Dear Customer,

Welcome to the Fall edition of the Hempel North America Newsletter.

In this edition we introduce our new Hempaline Defend epoxy and vinyl ester range, available to our customers in North America from September 2017. Hempaline Defend provides high performance lining solutions for the aggressive environments found in the oil and gas and power generation industries. Find out more on pages 4 and 5.

We also take a look at the application of Hempaguard X7, our most advanced coating to date, on Sanco Shipping’s seismic vessel Sanco Sky. Read all about it on pages 8 and 9. Our proven anti-corrosion solutions feature on exciting new projects, including for Pepsi, Co. Dry Goods Distribution Center in the Panama Pacifico development. See pages 16 and 17.

Delight in the work of the Hempel Foundation. In this edition we focus on our projects in India. Here, we are partnering with Save the Children and are helping to provide education to 2,800 girls. See pages 18 and 19.

This is just some of the latest news in our Fall newsletter. We hope you enjoy reading and look forward to meeting you again in our winter edition.

Kind regards,
Greg Bengtson
Group Vice President, North America
Before making any recommendation we seek to understand the service environment, considering such factors as temperature, pressure, pH swings and cleaning processes, to ensure the best chance of lining success.

Our linings offer superior protection against corrosion, high temperatures, extreme abrasion and a wide range of chemical and solvent materials. Here at Hempel we recognize the need to fully understand the process conditions we are looking to protect against.

Our Hempaline Defend Epoxy Linings are frequently used on such items as storage tank bottoms, process vessels and secondary containment areas, while our vinyl ester range is ideally suited to the protection of power plant FGD ducting, absorbers and other equipment.

Hempaline Defend helps you increase profits from your assets by maximizing uptime through longer service and reduced maintenance, while minimizing disruption with our fast return to service systems. We combine our extensive knowledge of your business with a focus on the linings challenges you face.

This allows us to provide you with trusted lining solutions to extend the life cycle of your assets.

“We are excited to introduce our new trusted lining solutions in North America. Hempaline high performance linings offer a 24 or 72 hour return to service time while still maintaining the same level of corrosion protection for our customer’s assets.”

Michael McGlamry, Protective Product Manager, North America.
Areas of use for epoxies:

Hempaline Defend 400
A solvent free, high performance epoxy lining with very good chemical resistance. Resists crude oil up to 140˚F/60°C, aromatic and aliphatic solvents, aviation fuels and gasoline. Can be applied using standard single leg, airless spray application equipment.

Hempaline Defend 630 and 640
A solvent free, high performance epoxy phenolic lining with excellent chemical resistance. Hempaline Defend 630 resists a wide range of petrochemicals including (but not limited to) crude oil up to 200˚F/93°C, MTBE, produced water, alcohols, aromatic and aliphatic solvents, aviation fuels, gasoline blends, select acidic and caustic chemicals. Hempaline Defend 640 has added laminular glass flake to accommodate meeting API 652/653 standards for reinforced tank storage bottoms if applied at 50+ mils/1250 μm DFT.

Areas of use for vinyl esters:

Hempaline Defend 500
Suitable as a lining for steel and concrete tanks for chemical processing, chemical storage and wastewater applications. Suited for the lining of stock chests, bleach towers, stacks and Flue Gas Desulfurization (FGD) scrubber systems.

Hempaline Defend 740
Used as a lining in FGD units (GGH units, absorber outlet ducting, chimney flues etc.) where high temperature and chemical resistance is needed. The product is also intended for chemical storage, or exposure, where acidic media at elevated temperatures and pressures may be experienced such as in oil, gas and chemical processing.

Optional primers if required:

Hempaline Prepare 110
A high performance epoxy penetrating sealer for use on steel or concrete*. Hempaline Prepare 110 is used as a primer on concrete to help eliminate outgassing and seal the concrete before a Hempaline epoxy topcoat is applied. This product is typically applied using a short nap roller with a phenolic core.

Hempaline Prepare 120
A two-component vinyl ester sealer for use on steel and concrete. Hempaline Prepare 120 can be used as a primer on concrete to help eliminate outgassing and seal the concrete before a Hempaline vinyl ester topcoat is applied. This product is typically applied using a short nap roller with a phenolic core.

