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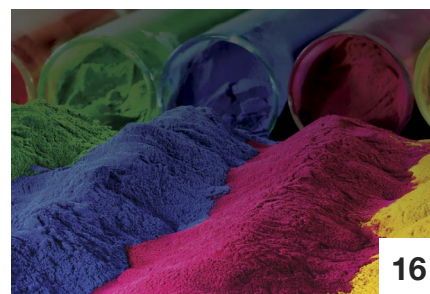
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# A New Year

I heard something on the radio recently. The announcers were talking about setting up a Christmas tree because first, they said, everyone loves Christmas, and second, Christmas signals the end of the year. And who doesn't want this year to end?! It's been quite a ride.

For many of us, September often feels more like the start of a new year than January. The kids return to school, and here at the magazine, we are in planning mode for the following year.

We want to know what you would like to see. This is your book and we want to keep it interesting, engaging, and relevant!

This year, we added a column from the Canadian Association for Surface Finishing (CASF), as well as some newsy features on tackling the aging

workforce and a snapshot of what COVID meant to the industry. If you have feedback, story ideas, product releases or would like to contribute in any way, please let me know. We love hearing from you and without face to face tradeshows, this is one great way to stay connected.

Speaking of connected, we hope you've received your copy of the CFCM 2020/21 Buyers Guide. Whether you are looking for raw materials or services, our annual print edition is a valuable reference tool for the Canadian paint and coatings industry. You can also find it online at [www.cfcmdirectory.ca](http://www.cfcmdirectory.ca).

If you already have an online listing, you can update it any time. If you want to be included, head to the site and create your own listing! We hope you find it a helpful tool for sourcing



ingredients and solutions for anything related to the Canadian finishing and coatings realm.

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## Chemical Coaters Association International Finishing Education Foundation Awards 2020 Scholarships



The Chemical Coaters Association International Finishing Education Foundation (CCAIFEF) recently announced this year's scholarship recipients. Since 1992, CCAI has awarded scholarship money from the CCAI Matt Heuertz Scholarship Fund to students enrolled in programs that could lead to a career in coatings and finishing. The year 2020 is the first the scholarships are being awarded through CCAI's Finishing Education Foundation (CCAIFEF). Applications

from qualified students were reviewed by the CCAIFEF Board of Directors who determined this year's scholarship winners.

CCAIFEF awarded a total of US\$14,500 in scholarships to 10 students. "As always, we received applications from an impressive group of students. What is particularly special about this year's award winners is that in addition to pursuing studies in areas related to industrial finishing, they already have experience working in the industry through internships, co-ops, or job shadowing," notes Sheila LaMothe, CCAIFEF Executive Director. "We are excited to follow the career paths of these students as they are the future of the finishing and coatings industry."

In addition to cash awards sent to the student's school account, each scholarship recipient receives a one-year student membership in CCAI which allows them to gain exposure to the industry and benefit from the resources available

through the association and its chapters.

CCAIFEF accepts scholarship applications each year beginning in January. See the winners and apply online.

[www.ccaiweb.com](http://www.ccaiweb.com)

## AkzoNobel Supporting Artist's World Record Attempt



Artist Sacha Jafri, is attempting to create the largest canvas painting ever made. He's using AkzoNobel's Dulux products and hoping to paint

## Remote On-Line Extruder Commissioning and Start-Up

A new powder coating extruder at a factory in India has been commissioned and started remotely by Baker Perkins engineers based in the UK.

This is an extension of existing capabilities where, with the customer's permission, Baker Perkins is able to log in to a machine regardless of location and, providing there is access to the Internet, carry out fault-finding and software updates.

This feature has allowed Baker Perkins to modify equipment functionality, including the options to add upstream and downstream equipment to the existing extruder control. These alterations can be made with minimal cost, as the engineer does not have to leave Baker Perkins' office in the UK.

The MPX50 extruder in India is now in full production: a video link allowed step-by-step guidance from a technician in the UK to the customer's engineer on-site. Remote support was achieved using an Industrial Router mounted in the extruder control panel, which enabled remote PLC access via a Wi-Fi VPN connection.

This unit is setup to connect to a specific WiFi access point. This facility allows Baker Perkins technicians to remotely assist during commissioning / start-up, and then provide ongoing support when required, with the ability to evaluate and give advice to solve problems and improve performance throughout the machine's life.

Crucially, the secure and certificated VPN connection does not have to be permanent and does not require interaction with customer IT systems. Customer security is not compromised as we do not need to access their internal network and there is no inter-connectivity with customer IT systems.

This machine was commissioned at the height of the COVID-19 Pandemic, when international travel was severely restricted. This is an option available to Baker Perkins customers throughout the world. An additional benefit is that commissioning costs and time can be significantly reduced.

Other additional benefits are that the system can gather and store up to 20 days' worth of extruder process data. This can then be accessed remotely for analysis or extraction. Baker Perkins technicians can evaluate extruder process data and advise on improvements to overall equipment effectiveness (OEE), or identify causes to production issues.

By comparison, standard platforms offer a maximum of 10 days data logging.

[www.bakerperkins.com](http://www.bakerperkins.com)



his way into the record books.

Jafri's project – which aims to raise \$30 million for charitable causes within health and education and connect a billion people around the world – involves creating a painting 160 meters long. He's been in lockdown at Atlantis, the Palm, in Dubai, since the beginning of the COVID-19 outbreak, where his artwork, *The Journey of Humanity*, is being created.

He isn't doing it alone. He's invited children from around the world to send in drawings themed around isolation and connection, which he'll paste into circular portals inside the mammoth painting. They'll act as windows intended to lead us to a better tomorrow, as seen through the eyes of children, he says.

"We've always believed that paint has the power to transform people's lives and this is a fantastic way for us to support an amazing initiative through our global 'Let's Colour' program," says Stephanie Kraneveld, Global Marketing Communications Manager Paints. "The Humanity Inspired project aligns perfectly with our own commitment to inspiring communities through color and we're delighted to have an exclusive partnership with such a visionary and exciting artist."

Jafri says his initiative, *Humanity Inspired*, aims to be a catalyst for true societal change through the hearts, minds and souls of children. "I aim to connect the world and reconnect humanity to ourselves, each other and ultimately the soul of the Earth. I'm delighted to have the support of Dulux and AkzoNobel in this record-breaking project, which has been called the 'largest artistic, social and philanthropic initiative in history.'"

Jafri's project is being supported by Dubai Cares, UNICEF, UNESCO and the Global Gift Foundation charity. He also has the backing of the UAE government. Once the work is completed, the canvas will be split into 60 individually framed, numbered, signed and catalogued artwork pieces and sold via an online charity auction.

Jafri, known as "The Pioneer of Magical Realism", is a celebrated artist whose work is owned by the likes of Barack Obama, Bill Gates, George Clooney, Leonardo DiCaprio, and Madonna.

AkzoNobel's Let's Colour program was launched in 2009. More than 2,000 projects have been completed to date.

