Welcome to this spring 2014 edition of Hempel’s Newsletter. It is never easy to select only two or three projects to highlight the true versatility of our protective coatings used in a growing number of industries and settings, from offshore wind farms in the North Sea to the eye-catching infrastructures that captured world attention at the recent Sochi Olympic Games and which were featured in the autumn 2013 edition of Hempel News. In this edition, we have decided to take a detailed look at a few of the projects currently in progress both here in the UK and in other parts of Europe, and to do so, we first travel up to Glasgow (page 6) before going on to Spain (page 7), the Czech Republic (page 9) and the Belgian coastline (page 11).

However, the aim of this newsletter is not just to show off our coatings in action but to give you, the reader, greater insight into what Hempel represents as a world-leading supplier of protective coatings. As such, our R&D facilities continue to specify and improve our range of products, designed to provide optimal care for each particular scenario. In fact, on pages 4 and 5 in the article “HEMPCORE AQ 48860 Hempel’s enriches its intumescent range”, we explain how Hempel recently brought out its new waterborne intumescent coating, while on page 8, you can check out how our HEMPATHANE 55613 topcoat can now be adapted to match your exact needs in terms of protection AND colour finish.

But there is much more to Hempel than a list of products and numerous world-class projects that have chosen them to ensure the best in protective care. The backstage of our operations is equally important, and on page 3, our UK Logistics Manager explains how she sees her department’s role in the company. Our organisation is also strongly committed to its technical advisory services and seeks to interact with its customers wherever they may be. Our new web application, highlighted on Page 10, is designed precisely with the aim of bringing Hempel one step closer to our customer base.

All of us here at Hempel UK hope you will enjoy reading this newsletter and wish you a very bright and colourful summer in 2014.

Nick Frowen
Managing Director
Danielle Jones
Logistics Manager

“What was your background prior to Hempel?”
I studied in South Wales and after leaving school, started working in the Home Entertainment industry, where I gained experience progressing up through the ranks at Technicolor’s CD replication facility in South Wales. In 2000, I moved into the print industry, where I became Head of Customer Services for Europe.

“What brought you to Hempel?”
I came to Hempel with 19 years’ experience in Customer Service and Key Account Management. Having worked in the same sector since leaving school, I was looking for a challenge in a different industry. A large aspect of customer service is required in the Logistics role and so I utilise my experience whilst also gaining new skills and knowledge.

“What is the scope of your responsibilities at Hempel?”
I joined Hempel in July 2012 as a Logistics Manager I’m responsible for all aspects of Inventory, Warehousing and Transport. I work closely with outsourced warehouse and transport partners as well as Hempel production units across Europe to ensure our Customers and Sales department receive the best possible supply, service and communication every day.

“What especially significant projects do you recall?”
When I joined Hempel in July 2012, plans were already in place for outsourcing our warehouse operation to an external company with a go-live date of October 1st. It was an interesting challenge co-ordinating the different aspects to ensure the transition to the new warehouse went as smoothly as possible with minimal disruption to customers.

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The transition was completed on-time and our first deliveries left the outsourced warehouse on 1st October as planned. I attribute the successful delivery of this project to the hard work and support received from the Logistics team at Hempel UK and Supply Chain in Denmark.

What are the important values that guide you in your professional life?
I try to conduct myself in a professional, helpful and friendly manner, dealing with people and situations in a way I would expect from the people I interact with. I believe that building strong relationships and trust with colleagues and customers alike gives the best foundation for a successful and rewarding professional life.

How do you go about satisfying your customers’ needs?
Providing good quality information is important in order to build confidence with other departments and customers. Acknowledging requests as promptly as possible, providing clear, concise details to ensure Sales and customers can plan accordingly. Similarly, good relationships and strong cooperation with colleagues is of utmost importance in any role within Hempel to ensure customer satisfaction.

Tell us something about your personal interests.
I spend my personal time with my husband and two dogs – we especially enjoy restoration and DIY projects and are currently renovating a boat, even though the UK is experiencing one of its wettest winters ever.
HEMPACORE AQ 48860
Hempel’s enriches its intumescent range

Following the successful 2012 launch of HEMPACORE passive fire protection, Hempel is delighted to introduce HEMPACORE AQ 48860, a waterborne solution that completes Hempel’s intumescent range in Europe. HEMPACORE AQ can be offered where strict VOC regulations apply, for applications such as schools, hospitals, stadiums, airports and public buildings.