*Traditional tank lining primers may be used for epoxy linings before the application of Hempaline Defend coatings as part of a detailed specification.

Advanced oil tank corrosion protection for a major US oil company

A major US oil company was experiencing corrosion in its sour crude oil tanks. Chemicals and water in the oil were causing severe pitting and corrosion at the bottom of the storage tanks. To combat this, we recommended Hempaline Defend 500 Vinyl Ester Mat Reinforced Lining. The addition of the reinforcement mat not only affords greater barrier properties but contributes to the materials ability to withstand flexure and impact.

Our products have provided proven long term performance for the customer who now specifies Hempaline Defend Linings for all its crude oil tanks.

At a glance

<table>
<thead>
<tr>
<th>Customer</th>
<th>Major US oil company</th>
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<tr>
<td>Lining system</td>
<td>Hempaline Defend 500 Vinyl Ester with mat reinforcement</td>
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<tr>
<td>Total liters</td>
<td>607 gallons / 2,300 liters</td>
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Our new Hempel brand was introduced in 2015 to reflect the confident, contemporary and diverse nature of our business, which is no longer defined solely by our marine heritage.

In continued progress towards the implementation of this new brand we have introduced a new design for our corporate drums.

Over the last few months, we have been working with suppliers to update the artwork for the drums in preparation of the roll-out later in 2017. All Hempel products will use this newly designed drum including the Jones-Blair brand of products which is being absorbed into the Hempel family.

What’s next?
During the next 3-6 months, we will gradually roll out the new Hempel drum throughout North America.

“This is a huge milestone in the implementation of our new Hempel brand, and it is also a big step towards being even more consistent and recognizable for our customers around the world.”

Pia Hoejfeldt, Group Brand Manager.

As we have a large inventory this will be a phased implementation where you may receive a mix of the old Hempel drums along with the new design for a time.

You may also receive the Jones-Blair drum alongside Hempel drums, nothing inside the drum has changed, and the product is the same trusted product you have always received. This is just a packaging change to better align the Hempel and Jones-Blair brands under our new brand identity.
Sanco Shipping’s support ships enable seismic vessels to keep operating without calling in to port for fuel or other provisions. These support ships travel at very low speeds and often switch between warm and cold waters during the year. This makes fouling a big challenge. When fouling organisms – such as barnacles and biological slime – attach to the hull, the extra they create means more fuel is needed to move the ship through the water. Special hull coatings keep fouling at bay, but very few maintain performance if the vessel changes trading patterns or stands idle for any period of time.

For Sanco Shipping, this meant that its ships often had to undergo expensive and time-consuming hull cleaning, blasting and coating re-application between jobs. The company was, therefore, looking for a hull coating that would continue to perform, even when its ships changed trading patterns or stood idle for extended periods.

Our solution was Hempaguard, our most advanced hull coating to date. Thanks to its unique formation, Hempaguard delivers 6 percent fuel savings compared to best-in-class antifoulings over the entire service interval – even if the vessel is idle for extended periods, moves slowly or changes trading patterns. This is important for Sanco Shipping’s customers, as it means that the support ships consume less fuel and are less expensive to operate.

Sanco Shipping applied Hempaguard X7 to its seismic support ship Sanco Sky in October 2014. After a year in operation, the vessel’s hull was free of fouling. At this point, Sanco Sky was laid up beside the dock. When it returned to service 18 months later, the hull was still almost completely free of fouling and only required light cleaning – a one-day drydock procedure – before it was ready sail again.

This not only saved Sanco Shipping costs associated with hull blasting and coating re-application, but also ensured faster delivery of the ship to Sanco Shipping’s customer.

“Hempaguard surpassed our expectations. When we inspected the hull after an 18-month idle period, it was almost completely clean of fouling. This saved us significant drydock costs, and meant we could deliver the vessel to our customer much faster.”

Ivar Slettevoll, CEO Sanco Shipping.
What is Hempel Industrial?

With the acquisition of Jones-Blair and Schaepmann, Hempel inherited a new product portfolio that expanded our capabilities into the Heavy-Duty Equipment (HDE) market.