[www.letscolourproject.com](http://www.letscolourproject.com)

## Chinese Plant Gets Water-based Renewal

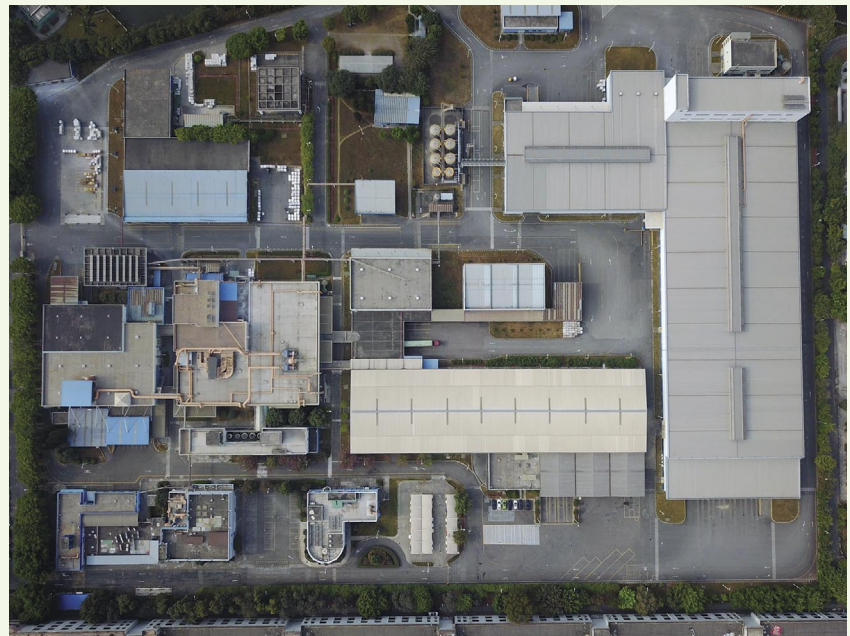
As Chinese customers and consumers demand more eco-premium water-based decorative paints, AkzoNobel says a "huge automation upgrade" will have its Guangzhou plant running at full production of exclusively water-based products.

Guangzhou is the last of the company's four decorative paint plants in China to completely switch to water-based products. State-of-the-art technology will increase its water-based paints production capacity from 88 million liters to 140 million annually.

AkzoNobel says the plant's upgrades will also bring the company closer to its overall sustainability ambitions, which include 100 percent water reuse at the most water-intensive sites by 2030. Once fully operational, Guangzhou will increase water reuse by 70 percent and reduce waste water by 50 percent. Reductions in electricity use and VOC emissions are also expected.

"The new plant is a significant milestone for AkzoNobel in China as we strive to increase our production of eco-premium water-based products," says David Prinselaar, AkzoNobel's Chief Supply Chain Officer. "This a prominent sector generating many opportunities for us to provide greener paint and coating solutions."

[www.akzonobel.com](http://www.akzonobel.com)



## Howard Marten Announces Name Change

# HMFT.

Howard Marten Fluid Technologies Inc. announced recently that the company name will be changed to HMFT Inc. effective July 27, 2020. Head office will remain at 902 Dillingham Road, Pickering, ON.

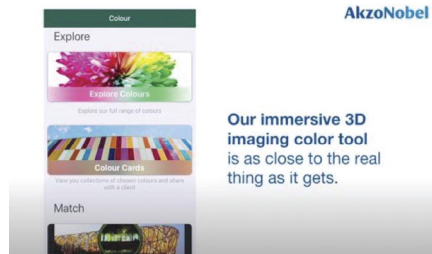
HMFT says after 70 years in business, it was time for a refresh of its brand identity in conjunc-

tion with modernizing the way it operates. HMFT says it is investing heavily in new technologies and processes to make customers' lives easier and more profitable. The company stressed it is still comprised of the same employees, suppliers, products, management, and ownership customers are familiar with.

HMFT offers solutions from spray foam to liquid paint spraying, from powder coating to protective coatings, from personal protective equipment to pumps for lubrication, filtering and fluid handling. In-house engineers are able to offer custom-engineered solutions if required.

<https://howardmarten.ca>

## AkzoNobel Launches 3D Visualization for Powder Coatings Customers



**Our immersive 3D imaging color tool is as close to the real thing as it gets.**

AkzoNobel's Interpon brand hopes to make choosing the right powder coating easier with the introduction of immersive 3D imaging technology.

The company's new 3D color tool – available via the AkzoNobel Design app – is designed to help architects and specifiers find exactly the right product for their needs.

In addition to enabling users to digitally rotate coatings samples, it's also possible to zoom in and out and view them in the context of different environments – providing a more realistic impression of what the actual powder coated finish would look like.

“As the industry leader in powder coatings, we're always looking to improve our products and digital tools to help customers arrive at the perfect solution,” says Daniela Vlad, Business Unit Director for AkzoNobel Powder Coatings.

“Our unique 3D tool will further improve the confidence levels of architects and designers when using digital visualization for their color decisions. It's as close to the real thing as it gets and is just the latest example of how we go beyond imagination and work tirelessly to develop new technologies that will benefit our customers.”

The tool also works with metallic and pearl sparkle effects, offering a sense of color, texture, smoothness, and glossiness.

“We take great pride in helping customers to improve the accuracy and efficiency of the work they do,” continues Vlad. “Getting the color, structure and shine right is critical when selecting powder coatings, so we're excited to provide the creative freedom that allows specifiers, architects and the industry in general to make the perfect finish.”

[www.akzonobel.com/en](http://www.akzonobel.com/en)

## Horizon Forest Products Teams up with Chemcraft

AkzoNobel, manufacturer of the Chemcraft brand of industrial wood coatings, says Horizon Forest Products has joined its distribution network.

“Chemcraft is an industry leading brand that



provides great innovation and product quality with market-leading customer support. We've been pleased with their commitment to sustainability in

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the wood industry, and we are excited to share their portfolio with our cabinet makers and wood product customers,” says David Guistwite, Cabinet Branch Leader for Horizon Forest Products.

Horizon Forest Products has been in business for more than 75 years and provides a full line of lumber, sheet goods, cabinets, flooring, mouldings, abrasives, wood stains and coatings. [www.horizonforest.com](http://www.horizonforest.com)  
[www.chemcraft.com](http://www.chemcraft.com)

## People

### Gema Adds Sales and Service Employees

Gema USA Inc. recently welcomed some new employees to its North American sales and service teams.

Aaron Thompson, new to Gema, joins the



Rob Galli

Gema Service team as a ServiceNet Technician. He will be responsible for working with customers throughout North America, supervising installations and providing service.

Rob Galli, a veteran Gema ServiceNet Technician has transitioned to the role of Canadian Territory Manager. He will also be providing sales support and application expertise to Gema distributors and customers throughout Canada.



Shawn Hayes

Jason Schwer joins the Sales team as a Territory Manager. In his new role, he will be providing sales support and application expertise to Gema distributors and customers in the Western US.

Shawn Hayes joins the Sales team as the Regional Manager for Canada and the Eastern US. He will be responsible for system sales

and management of the distribution network in his region.

[www.gemapowdercoating.com](http://www.gemapowdercoating.com)

### Hempel Welcomes New COO



Katarina Lindström

New Executive Vice President & Chief Operating Officer, Katarina Lindström officially joined Hempel on August 1. Lindström will play a central role in driving Hempel’s strategy, the company says, adding it plans to double in size in the next five years with Lindström leading the strategic agenda within operational excellence, innovation and sustainability. “I’m very pleased to begin at Hempel,” Lindström says. “The company’s growth strategy is very ambitious, but also realistic and Hempel has a strong desire to lead sustainability in the coatings industry. I’m very excited to be part of that.” As part of this growth strategy, Hempel is making investments in innovation and sustainability, while strengthening its supply chain and manufacturing footprint, particularly in the Asia Pacific region, it says. “Katarina is a strong addition to our team,” says Lars Petersson, Group President and CEO. “It is important to us to take a leading position in the industry within market-driven innovation and sustainability. Katarina will play a significant

### PPG Receives Two Awards for IT Innovation from CIO Magazine

PPG received the FutureEdge 50 and CIO 100 awards from IDG’s CIO magazine in June.

