic
- **Vienna Airport - Hangar 7**, Austria
- **Vigo Railway Station**, Spain
- **Volkswagen Production Hall**, Slovakia



Torun Sports Stadium (Poland)  
protected by Hempel intumescent coatings

# Cutting-edge research provides cutting-edge solutions

Hempel's new research and development centre is focused solely on life-saving passive fire protection products.

**With fifteen research and development facilities around the world, Hempel works closely 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 in aggressive environments.

Hempel's new Centre of Excellence in Barcelona focuses on the research and development of coating products within the field of passive fire protection. This state-of-the art facility comprises

3,000 m<sup>2</sup> of laboratories, testing areas and offices and is staffed by a team of highly skilled technicians, applicators, fire testers, scientists and fire engineers.

As a global leader in the coatings industry, we are committed to developing and increasing a range of solutions that our customers can trust to protect their buildings and industrial installations. Our new Centre of Excellence R&D centre will enable us to accelerate this work, as we expand our passive fire protection product range in order to support our customers' specific requirements.





# Your business, our expertise

For the ultimate in coating performance and project efficiency, choose Hempel Services.

**Our global network of coatings experts has vast experience in project management, and Hempel Services gives you direct access to their knowledge. From specification and equipment to start-up and application, they offer support and guidance at every stage, so you can lower your costs while optimising results.**

**For specific fire protection expertise, our Passive Fire Protection - Business Technical Expertise function supports customers globally with technical advice, estimations and fire design to ensure the best solutions for their projects.**

#### **Optimise application process**

From advice and troubleshooting to continuous support, we work with you every step of the way to maximise speed and productivity, reduce waste and eliminate rework.

#### **Faster project delivery**

We help streamline your maintenance work to reduce surface preparation time, increase application efficiency and mitigate unexpected delays. This ensures your assets remain in operation for as long as possible.

#### **Lower operational costs**

By assessing all costs associated with your solution – from materials and equipment through to supply and storage – we identify cost-saving opportunities, giving you greater control over your working capital and keeping operational costs down.

#### **Increase your revenue**

We support you throughout your project to increase efficiency, eliminate bottlenecks and boost application speed. As a result, you benefit from additional in-service days – and can run your business without disruption.

#### **Long durability**

By ensuring the correct solution is used during new building and subsequent maintenance work, we reduce the risk of damage or premature coating failure. This minimises long-term maintenance requirements and lowers your total building cost.

As a world-leading supplier of trusted coating solutions, Hempel is a global company with strong values, working with customers in the decorative, marine, infrastructure and energy 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.