Jones-Blair’s Industrial coatings and Schaepmann Industrial focused on thinner film and higher gloss applications for products that are typically manufactured in a fixed manufacturing location. Normally, these customers apply their own unique corporate identity color to the products that they manufacture, or as a tier supplier to a heavy duty equipment manufacturer. These customers may manufacture in only one facility, or in multiple locations around the globe.

Advanced coatings for Heavy-Duty Equipment

Our coatings for Heavy-Duty Equipment give our customers a consistent color and durable finish that will meet their demanding performance specifications for longer equipment lifetimes and lower maintenance costs. HDE solutions are customized for drying, appearance, performance, and easy application. HDE units operate in some of the most severe conditions imaginable, from the equipment grading the way for new infrastructure projects, to cranes that build the world’s tallest skyscrapers, and to mining equipment that reaches the depths of the earth. Our industrial coatings protect this HDE equipment from corrosion, extending it’s lifetime and lowering maintenance costs.

Our HDE team are industry value leaders in customer critical needs. Our products are designed to meet or exceed the individual specifications and service life expectations in terms of color, anti-corrosion performance, UV durability and physical properties.

Optimized formulas for customer process

Custom designed formulas that deliver consistent quality and allow efficient line production and improved lines speeds if desired.

- **Color dependability**
- **Proven anti-corrosion performance**
- **Global coordination and expertise**
- **Environmentally safe and energy conscious solutions**

Colors developed to maintain uniform appearance of assembled units that are often supplied with parts from around the world.

High-performance coatings trusted to perform in even the harshest conditions.

Local expertise and advanced supply chain deliveries to ensure customers get consistent quality quickly in any part of the world.

Uniquely formulated products to help customers achieve their regulatory targets and reduce impact on the environment.
Supporting the Rail Industry with FDA approval

Hempel gains FDA compliant approval for linings to be used in the food industry

Hempel is ready to serve the rail transportation market and the food industry with U.S. Food and Drug Administration (FDA) approved linings. Hempadur 15500 and 85671 were tested and certified approved by third party laboratories and attorneys in March 2017.

“Supporting the Rail Industry with an FDA approved lining has long been a goal of Hempel’s” states Mark Mason, Rail Segment Manager, North America. Mark goes on to say “Hempel is now available to fully serve railcar shippers who must have FDA approved interior tank linings to comply with liquid food products. With changing environmental regulations and with a push toward low bake alternatives, Hempel finds itself well prepared to be the trusted supplier supporting this market. Hempadur 15500 and 85671 are also an answer to the problem that railcar heater coils have presented.

Why are heater coils an issue in railcars? Mark explains “Commodities like chocolate paste, corn syrup and molasses require heat to liquefy them. Steam is applied to railcar coils which heats the product and facilitates unloading. However, heat has historically been a problem for interior linings. Excessive heat causes lining material to break down, discolor and blister which could and does result in lining failures.

Shippers are always searching for improved technology. This is where Hempel can fill the market void; Hempadur 15500 can withstand dry service temperatures up to 320°F /160°C and has a long-standing track record in extreme temperatures with the molten sulfur industry.”

“Hempel is now available to fully serve railcar shippers who must have FDA approved interior tank linings to comply with liquid food products.”

Mark Mason, Rail Segment Manager, North America

Hempadur 85671 was developed as a sister product to Hempadur 15500 and through vigorous testing has been proven even more robust with its ability to handle aggressive commodities. At a maximum dry heat threshold of 400°F /204°C, it is double the heat threshold of the products currently used in the industry.

Hempadur 15500 and 85671 have been an important part of Hempel’s rail assortment for a very long time. With each having recently gone through the rigorous testing required to be certified FDA approved, Hempel is well positioned to support the food shipping industry in the rail market.

My Hempel
digital customer platform

Over 400 satisfied customers

My Hempel online customer portal is designed to reduce your paper work and improve your efficiency. It contains information tailored specifically to you – from details of your orders and invoices to tailored prices and stock planning statistics – so you get a complete overview of all your coating logistics and transactions online.

Benefits

• Over 400 satisfied customers use My Hempel worldwide
• Available in 25 languages
• Easy to use
• Share with your customers and vendors through enhanced security
• Personalize your content from product assortment to your specifications
• Track purchasing through reports, including environmental information for compliance

Coming soon

• Credit card payment in My Hempel digital interface
• 24/7 access to all invoices and customer statements

“My Hempel is very easy to use, easy to access - available 24/7. It is available in multiple languages and it is a complete solution in one place. I would recommend this tool to all existing and upcoming new Hempel customers.”