The award was given to PPG for its ASSET INTEGRITY MANAGEMENT (AIM) system, which was introduced in the U.S. and Canada last year. Created for PPG’s protective and marine coatings (PMC) business, the program uses proprietary algorithms to help facility owners, managers and engineers schedule, budget and optimize corrosion protection of metal assets.

“The FutureEdge 50 award highlights PPG’s commitment to using information technology (IT) to help customers maximize their coatings investments,” says Scott Doering, PPG director of sales, PMC, U.S. “While some companies offer corrosion audit programs that help customers actively manage assets, the PPG AIM system is the first that we know of to feature dynamic budgeting and scheduling capabilities.”

These capabilities enable maintenance engineers to more accurately forecast which assets will require a new coating or surface repair and when that work must be done. The software also estimates inflation-adjusted costs for when those repairs are expected to take place.

This is the fifth time PPG has received a CIO Award.

“The achievement showcases PPG’s legacy of IT innovation,” says Jeff Lipniskis, PPG Global Director, Information Technology. “We are proud to be recognized for this prestigious honor, but even more so for our team’s ability to continuously innovate and develop advanced digital solutions that help our customers meet the challenges of doing business in their industries.”

[www.ppgpmc.com/aim](http://www.ppgpmc.com/aim)



part in this."Lindström joins Hempel from Munters Group AB where she was President of Operations. Prior to that, she held a series of global senior executive positions at Volvo Group. [www.hempel.com](http://www.hempel.com)

## Carlisle Fluid Technologies Welcomes Two New Employees



Carlisle Fluid Technologies recently welcomed Judy Lietzke as its new Marketing Director, Americas, and John Owed as Strategic Business Unit Director, Finishing.

Lietzke has more than 33 years of experience in the finishing industry working with distributor, integrators and industry partners.



John Owed



Judy Lietzke

"We are happy to have Judy back with the Carlisle Fluid Technologies family," says Tom Murray, VP of Sales, Americas. "Her experience over the years, in both marketing and product management, will provide valuable insight to help Carlisle Fluid Technologies reach the marketplace."

With more than 36 years' experience in the industry, Owed will guide the Carlisle Fluid Technologies team on the development of new and innovative products, while growing relationships with its distribution, integrator and international partners to bring these new and innovative products to the finishing market.

"John Owed's experience and product knowledge will help bring Carlisle Fluid Technologies' vision for innovation and solutions to our valued distributors and customers," Murray says. "John will add a considerable amount market experience to elevate our products and innovation to the next level."

[www.carlisleft.com](http://www.carlisleft.com)

## Dynamix Adds New Employees

Dynamix Incorporated has promoted Lozenzo Lamanna to Technical Manager, effective June 22, 2020. He will assume leadership of the company technical team after serving as technical/sales representative since August 2011.

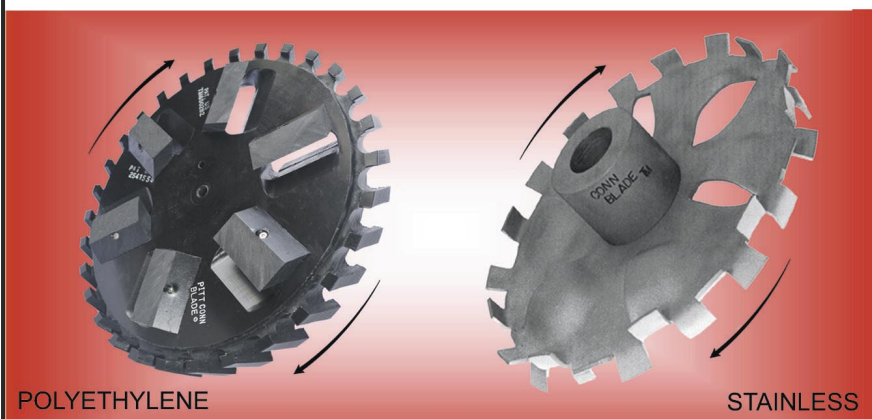
Lamanna has been a member of the surface

finishing industry for 30 years, with 20 of those years in a management position.

He will oversee all technical matters and manage the technical/sales team, working collaboratively with clients/users, the laboratory staff, and management to ensure product application success.

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## in the NEWS



Lozenzo Lamanna



Meron Olana

In addition, Meron Olana joined the team as an R&D chemist. Olana has R&D experience in the emulsion and adhesive fields. Her responsibilities with Dynamix will be to improve and develop new and innovative products and processes for the surface finishing industry.  
[www.dynamix-inc.com](http://www.dynamix-inc.com)

### Trinseo Strengthens CASE Team

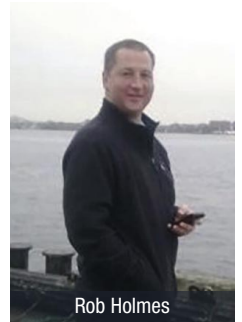
Mike Christy and Rob Holmes have each been appointed Technical Service and Development Specialist for coatings, adhesives, sealants and elastomers (CASE) at Trinseo.

Christy most recently served as Technical Account and Business Development Manager at Resinate Materials Group, Inc., working his way

up from a chemist. He began his career as a laboratory technician at Dow Chemical Company. He has a decade of experience in the chemicals industry with particular expertise in polymer chemistry, and research and development.



Mike Christy



Rob Holmes

Holmes most recently worked as an independent consultant. He has more than three decades of experience in the chemicals industry, most of which were spent with OMNOVA Solutions, where he worked his way up from Principal Technician to Associate Applications Engineer, Global Tape & Adhesives segment. His expertise is in polymers, adhesives and coatings.

[www.trinseo.com](http://www.trinseo.com)

### IGM Resins Promotes and Appoints Key Team Members to Strengthen Photoinitiators



Andrew Chambers

IGM Resins announced that Andrew Chambers, Vice President Photoinitiators, retired July 1. He will remain in an advisory role to the company.

“Andrew has played a critical role in develop-



ing IGM into the leading global development, manufacturing and sales company serving the UV industry and clear market leader in photoinitiators,” says Edward Frindt, CEO. “I am pleased that we are able to continue to use Andrew’s knowledge and expertise in his new capacity and would like to emphasize again how much Andrew’s contribution to IGM’s growth is appreciated. I wish him well for the future.”

Wilson Gu, Vice President Asia has been promoted to Executive Vice President Photoinitiators & Asia. The photoinitiators business team will be expanded with the appointment of Martine van der Ent as Business Manager Photoinitiators reporting directly to Gu.

Gu joined IGM in September, 2014, leading the Asia business as its regional Vice President. In his new role, Gu will be accountable for the strategic business management with responsibility for updating and implementing strategies to maximize asset utilization, penetration of new and existing markets, and leveraging partnerships (including M&A) for new and existing products, the company says.

Martine van der Ent joined IGM in 2018 as Commercial Manager EMEA. She will now be responsible for implementing the company’s photoinitiator strategy.