All common building materials lose strength when exposed to high enough temperatures. In a fire, even steel can buckle and collapse in a matter of minutes. This is where HEMPACORE intumescent coatings come in. Applied in thin coats, HEMPACORE expands when the temperature reaches around 200°C to produce an insulating layer of carbon char. This means the steel can maintain its load-bearing capacity for much longer, giving people valuable time to escape.

HEMPACORE AQ 48860 complements Hempel’s existing intumescent range that consists of the solvent-borne HEMPACORE ONE 43600 for on-site application and HEMPACORE ONE FD 43601, the fast drying version - for off-site application, both providing 120 minutes of protection against cellulosic fires.

HEMPACORE AQ 48860 is a chlorine-free coating, providing efficient fire protection of open beams and steel profiles for up to 60 minutes in cellulosic fires, according to European standard: EN 13381-8. It is suitable for indoor exposure in C2 environments for new construction and maintenance, and can be applied off-site (in-shop) or on-site by airless spray or brush. HEMPACORE AQ 48860 also features low DFT and fast drying times, to give decreased total application time. It is VOC-free to conform to regulatory demands and CE marked in accordance to ETAG 018 part 2.

All these single pack coatings offer fire protection and high performance, combined into one core product, which improves durability and reliability, efficiency and flexibility. Durability and reliability of coatings is of great importance as these types of products are expected to have a long lifetime, yet still perform to their design specification, in case of fire. The excellent durability of HEMPACORE ONE 43600 and HEMPACORE ONE FD 43601 was confirmed in tests carried out according to ETAG18-2, which included accelerated exposure to UV and extreme temperature changes, after which the HEMPACORE ONE 43600 product showed no degradation or film defects. In terms of efficiency, greater than 1 mm/coat can be easily applied with surface-dry times of 15 to 30 minutes, saving valuable time. The HEMPACORE range is compatible with a wide range of primers and topcoats.

HEMPACORE products have recently benefited several prestigious projects, such as the high-speed train station in Vigo, Spain, where the huge structure is protected from fire by HEMPACORE ONE. Ignifuga-
cions Generals, fire protection applicators in Spain, chose HEMPACORE ONE for this project due to the efficiency and excellent application properties, which meant that only a small amount of product was needed to achieve the stipulated fire protection value and that it could be applied at up to 1500 micron per coat.

Anton de Castro, Hempel Group Product Manager, explained that Ignifugaciones were very pleased with the results, thanks to HEMPACORE’s short re-coat time and overcoating intervals as well as its high durability, which means it can be exposed for over 6 months during construction before a topcoat being applied.

RECAL Recubrimientos, the largest fireproofing contractor in Mexico used HEMPACORE ONE FD for the protection of the Pedegral 24 Skyscraper, Mexico City, one of the 5 largest towers in Mexico.

“We have worked with Hempel on many projects. They supply us with top-class products and exceptional technical service. HEMPACORE has great efficiency, ratings and loadings. These were key factors in the selection of the coating” Daniel Bazua, RECAL’s Fire-proofing Director.
Glasgow wind turbine will be visible around the world

At a height of 125m, the Cathkin Braes wind turbine is a new landmark for the city of Glasgow and one of the tallest structures in Scotland. This massive structure (the turbine measures 90 metres across the blades) stands at the first tricky section of the new mountain bike track built for the 2014 Commonwealth Games and as a result, will provide a stunning image for millions of TV viewers worldwide watching the event. The turbine is a joint venture between Glasgow City Council and Games sponsor SSE and took a crew of 80 people around 18 weeks to complete. With a nominal capacity of 2.9 mW, it provides enough energy to power 20% of the city’s 72,000 street lights and forms part of the city’s bid to be named European Green Capital in 2015. Hempel is extremely proud to form part of the project as supplier of the coatings for the three tower sections, which were applied by the tower manufacturer, Wind Towers (Scotland) Ltd, at their manufacturing facility in Machrihanish, Campbeltown prior to final assembly on site.

The backbone of the coating system implemented for this turbine is HEMPADUR UNIQ 4774A, a self-priming, two-component, high-build, epoxy coating that provides exceptional abrasion and corrosion resistance and is specifically designed to be used in high performance coating systems for wind turbine towers and components. This high performance coating has a VOC content of only 246 g/l and is dry to touch after just 4 hours, whereupon it can be overcoated by a wide range of epoxy and polyurethane coatings.

On this occasion, the finish requested by Vestas was provided by the application of HEMPATHANE 5561B, one of our VOC-compliant, two-component polyurethane topcoats that are renowned for their ability to maintain colour and gloss properties throughout many years in all kinds of corrosive environments.