Mohsin Mateen, Aspire Trading.

For more information about My Hempel
Contact your local Hempel sales representative or the Marketing department @ 936-523-5447.
Exhibiting excellence in Panama

Hempel North America was pleased to be involved with the successful installation of NEOGARD floor coatings at the Pepsi, Co. Dry Goods Distribution Center in the Panama Pacifico development.

As a working distribution center, the Pepsi, Co. facility’s downtime equals a loss of revenue, so the 35,000 square foot (3,252 square meters) floor coating system needed to be installed within an aggressive 60-hour timeline. Pepsi, Co. products would also need to remain in their stocked locations to further limit the installations impact on facility operations.

Hempel North America’s NEDGARD CG-65, a high performance epoxy slurry flooring system, met the mechanical performance requirements for the facility but diligent planning and coordination by Zahir Development, Inc. solidified the L&R Construction Management team’s trust and the distribution center’s floor job was awarded to Zahir.

The CG-65 flooring application was completed by a 22 man crew with the continuous supervision of Luis Naime from Zahir and Hempel’s International Business Manager, Daniel Vazquez. Their attention and evolvement ensured that the proper equipment and product application techniques were employed to meet the challenging timeline without compromising product performance.

The 60 hour application included clearing space, protecting Pepsi, Co. stocked items, surface preparation, patching, the application of the CG-65 slurry coat, broadcasting sand, curing, sand recollection, sanding the surface, applying a top coat, and 18 hours of cure for the top coat before floor was returned to full service to Pepsi, Co.

Projects like the Pepsi, Co. Dry Goods Distribution Center go a long way towards demonstrating Hempel North America’s commitment to providing value to our customers and our ability to complete projects in record time to best meet our customer’s needs.

Panama Pacifico is the largest industrial, commercial, residential and economic master planned development in Panama. We look forward future projects at Panama Pacifico as a trusted coating solution provider.

“This is just another example of how the true collaboration in North America allows us to strengthen our customer centric vision and most importantly, deliver the full value of trusted solutions to our customers.”

Jose Luna , Marketing Director
The Hempel Foundation helps more than 67,000 under-privileged children receive a better education each year. This means that through our work with Hempel, every employee supports the education of 10 children in need.

Socially committed in India

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In a recent trip to India, Henrik Andersen, Group President and CEO, Bente Malgaard, Director, International Education Projects, and Umesh Singh, COO South & East Asia, visited a Kasturba Gandhi Balika Vidyalaya (KGBV) Boarding School supported by the Hempel Foundation. The school is in the village of Phagi near Jaipur in India, and provides an education to around 100 girls who would not otherwise be able to attend school.

Upon arrival to Jaipur the Hempel staff travelled another 40 minute drive and received a real traditional welcome, full of flowers, color and warmth. They visited the home of Aruna, a 12 year old student at the school. She lives in a small home only 9 feet by 16 feet /2.7 meters x 4.8 meters, and is home to Aruna, her younger sister, her parents and her grandmother. There is no running water; it instead has to be drawn from a well.

Henrik Anderson commented that he “enjoyed the math and geometry class the most and it was the highlight of his visit.” He shared further “We are not only giving back but also building the future. There is no better way to do that than through the education of girls like this.” The Hempel staff also enjoyed a theater performance as well as traditional Jaipur hand-painting.

Because of a range of social, cultural and financial barriers, it is harder for girls in India to benefit from the right to an education than it is for boys. The KGBV Boarding Schools provide special education for girls from poor and underprivileged backgrounds. The Hempel Foundation is supporting 22 KGBV schools in the state of Rajasthan to improve the learning environment, educate teachers, provide teaching materials and involve parents in their daughters’ education. The project is run with Save the Children and is helping give 2,800 girls an education.

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Henrik Anderson,
Group President and CEO
Buffalo Zoological Gardens

The Buffalo Zoological Gardens sits on 23.5 acres of land in the corner of the Buffalo's Delaware Park. Founded in 1875, the Buffalo Zoo is recognized as the third oldest zoological institution in the United States. Over the next decade the zoo was renovated and expanded from its beginning as a deer park to house a collection of 320 different species and animals.