[www.igmrresins.com](http://www.igmrresins.com)

## Calendar of Industry Events

**October 14-15, 2020:** Virtual Anodizing Conference and Expo. [www.anodizing.org](http://www.anodizing.org)

**October 14-15, 2020:** CeflaLive. Charlotte, NC. [www.ceflafinishing.com/en/ceflalive/ceflalivecharlotte](http://www.ceflafinishing.com/en/ceflalive/ceflalivecharlotte)

**February 23-26, 2021:** Powder Coating Week, Orlando, FL. <https://conference.powdercoating.org>

**April 8-9, 2021:** Canada Woodworking East, Espace Saint-Hyacinthe, Saint-Hyacinthe, QC. [www.canadawoodworkingeast.ca](http://www.canadawoodworkingeast.ca)

**April 28-30, 2021:** Women in Finishing Forum, Embassy Suites South Bend at Notre Dame, South Bend, IN. [www.ccaifweb.com/page/WIF](http://www.ccaifweb.com/page/WIF)

**July 13-15, 2021:** SUR/FIN, Detroit, MI. [www.nasfsurfin.com](http://www.nasfsurfin.com)

**September 13-16, 2021:** Fabtech 2021, McCormick Place, Chicago, IL. [www.fabtech-chicago-exhibition.com](http://www.fabtech-chicago-exhibition.com)

**September 21, 2021:** CASF Golf Tournament, Whistle Bear, Cambridge, ON. [www.casf.ca](http://www.casf.ca)

**April 5-7, 2022:** American Coatings Show, Indianapolis, IN. [www.american-coatings-show.com](http://www.american-coatings-show.com)

**April 26-29, 2022:** PaintExpo, Karlsruhe, Germany. [www.paintexpo.com](http://www.paintexpo.com)

**June 2022:** Fabtech Canada, Toronto, ON. [www.canada.fabtechexpo.com](http://www.canada.fabtechexpo.com)

## BASF Launches Waterborne Basecoat Line for Body Shops of the Future



BASF’s Coatings division recently launched a new refinish product line. By increasing product efficiency and significantly lowering the environmental impact, the products meet the high expectations of modern body shops, BASF says.

During the development of the waterborne basecoat line, the focus was put on sustainability. The formulation optimizes processing properties for fast and efficient application and enables spray painters to produce efficient, environmentally friendly refinishing results.

Aside from reducing CO<sub>2</sub> emissions due to shorter process times in the bodyshop, the value of volatile organic compounds (VOCs) is consistently below 250g/l, the lowest on the market, BASF says.

“Innovation is a key pillar of BASF’s growth,” says Dirk Bremm, BASF Coatings division. “The Coatings division has always been committed to exciting the market with the best surface solutions. With the development of our new refinish product line, we have anticipated the challenges of the changing refinish market and support our customers when it comes to cutting emissions and becoming more efficient and sustainable.” The line is the result of intense research and development by cross-functional teams as well as customer feedback.

“The customers are in the center of everything we do and we rely on their feedback to provide the best solutions possible,” says Fabien Boschetti, Director, Global Marketing, BASF Automotive Refinish Coatings Solutions.

“Together, we tested the products under real-life conditions and got the confirmation that the paint system is capable of reproducing millions of colors on the market under all climate conditions. When comparing with existing basecoat lines in the market, on average, customers can expect savings of up to 35 percent in overall process times through faster application and shorter flash-off cycles. Another 20 percent savings can be made as material consumption is reduced.”

BASF says the new waterborne basecoat line is not only about paints; it is a complete set of solutions for the body shops of the future. Customers can benefit from new, ergonomic mixing stations that can be tailored to their individual needs. An additional web-based reporting tool helps body shop managers keep tabs on business operations. To make customers, insurance companies, fleets, car manufacturers and other stakeholders aware of the quality and sustainability standards of the body shop, a certified auditing program has also been established.

The new line, including all additional services, will be rolled out under BASF’s refinish brands Glasurit and R-M globally beginning in Q3 2020 in selected countries.

[www.basf.com](http://www.basf.com)

# CPCA CORNER

## Paint & Coatings Issues in Canada

BY GARY LEROUX

**Covid-19 and Canada's Economic Rebound:** As Canada's economy continues to open up, things are getting back to normal. However, there are now widespread calls for the federal government to do two important things: 1) focus on a strategy for economic renewal and growth to address ongoing challenges to Canada's competitiveness, productivity and direct foreign investment; and 2) recognize that fiscal capacity is limited and there must be a clear fiscal plan to rein in federal spending and control growing debt. Both are underlying conditions for a strong economy.

The Canadian Chamber of Commerce and the Business Council of Canada, arguably the largest voices for industry in the country, continue to impress upon the federal government the need to create a fiscal plan before committing further spending. In addition, The Task Force for Real Jobs, Real Recovery, a coalition of industry associations, labour, Indigenous organizations, and others including the Chamber of Commerce, has focused on "Securing Canada's Economic Future," recommending important measures for Canada's economy including "leveraging Canada's world-class industries, advancing regulatory efficiency, attracting capital investment, and enhancing critical infrastructure."

A recent report from the group recommends two critical approaches needed to stabilize the economy: 1) a commitment to evidence, science and outcomes-based impact assessment for all policies and regulations; and 2) the need to advance more agile regulations over more rigid and highly prescriptive regulations. This approach harkens back to the past commitment by recent Treasury Board President, Hon. Scott Brison, to rein in bloated and outdated federal regulations stifling Canada's economy. That effort seems to have fizzled but must be put back on the government's agenda as part of Canada's recovery.

These measures will be very important for the paint and coatings sector as the federal government seeks to renew the existing Chemicals Management Plan assessing chemicals of concern in commerce. They must rely on the risk-based approach to chemicals management that has served the government and Canada well to date. In fact, it has been a world-leading approach as other national jurisdictions have adopted a similar regime for their chemical assessments. This rigorous approach recognizes that chemicals are critical ingredients used in literally tens of thousands of products every day and a risk-based approach ensures the protection required for both human health and the environment.

We have seen how important those products are in the case of coatings, and other sectors, during the pandemic. Public Safety Canada designated paint and coatings specif-

ically as an essential service given the make-up of its many products such as antiviral coatings used for essential PPE and medical equipment, including ventilators. Other examples include waterproofing coatings, which are essential in preventing "Sick Building Syndrome" including mould-mildew buildup. These products are also used for remediation projects in existing facilities such as nursing homes, hospitals and other areas where public health is critical. Coatings are applied to consumer goods and packaging, which is essential to sustain the integrity, stability and security of the final products. Such packaging ensures nutritious food can get to the public unharmed and at reasonable prices, including for vulnerable populations, and is especially important in times like we are experiencing today.

Working together on better policy and more agile chemical regulations, industry and government will be able to turn the corner and get to a stronger economy sooner than later.

**Success in Getting Paint Surplus Returned to Paint Companies in Ontario:** Over the past several months, CPCA was involved in an extensive advocacy effort that culminated in the Environment Minister issuing a direction letter to Stewardship Ontario to return 100 percent of the surplus funds to paint stewards that accumulated in overcharges by Stewardship Ontario pre-2015. Those efforts resulted in approximately \$15 million in surplus funds being turned over to paint companies in Ontario, CPCA members and non-members. More than half of those funds have been returned to the paint companies and the balance will be returned before year-end.