The wide range of Hempel coatings specifically designed for both the onshore and offshore wind turbine sector not only provide extraordinary corrosion protection for steel structures but also guaranteed environmental performance that meets the underlying philosophy of renewable energy generation. Such duality of purposes was underlined by city councillor Liz Cameron, leader of Glasgow’s European Green Capital 2015 initiative, in reference to the Cathkin Braes turbine: “It is essential that environmental improvement also delivers economic and social improvements.”
The new Vigo train station in Spain is an ambitious project built on several levels – the actual train terminus will be underground, while above it, 180 retail outlets are being erected over a surface area of 35,000m². Building of the southern terminus in Vigo progresses non-stop on a giant plot of land in the centre of this busy sea-port. There are plans for the high speed connection to A Coruña in the north to be in operation within a year, and for a southbound link that will eventually run through Portugal to Lisbon.

As is to be expected of one of the most complex civil works projects to be undertaken this decade, safety and environmental protection are key factors in the construction of the new north-south high speed rail link along Galicia’s Atlantic seaboard in northwest Spain, due for completion in 2015. And it is for precisely this reason that Hempel’s HEMPACORE ONE intumescent coating was selected for this project.

The technical specification of the metal structure, comprising 8,000m² of steel sections, requires it to have high fire resistance. HEMPACORE ONE 43600 is a one-component, solvent-borne, acrylic intumescent coating that provides both indoor and outdoor steel structures with up to 120 minutes’ passive protection against cellulose fires. HEMPACORE ONE FD 43601 is the fast-drying version of HEMPACORE ONE 43600, specified for in-shop application, and both reactive coatings have the same composition except for the solvents that evaporate out of the end use product.

Both HEMPACORE ONE and HEMPACORE ONE FD are certified under standards EN13381-8 and BS476-21 and are approved by ETA 12/0581 to bear the CE mark and Certifire certificate no CF 5146. They are high-solids, low-VOC white paints that are dry to touch in 20-35 minutes and dry to handle in 8 hours.

The topcoat selected to create the perfect system was HEMPATHANE HS 55810. It is a two-component, high-solids, low-VOC polyurethane enamel that provides remarkable gloss and colour retention. In the UK, it has been approved under Network Rail Specification NR/L3/CN7 number 7.3.1 as a long-lasting topcoat for both new buildings and repairs.

For further information about this or any other product in our range, project specifications, and our full customer services, please contact your local Hempel representative.
HEMPATHANE HS 55613
maximum protection, permanent colour

HEMPATHANE HS 55613 is a two-component, semi-gloss acrylic polyurethane topcoat with good gloss and colour retention. It contains zinc phosphate and fast-dry compounds to provide a VOC-compliant, high-build finishing coat that offers an uncompromising level of protection for structural steel in corrosive environments. HEMPATHANE HS 55613 can be specified as a one-coat “direct-to-metal” system in environments classified as C2 and C3 and has a low VOC level that helps to achieve compliance with environmental regulations such as the Solvent Emissions Directive (SED).

HEMPATHANE HS 55613 has been available through Hempel representatives worldwide since 2012 as a grey-coloured, semi-gloss topcoat. Now, thanks to Hempel’s Multi-Tint system, it can be supplied in any tone on the RAL colour chart to match customers’ exact needs in terms of safety colour coding, brand imaging or mood enhancing.

FEATURES

<table>
<thead>
<tr>
<th>FEATURES</th>
<th>BENEFITS</th>
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<tbody>
<tr>
<td>Excellent UV resistance</td>
<td>Unbeatable colour retention and fastness</td>
</tr>
<tr>
<td>Low VOCs (380 g/l)</td>
<td>Conforms with environmental regulations</td>
</tr>
<tr>
<td>Direct-to-metal</td>
<td>One coat, cost-effective solution for C2 and C3 environments</td>
</tr>
<tr>
<td>Available in multi-tint</td>
<td>Full colour range available for wide range of visible topcoat applications</td>
</tr>
<tr>
<td>Fast-drying</td>
<td>Increased productivity</td>
</tr>
<tr>
<td>Cures at low temperatures</td>
<td>Increased productivity</td>
</tr>
<tr>
<td>Excellent application properties</td>
<td>Flexibility for applicator</td>
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</table>

Given its Direct-to-Metal capabilities in C2 and C3 environments, its fast-drying properties and low-temperature curing, HEMPATHANE HS 55613 provides optimal mechanical and corrosion protection and is especially recommended when painting operations must continue irrespective of surrounding temperatures. Typical coating systems for HEMPATHANE HS 55613 are:

**C4, high durability (> 15 years)**

<table>
<thead>
<tr>
<th>Coating</th>
<th>Micron</th>
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<tbody>
<tr>
<td>HEMPADUR ZINC HS 17360</td>
<td>1 x 50 micron</td>
</tr>
<tr>
<td>HEMPADUR 47140</td>
<td>1 x 160 micron</td>
</tr>
<tr>
<td>HEMPATHANE HS 55613</td>
<td>1 x 50 micron</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>260 micron</td>
</tr>
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</table>

**C5-I/M, high durability (> 15 years)**

<table>
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<tr>
<th>Coating</th>
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</thead>
<tbody>
<tr>
<td>HEMPADUR ZINC HS 17360</td>
<td>1 x 60 micron</td>
</tr>
<tr>
<td>HEMPADUR 45880</td>
<td>1 x 140 micron</td>
</tr>
<tr>
<td>HEMPATHANE HS 55613</td>
<td>1 x 80 micron</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>280 micron</td>
</tr>
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The Product Data Sheet is available on the web page for further information but please do not hesitate to contact your nearest Hempel representative to confirm how HEMPATHANE HS 55613 can give your project that permanent and protective touch of colour that makes all the difference.
Hempel is proud to continue its long-standing relationship as suppliers of protective coatings to Vitkovice Power Engineering, builders of the new Combined Cycle Gas Turbine delivered by Skoda Invest Praha in June 2013 to the CEZ Pocerady power station in Northwest Czech Republic. Pocerady is already a key power source in the Czech Republic and, with output increased to 840 MWe, is a significant player in the economy of the entire North & West Bohemia region.

In the past, Hempel has supplied steel protective coatings for other VPE projects in both the Czech Republic (Tusimice or Prunerov power plants) and elsewhere in Europe (e.g. Adularya power plant in Turkey). At Pocerady, two systems were used to paint the various indoor and outside areas, classed as C2 to C5i (aggressive chemicals) environments under ISO 12944. The steel structures were mainly airless sprayed in the workshop, with some touch-up painting being applied by roller on site.

Standard exposed surfaces were coated with 3 x 90 micron layers of HEMPADUR 47200 followed by a topcoat of HEMPATHANE HS 55610, tinted to RAL5017, while those areas that required extra-resilient protection were coated with 100 micron of grey (13610) HEMPADUR 47200 and a further 100 micron of HEMPADUR MASTIC 45880, also tinted to RAL5017. Parts in highly aggressive environments were protected with 300 micron of HEMPADUR 45143.

HEMPADUR 47200 is a two-component, polyamine adduct-cured epoxy paint with a very short drying time that contains micaceous iron oxide and zinc phosphate and cures at temperatures above -10°C to form a tough and hard-wearing coating. A special feature of this fast-drying product is that it can be specified when long intervals prior to the application of a polyurethane topcoat are expected.

HEMPATHANE HS 55610 is a two-component polyurethane topcoat, cured with aliphatic isocyanate that contains zinc phosphate and produces good gloss and colour retention in a VOC-compliant, high-build topcoat for the protection of structural steel in corrosive environments.

HEMPADUR MASTIC 45880 is a two-component polyamide adduct-cured, high solids, high-build epoxy paint that forms a hard, tough coating with good wetting properties and low temperature curing. It provides excellent long-life performance over a wide range of temperatures and can be tinted to choice using Hempel’s Multi-tint system.

HEMPADUR 45143 is a two-component, polyamide adduct-cured epoxy paint with good wetting properties and low water permeability. It forms a hard, tough coating with good resistance against abrasion and impact and to seawater, mineral oils, aliphatic hydrocarbons and splashes from petrol and related products, and is intended for use in cold/temperate climates.

As in previous projects, a significant factor in the relationship with VPE has been Hempel’s permanent technical assistance on-site throughout the build.
Hempel’s corporate philosophy has always been to offer more than just paint in a can. We believe in working closely with our customers to help them find the right solution to their projects’ challenges and we like to think our customer technical service is second to none. Thanks to the internet, our long-standing customer support programmes now reach a wider audience across the globe, such as the new Hempel web application, now available on 16 local websites in Europe and due to be expanded further this year.

This ingenious application provides users with a fast and easy-to-use method of calculating the exact dimensions of the steel works before selecting the ideal coating system for any project. It updates and extends the database used on an earlier CD-based version to include the latest ISO 12944 requirements, thus ensuring that customers are always referred to the latest regulations.