Renovations over the first century focused on enhancements to meet the changing needs of their animals and visitors. During that time the zoo’s mission evolved from simply exhibiting animals to focus on education, research and building awareness for conservation.

In 2002 the Buffalo Zoo announced a 15 year master plan to transform the zoo and establish exhibits with plant and animals grouped into geological habitats representing the different biomes from around the world.

As part of that project the Arctic Edge exhibit an 2500 sq.ft /232 sq meter animal enclosure needed to be transformed into an interactive learning center and gift shop. The concrete substrate in the enclosure needed to have the previous coating removed so the contractor was stripped it down to the concrete and levelled the floor prior to applying the floor coating.

The Arctic learning center’s floor coating needed a customizable decorative finish that was slip resistant, easily cleanable, and durable enough to withstand high foot traffic of approximately 500,000 annual visitors. A NEOGARD Neoflake system with a chemical resistant topcoat was selected for its performance and quality reputation with the projects contractor.

A general purpose urethane primer was applied to the prepared concrete substrate followed by 20 mils/500 micron of a 100% solids general purpose epoxy and custom color blended decorative flake broadcast to exclusion.

Once cured, excess flake was removed to the system and the flake was scraped to blunt the rough edges to the proper texture for slip resistance and cleanability. A clear seal coat of high solids chemical resistant urethane was applied to finish the system and provide protection for cleaning products.

Hempel is pleased that NEOGARD construction coatings were able to play a part in the Buffalo Zoo’s master plan to support the zoo’s vision to, become,

“a regional leader in inspiring visitors to respect, protect, and restore natural habitats for wildlife.”

Hempel’s NEOGARD Urethane Roof Mastic

Proactive roof inspection and maintenance can extend the working life cycle and performance of a commercial roof by providing building owners and facility managers an opportunity to identify potential problems before they can negatively impact their roof systems.

Water can compromise a roofing system at penetrations, flashings, blisters or seems and cracks and Hempel’s NEOGARD Urethane Roof Mastic was designed to replace asphaltic and acrylic based roofing mastic for difficult maintenance repairs.

NEOGARD Urethane Roof Mastic is a single-component, moisture cured, aromatic polyurethane roof mastic that can be placed at significant thickness without the concern for blistering. It is easy to apply and has significantly superior adhesion to virtually all substrates.

Used to seal, patch and flash:

- Polyurethane foam roofs
- Structural concrete roof decks and canopies
- Existing metal roofs
- Existing single-ply roofs
- Modified bitumen roofs

Hempel’s NEOGARD Neoflake system selected for its performance and quality reputation

Urethane Roof Mastic creates a very strong patch and repair without the need for reinforcing fabric. Eliminating fabric from the application cuts the skilled labor intensive detail work from a traditional three-course application to a single-pass pump, spray, roller or brush application.

The high solids urethane can also withstand significant rainfall within one-to-two hours of application without impacting physical properties allowing a building owner of facility manager to quickly restore the integrity of a compromised roof before it can become a larger problem.
Regional management team

Our North American Regional Management team is here to serve our customers. Get to know them better as we spotlight a different department in each edition.

Connecting to customers

The Customer Experience Survey (CES) is part of Hempel’s effort in connecting to our customers. This is the first global survey involving both buying and non-buying customers to help us understand how our customers perceive Hempel as a coating supplier.

The Customer Experience Survey (CES) will be executed from end of August to mid September and will include online interviews and a questionnaire, which should take 5-6 minutes to complete. We hope that you will take time to participate in this survey and we value your input.

2017 Trade show

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<td>PME Tradeshow</td>
<td>November 16-18</td>
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<td>Hempel</td>
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Since 1915 Hempel has been a world-leading coatings specialist, providing protection and inspiration to the world around us. Today we have over 5,500 people in 80 countries delivering trusted solutions in the protective, decorative, marine, container, industrial and yacht markets. This includes many recognized brands like Crown Paints, Schaepman and Jones-Blair.

Hempel is proudly owned by the Hempel Foundation, which supports cultural, humanitarian and scientific causes across the world.