**Ontario MECP Transitioning MHSW to Full Producer Responsibility:** Ontario is in the process of transitioning the waste diversion program for Municipal Hazardous or Special Waste to full producer responsibility. The proposal for the new MHSW regulation will be released early in the fall for public consultation, with the goal of finalizing the regulation June 30, 2021. CPCA participated in the initial consultation and made a formal submission to the Ministry of the Environment, Conservation and Parks (MECP) at the end of July. The new regulation is looking at definitions of materials and responsible persons; management and standards; promotion and education; collection and consumer accessibility; and registration, reporting and auditing. CPCA made a formal submission to the MECP on all of these items and continues to work toward a reasonable and fair regulation for all, especially the obligated stewards, the paint companies who must pay 100 percent of the costs and meet waste recovery targets for paint.

**Alberta Recycling Management Authority Consulting**

**on Fee Changes:** The process for adjusting fees in Alberta for aerosols resulted from the government's modernization of its recycling regulations in December 2019. ARMA launched a 90-day implementation phase from August 1 – October 30 to ensure producers and suppliers will adjust their financial systems to new fees that will take effect on November 1. CPCA and its members were provided an opportunity to comment with the level of fees considered being in line with the national average for those products.

**PMRA Proposed Re-evaluation Decisions for Six**

**CASE Preservatives:** PMRA's recent publication of the results of the paint cluster analysis for six critical biocides used in paint further restricts the number and type of preservatives that can be used in CASE products. This could have significant repercussions for the paint industry in Canada. It may force manufacturers to rely on alternatives in the event that further restrictions threaten BIT, IPBC, Bronopol and other registered preservatives in PMRA's re-evaluation framework. Paint companies will need to assess the impact of the proposed restrictions for domestic and import uses of the six preservatives just analyzed and notify CPCA of any issues for primary or secondary handlers. It will be useful to have any additional toxicology and exposure data that would help challenge the decisions as soon as possible during the limited consultation period which ends in early December.

**Status of Non-registered Biocides with No Intended**

**Biocidal Effect:** An intentionally treated pesticide is a pesticide applied on or incorporated into the article for a pesticidal purpose (i.e., to control a pest). Residual traces of a pesticide that was not intentionally added to the product (e.g., cleaning product required to clean machinery) would not require registration in Canada. However, there remains much confusion with respect to the treated article policy, which needs further clarification to prevent situations of non-compliance for paint companies across Canada. CPCA is now working closely with its technical committees and PMRA to sort out the future of non-registered biocides, which exist in trace amounts in raw materials and may or may not be registered on the Domestic or Non-Domestic Substances List. Either way, it will have an impact on how it is interpreted by authorities in Ottawa. ■

*Gary LeRoux is President and CEO of the Canadian Paint and Coatings Association. [www.canpaint.com](http://www.canpaint.com)*



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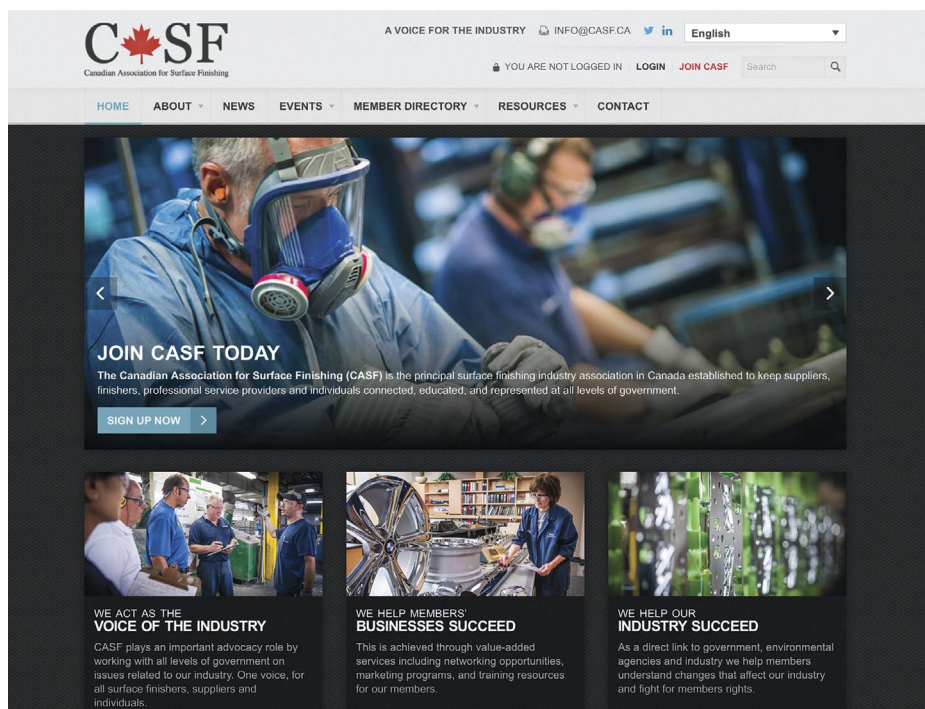
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closures, government agencies extended some reporting periods to help ensure facilities would be able to make their submissions. This includes the NPRI/TRA, ONT Greenhouse Gas Reporting as examples. However, member facilities should always ensure compliance with their jurisdictions as a result of any change that was/is announced in this regard.

CASF is continuing to advocate for our sector with Environment and Climate Change Canada to be able to opt-in to the Output-Based Pricing System program and we are following up with Ontario's Ministry of Environment, Conservation and Parks on the status of

BY BOB SMITH

**Although this has been covered** beautifully in this magazine's last edition, it would be remiss of us here at CASF not to recognize and say farewell to an old friend – Pete Wilkinson. He was a credit to this magazine and an icon in our respective industries, always there with a smile and a joke and with his camera by his side and he was loved and will be missed by all unconditionally. We know where you are now, Pete, and we look forward to spending time when the time comes.

For industry, CASF is here for you. Our members across Canada and beyond, value our advocacy on their behalf at all government levels including our relationship with the Ministry of Environment. That advocacy can be seen as we recognize regulatory changes, understand their potential impact on your business, and support you in managing change as a result of that emerging legislation. We are also closely involved with authorities in advising and compiling Technical Standards that directly affect our industry. If this and other support and programs are something you think your company can benefit from, please give us a call and join us at [www.casf.ca](http://www.casf.ca).

Given that a lot of workplaces were affected by COVID-19 and have reductions in staffing or even temporary

our Technical Standard application. As we navigate through each of these discussions with our government partners we will be reaching out to our members for their valued inputs. In addition to policy work being done within Canada, we also continue to work with our U.S. partners to monitor activities that would affect the chrome plating industry in Canada such as PFAS in fume suppressants and Proposition 65.

Your Canadian Association for Surface Finishing feels your pain! Like you, we and our members are continuing to push through this global pandemic in mostly good health according to the numbers and although the easing of our various governments into Phase 3 seems to be happening too slowly for some, we only have to look south of the border to see what happens when we relax too quickly.

This, the second column from CASF, is being written during the deepest recession since either the Great Depression of the early 1930s or the Second World War, depending on whose statistics you subscribe to. But no matter who is right, we remain in unprecedented times. In the '30s and '40s there was no Internet, Twitter or cell phones, and the world's population was less than one-third what it is today, (2.3 billion). People lived and were happy to live in their own communities and knew very little of what happened in the next province let

alone across the oceans. Today, we know everything within minutes of it happening. We no longer have to worry about only our own community but about the whole world and often we can go into information overload, there's so much tragedy out there.