The start page contains four scroll-down menus providing general information about Hempel, a list of Hempel paints, contact details and other useful information about corrosivity and corrosive environment categories, expected paint durability, definition of volume solids, theoretical spreading and theoretical and practical consumption rates, providing the user with all the background knowledge required to appreciate what the perfect coating system should be.

On the other side of the screen, the user finds the application’s two main functionalities, where he or she can first estimate the surface area to be coated and then find the most suitable coating system.

The ‘Estimate Your Area’ section offers a two-step, user-friendly process with a selection of different steel profiles. Each family is then divided into specific sizes or models and the user simply clicks on the right item. In Step 2, the user inputs either the length or the weight of the item and the programme automatically calculates the surface area to be coated in square metres.

In the ‘Build Your Coating System’ section, the user is asked to input a few basic criteria/parameters – corrosivity, durability and generic type – in order for the system to provide its recommended coating system, with text to explain the properties of each component.

The web application is now available in the Download section of the Homepage and also via the banner on the Protective page of www.hempel.co.uk.
In July 2013, the last of 48 turbines was installed in the Thornton Bank wind farm, 28 kilometres off the Belgian coast, bringing the field’s output capacity to 325 MW, enough to supply 600,000 people with electricity. The turbines are built on gravity-based foundations in waters between 12 and 27 metres deep, in the most corrosive marine environment imaginable and specified for a service life of at least 20 years. With such a formidable challenge to provide worthy protection of the turbines’ steel structures, builder Smulder Projects Belgium NV turned to Hempel and our long-standing track record as suppliers of protective coatings for offshore wind farms going back to 2002, in order to ensure the coating system would meet and pass NORSOK M 501 standards (rev. 5 & 6).

Offshore wind turbines such as Thornton Bank not only stand in C-5 Marine environments, but are also expected to withstand long-term exposure to high-salinity moisture, intensive UV light, strong waves and high corrosive stress, all conducive to widespread, rapid corrosion. With those parameters in mind, Hempel Coating Advisers recommended a 3-layer base system comprising 3 x 200 micron DFT of HEMPADUR MULTI-STRENGTH 45753, covered with a 60 micron topcoat of HEMPATHANE 55214 tinted yellow (Hempel ref 22560/BS381 ref C356) to make the turbines more visible at sea. A total of 260,000 litres have been supplied for this stage of the Thornton Bank project and Hempel products’ reputation among professional applicators for being easy to spray was another significant factor in the customer’s choice of supplier.

HEMPADUR MULTISTRENGTH 45753 is a heavy-duty, self-priming, two-component, high-build, epoxy-polyamide/amine paint that cures to a long-term, abrasion and corrosion-resistant coating in areas exposed to severe climatic conditions. Despite its extraordinary protective capabilities, it can be applied with standard airless equipment to provide a protective coating classified as B1 by DNV, Norway, recognised by Lloyd’s Register of Shipping and which conforms to NORSOK M-501, among other approvals from international standardisation bodies. Its sister product, HEMPADUR MULTISTRENGTH 45751, provides the same protection but in warmer environments.

HEMPATHANE TOPCOAT 55214 is a two-component, glossy, acrylic polyurethane topcoat, providing excellent light-fastness and colour retention for severely corrosive atmospheric environments, such environments that the turbines will be subjected to on the Thornton Bank.
Hempel coatings reinforces its reputation at SPE Offshore Europe Exhibition 2013

Last autumn, Hempel hosted the SPE Offshore Europe exhibition held at the Aberdeen Exhibition and Conference centre from 3rd-6th September. The 2013 edition of this biennial event was the biggest and best conference to date, attended by a global audience of engineers, technical specialists, industry leaders and experts in the upstream industry.

Hempel UK was represented on the stand by William Paterson – Area Sales Manager, Morris Ford – Area Sales Manager, Robert Lee – Technical Service Manager, as well as Michael Syhler from Hempel USA and Dimitris Likouressis and Arnoud Den Braber from Group Marketing.

For Hempel, it was a remarkable opportunity to present its high quality products and proven coating systems to the 63,000+ people that attended the four-day show. Hempel’s brand image as a manufacturer of high-performance protective coatings, with a significant track-record in offshore projects throughout the British Isles and Europe, was handsomely displayed on our attractively-designed stand, which included entertaining games, product brochures, videos and give-aways, that enabled both existing and potential customers, in the increasingly complex Oil & Gas sector, to meet our company and explore their specific requirements in an informal and relaxed environment.

Given such resounding success this year, Hempel UK is already making plans to attend the next edition of the SPE Offshore Exhibition, scheduled to take place in Aberdeen from 8th to 11th September 2015.