CASF has not been unaffected through all the upheaval due to the ongoing COVID-19 crisis. We have made the tough decision to cancel our Whistle Bear September 2020 golf tournament. We kept hoping that the COVID cases would continue dropping but the almost certain prediction of a coming second wave made September look like a poor choice. Whistle Bear tried hard to accommodate us but, in the end, we just couldn't see how a gathering of 120 golfers, after a glorious day on the greens, could safely meet and dine without undue risk to all. So, we took the decision to move it to September 2021 and forego our CASF Convention that year. Please mark your 2021 calendars for the CASF Golf Tournament, again at Whistle Bear, on September 21 and for those who enjoy our conventions, be prepared for an awesome one in November 2022!

We have also taken the decision to delay our next "Introduction to Electroplating" course until 2021 for the same reasons. We are all hoping that this pandemic will be just a bad memory by January. This course was so well received last November, and our industry has a real need for this targeted introductory Electroplating course, but it will be back and available in 2021. Go to our website for more information as we get closer.

Our CASF members in Canada continue to take the threat of the coronavirus very seriously and the results show it. A few shops were able to stay open, though at a greatly reduced workload which is only now beginning to improve somewhat, but many took the decision to close due to lack of work, especially those primarily involved in OEM automotive or Tier work. Today, they are still slow, be-

tween 40 to 70 percent of the pre-COVID levels, and all are taking serious steps to limit or ban shop access of non-employees to protect their staff. News out of the automotive OEMs, on which so much of the central Canadian workforce depends, is that production of vehicles continues to increase to fill the void from March to May, but that longer term, the financial outlook might dissuade the general public from taking on auto loans.

During the early summer, the CASF-sponsored Surface Industry Economic Impact Study by Orr & Boss was finalized and made ready for distribution to our members. This extensive report, completed after much collaboration and research with CASF, governmental and industry groups and others, shows what a pivotal role and contribution our surface finishing industry makes in Canada and will surprise many. It has been quite a few years since the last time such a study was undertaken,

and thanks go to both Mike Kuntz and Stewart Tymchuk for heading up this project. This study will be available soon on our website.

CASF has also made progress in becoming more bilingual thanks to the tireless help of one of our Board members, Danielle Miousse. We have a long way to go, but the recent President's Newsletter and a lot of our promotional material is now available, on our website, in both official languages and our efforts in this area will continue.

We sincerely hope that the world has better news concerning the spread of the coronavirus, the introduction of a successful vaccine and return to work of all those who are currently enduring the loss of employment by the time our next CASF NEWS column appears. ■

*Bob Smith is President, Canadian Association for Surface Finishing (CASF), [www.casf.ca](http://www.casf.ca)*

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# Consumers Drive Decorative Powder Finishes

BY HARSHIT NIGAM

**RISING CONSUMER DESIRE** for special surface effects and finishes in end user products is opening new avenues for decorative powder coatings.

Over the past few years, powder coating has witnessed the fastest growth rate among surface coating methods. Increased productivity, material saving, cost-effectiveness, improved aesthetic and functional performance, and significant contribution to limit the emission of volatile organic compounds (VOCs) are a few factors justifying the escalation in the adoption of the coating method. Rapid globalization along with ongoing industrialization and urbanization have also driven the coating technology, addressing the balance between, economic, environment, and social factors.

Powder coating is a process in which dry, free-flowing powder material is applied over a surface, followed by melting and hardening of the surface to develop an even coating. In the process, the powder material is deposited electrostatically over the metal or non-metal substrate and then cured by the application of heat. The process offers a tough finish, durability, thermal stability, color retention, corrosion prevention, and high productivity, which in turn, is further contributing to the surge in demand.

Recently, a shift toward new and improved decorated surface designs and the desire for eye-catching end-user products have presented new growth avenues for the industry. Continuous focus toward enhancing technological capabilities, along with impetus from the consumer toward availing different surface finishes on the end-user products have further created opportunities for the industry players

to reach new heights.

Decorative powder coating is a solvent-free finishing process for coating objects through dry, finely grounded powder materials to develop decorative finishes. It can create special effects such as custom images, wood grains, specialty colors, metallic effects, fine and coarse textures along with smooth, matte, satin and gloss finishes, and stone effects on steel, aluminum, plastic, iron, and other materials. The process finds application in architectural works, furniture, store fixtures, packaging, electrical and electronic appliances, and automobile components.

## **METALLIC FINISHES**

Metallic is the most widely adopted decorative finish. The coatings are used for different decorative applications, comprising under hood components for vehicles, automotive wheels and trim, architectural facades, office furniture, appliances, bicycles, and lawnmowers. The finish is primarily developed from aluminum pigments that are classified as leafing or non-leafing pigments. The leaf aluminum pigment develops orientation at the surface of a powder coating during the fusion phase of the curing process, providing a continuous metallic surface texture glaze. Non-leafing aluminum pigments display random distribution of flakes all over the powder coating film, exhibiting a sparkle effect. Further, in powder finishes, aluminum flakes are utilized along with stainless steel and bronze pigments to achieve a metallic appearance.



## TEXTURED FINISHES

The textured finish is a special type of decorative powder coating, which varies from a very fine texture to an intermediate texture. The textured powder coating primarily constitutes non-melting particles, which disrupt the surface orientation of the powder finish. The concentration, amount and size of these particles command the degree of texture on the finished products. In the process, large, loopy textures displaying orange peel appearance are attained by regulating the binder melt viscosity to minimize leveling and flow. The process requires caution for controlling grain size and spread.

## WRINKLE FINISH

The wrinkled surface profile is used across different consumer products including business equipment, car parts, and toolboxes. The effect is developed through a complex chemical reaction, in which polyester chemistry utilizes a specialized catalyst and a unique cross-linker to stimulate the curing reaction in adequate oven conditions. In the process, an epoxy wrinkle powder is further added to obtain a high wrinkle finish. The highly concentrated epoxy products perform poorly in sunlight, limiting applications to interior products.

## WOODGRAIN FINISH

This is also one of the prevalent methods for providing a decorative finish. In this process, different wood and timber tints are developed over the substrate surface. The same woodgrain processing method is used to create other effects including granite, marbling, denim, leopard skin, camouflage, and company logos. High-resolution woodgrain effects are primarily developed by dye-sublimation technology followed by powder-on-powder technology. The sublimation technology is further used for different types of substrate surfaces including metals such as iron, aluminum, steel, and non-metals such as glass, heavy plastic, and medium-density fiberboard (MDF).

In the sublimation process, the decorative powder coatings are applied over pre-powder coated products. A transfer film, comprising printed special ink, is applied over the surface of the product under high vacuum conditions. The product is then loaded into a machine that operates at high temperatures to convert ink into a gas, which penetrates into the coated layer.

The printed product is then taken out of the machine and the film is peeled off to obtain the decorative finish. Further, in the powder-on-powder technology, special rollers are used for developing a second layer coat on the powder-coated product. The roller is perforated with microscopic holes that allow the powder to disperse over the products, developing the required texture from the secondary powder coating, followed by curing to obtain the decorated substrate.

## PHOTOLUMINESCENCE

Photoluminescent powder coatings are developed by mixing a specific pigment into the powder coating base. Photoluminescence occurs due to the absorption of incident light by a pigment such as strontium aluminate, which re-emits photons that are visible in the absence of light. The pigment acts as a doping agent that constitutes dysprosium and europium oxides. These glow-in-the-dark finishes primarily rely on the dry blend of the photoluminescent pigment in powder coating. The process requires caution in terms of application along with the reusability of overspray, possibly reflecting varied illumination.

## VEINS AND HAMMERSTONES

These powder coatings emit an exceptional wavelength and elicit a deep texture, which is unachievable with conventional liquid paints. The special effects materials include antique vein look finishes that mix a metallic veneer comprising a large-wavelength surface over the edges of the distinct orange peel. Hammerstone powder finishes display a similar surface profile without the metallic veneer. Both of these finishes require an accurate mixture of incompatible materials which produces macro-cratering, without exposing the substrate. The complex formulations mean manufacturers must carefully control the accumulation of these incompatible agents.

## HOLOGRAPHIC EFFECTS

This is one special surface finish effect that is produced by the incorporation of minute prismatic flakes, which cause a holographic effect. These microscopic flakes consist of multiple layers of film that are oriented in manner to produce rainbow color, observable through alteration in the viewing angle. These holographic flakes are capable of producing a distinctive special effect at a very low concentration (around one percent).

Other special effects include pearlescence or a shimmering effect, speckle finish, and fluorescence, which reflects bright yellow, orange, or lime green, similar to photoluminescence. These decorative coatings possess diverse characteristics and uses including anti-graffiti, anti-slip, anti-microbial, anti-scratch, durability, UV resistance, non-toxicity, and reusability, which in turn, are driving adoption of the technology in comparison to other coating methods. The industry players are perpetually focusing on formulating new and innovative finishes to create captivating end-products, in turn expanding the coating's adoption by industry. ■

*Harshit Nigam, Analyst, Adroit Market Research.*

*For more, read the market research report on Decorative Paints And Coatings at [www.adroitmarketresearch.com/industry-reports/decorative-paints-and-coatings-market](http://www.adroitmarketresearch.com/industry-reports/decorative-paints-and-coatings-market)*

# Flatlining Finishing can Increase Productivity and Quality



Superfici's Rotomagnum Sprayer offers automatic filter change to reduce cycle interruption.

**FINISHING CAN BE CHALLENGING.** At minimum, it requires the right equipment, the right set-up and the right employees, especially when done manually.

A great-looking finish means maintaining color and quality consistency not only for one employee, but among all sprayers in the department. Despite highly advanced spray guns, everyone sprays differently. One employee can even spray differently throughout the day.

Spraying parts one at a time, carrying pieces in and out of a booth, and even dry time can all create bottlenecks which add up to lower productivity.

Automation can increase production and result in a more consistent and uniform finish.

If finishing kitchen cabinets, for example, 300 parts would take three workers more than three days to finish by hand. But those same three workers could complete the job in just four hours with a machine, says Doug Mounts, Finishing Product Specialist at Stiles in a presenta-

tion on flatline finishing.

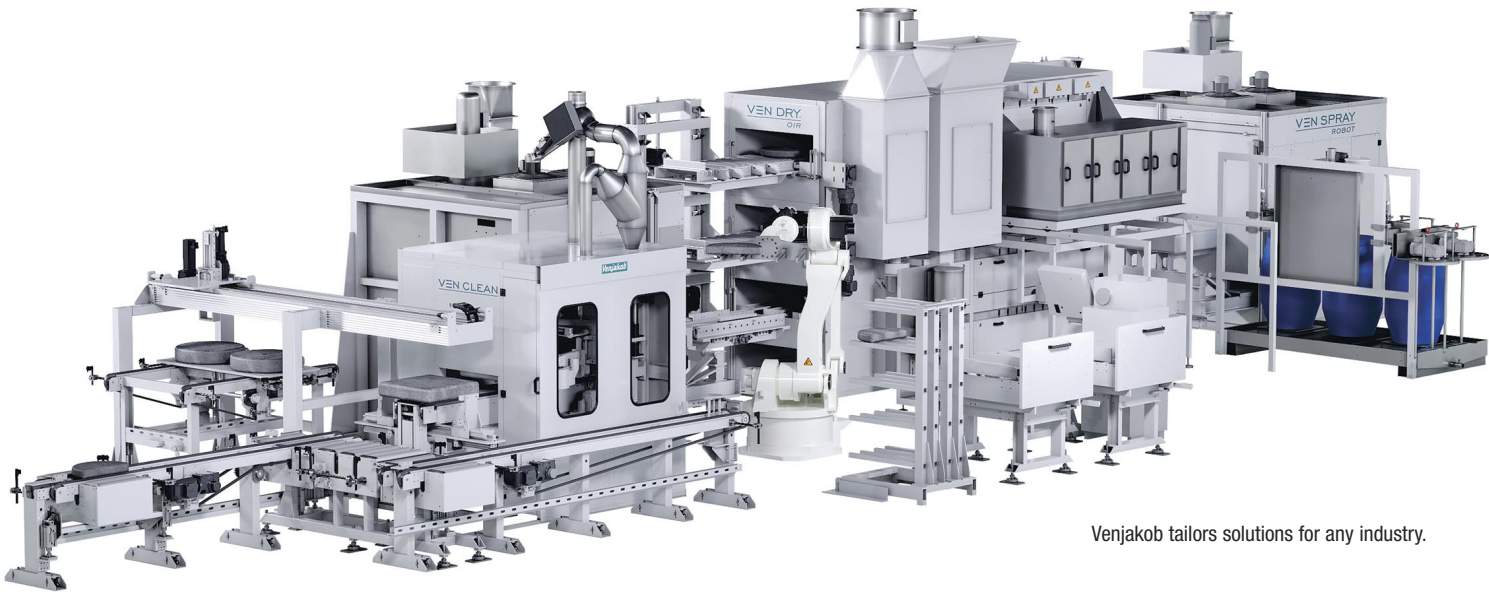
It isn't hard to make the case if your shop is running any kind of volume.

Flatline finishing technology has been around for decades and offers finishers increased throughput and efficiency when finishing flat objects, such as doors and panels, under a spray.

Turnkey or bespoke, systems can be tailored specifically to a shop's need whether to load, blow off dust, spray, UV cure, or unload. The workpiece – glass, plastic, fiber, cement, composite, or metal – doesn't matter either.

Based in Italy but with customers worldwide, Giardina Finishing manufactures machinery and complete plants for coaters of wood, glass, plastics, and metal. The production range includes complete finishing lines by roller and curtain coating, spraying, automated and robotic systems with hot air drying, UV or microwave, and spray booths.

In terms of flatline spray finishing systems, Giardina's



Venjakob tailors solutions for any industry.

spray coating machines include reciprocators, rotary spray machines and robots. The company says all of its spray systems are available in varying sizes and operational speeds. Many machines can be supplied with a paper belt version for low maintenance and quick changeover times, or a synthetic belt with classic product recovery and belt

cleaning for coating recovery. Machines can be equipped with a Dualfast quick-change system so operators can change colors quickly without cross-contamination.

Superfici also supplies, designs, develops, and manufactures complete industrial finishing systems.

Starting with equipment for wood finishing, the company



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Cefla's Omnidry vertical oven automatically manages variations in passage height.

expanded its expertise into the production of coating systems for glass, plastic, graphic arts, metals, and composite materials over the years.

The product range includes complete automated or robotic spraying lines with vertical and/or linear dryers and optional UV curing, complete lines for roller coating and curtain coating, printing lines for panels; and finishing systems for windows and other three-dimensional pieces.

Its Rotomagnum Spray Machine is a rotary spraying machine for high capacity stain-specific applications. It can be added to a line. It can be customized with two sets of 10 guns and the ability to add or switch out multiple recovery units mounted on the machine means colors can be changed without stopping production. A computer interface monitors all diagnostics and can be remote controlled. An optional automated filter change system makes cleaning easier for operators.

Of course you can buy a machine,

however, Venjakob highly touts its ability to supply complete solutions. "Our solutions for purification, pretreatment, activation, drying, automation, and exhaust air purification are used in a whole host of industry sectors around the world," the company says.

Specializing in industrial coatings in particular, Venjakob will tailor systems specifically to the requirements of the production environment whether it's a spray painting line for roof tiles, a powder coating system with inductive powder fusion for chassis parts, or adhesive coatings for brake pad carriers.

"When it comes to planning coating systems and lines, we pay special attention to conserving resources, which begins with our own production operations and ends with an optimally designed spray painting system installed at our customer's location," Venjakob says.

"If your coating operations are limited, you can benefit from our Paint Shuttle system for smaller batches. If you tend to switch colors frequently, the fast, fully automatic color switch system can offer advantages, saving you time and minimizing your use of resources. We can also integrate paint recovery systems into your spray booth if desired, with the corresponding exhaust air purification system."

Cefla offers finishing solutions for a very wide range of processes and materials.

To create a spray-coating line for

wood panels for example, the Cefla integrated solution could include a Flexpro Omnidry vertical oven which can recognize the characteristics of incoming pieces and adjust the passage height accordingly, managing the entire cycle without operator intervention and without stopping production. The Roctre two-arm oscillating spray machine can be used for matte and gloss finishes and applying large quantities of paint. A Smartclean brushing machine can clean the panels prior to finishing while the optional UV-R unit is a radiation curing oven which combines all parts of the process in a single module: conveyor, UV unit and control panel.

The same line could be adapted to decorate furniture elements, stairs, noise barriers or other finished products with similar characteristics.

"This system enables a high degree of flexibility to handle varying production needs," Cefla says. "It is comprised of different machines for brushing/cleaning, spraying, flash-off and curing and requires no more than 125 sq. meters (1,345 sq. feet) of floor space." The company offers a larger line which uses approximately 2,152 sq. feet of floor space.

No flatline system is ideal for all purposes, however, today's systems are highly adaptable and intelligent and can offer users productivity and finish standards not previously possible. ■

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# Speeding Up the Powder Color Change Process

BY HARSHIT NIGAM

**COLOR CHANGE** is a precarious issue in a powder coating system compared to a liquid coating system. The downtime required for a color change in the powder coatings system could extend to more than two hours, and hence presents large obstacles for coating manufacturers in adopting the coating method. The process hinges on improving first-pass transfer efficiency (FPTE) and integration of advanced technology to achieve a quick color change.

Transfer efficiency is defined as the ratio of the amount of powder deposited on the substrate to the amount of powder directed to the substrate. In the coating process, powder materials are attracted to the surface of the grounded component through the electrostatic charge caused by the gun generator. A higher charge on the powder particle improves the transfer efficiency. A high first-pass transfer efficiency can be attained through numerous processes such as maintaining high gun voltage, maintaining gun target distance between six to 12 inches, optimum powder output velocity, and proper part orientation.

The variables impacting the time required for color change are associated with a reclaim system that includes booth type (manual or automatic), number of booths, spray-to-waste, recovery system (cyclone separator, or cartridge booth), booth canopy type, powder gun type, and number of powder guns. These variables affect the time utilized in color coating change. Modifications in the aforementioned variables could enhance system capability, providing quick turnaround and facilitating the fast delivery of products, resulting in wider adoption of the technology.

The powder coating reclaim system utilizes cartridge collector technology and cyclone technology. The cartridge systems employ cartridge collectors to reclaim powder formulations or individual colors. It reclaims overspread powder by a self-cleaning cartridge, which contains a detachable color module. In the color-changing process, the guns, pumps, booth canopies, and hoses are cleaned, followed by replacement with the next color module, facilitating quick color change in comparison to other methods.

With cyclone technology, multiple cyclones are utilized to recollect all the powder or color formulations that are sprayed in a booth although the complex orientation of the system and multiple components extends the time for cleaning and the color-changing process.

## OTHER IMPROVEMENTS

Dense phase pumping systems possess the ability to provide efficient flow rate outputs, increasing transfer efficiency by



Left: MG 400 EH systems from SAMES KREMLIN are fitted with a fluidized powder tank. The powder pump is built into the gun and removable for cleaning. Right: Gema's MagicCylinder design ensures low powder accumulations and quick cleaning without entering the booth.

four times in comparison to the conventional pumping system, and further improves coating capabilities for large and complex parts. The low air output over the front portion of the guns avoids powder from gusting away from Faraday areas. This technology offers uniformity and consistency in powder application, in turn reducing the overspread of powder. Further, its repeatability feature without the requirement of adjustment for wear of a pump is contributing to the adoption of the technology. These factors increase material utilization and aid to quick color change.

Rapid technological development led by the industry players is driving incremental advances in gun design, powder pump design, remote feedback loops, and improved electrostatic control in real-time, in turn improving the capabilities of powder coating technology. For instance, powder coating equipment suppliers are offering efficient gun charging mechanisms to enhance efficiency through improved technology, such as advanced corona charging. It allows users to use a gun at high voltage, and low gun current to increase transfer efficiency. In addition, the system manufacturers' focus on automation and smart technology integrated systems in response to consumer demand for quick color change is expected to further proliferate in the business landscape in the coming years. ■

*Harshit Nigam, Analyst, Adroit Market Research.*

# The New World of Waterborne Finishing

**WATER-BASED COATINGS** are made up of various chemical components dispersed in water. The binder is usually an acrylic or polyurethane resin. Since the solvent content is much lower than with standard coatings, their impact on the environment and on human health is decidedly less harmful.

The waterborne wood coatings market is worth approximately US\$ 2.2 billion, says a report by ResearchAndMarkets.com. Indeed, manufacturers have been very busy in research and development to meet the demand for waterborne products that are now so advanced, they have the same or better results and are almost indistinguishable from traditional products.

The market for waterborne wood coatings is currently exhibiting continuous growth, the report says. Catalyzed by growing urbanization in emerging economies across the Asia Pacific, Latin America, and Eastern Europe, there has been a significant rise in the demand. Increasing urbanization has triggered a rise in the residential, commercial, and industrial infrastructure, creating demand for wooden products in these regions. Moreover, rising production of wooden artefacts and decorative items catalyzed by the growth of the global decor industry has also been driving demand.

Waterborne wood coatings offer numerous advantages compared to the alternatives, including robustness, stain resistance, corrosion resistance, and flexibility. Other factors driving the demand for waterborne wood coatings include government regulations to reduce VOCs (volatile organic compounds) emissions, product innovation, and increasing wood use.

Looking forward, the report says the waterborne wood coatings market value is projected to reach US\$ 2.9 billion by 2024, exhibiting a compound annual growth rate of approximately five percent.

Wood coatings are generally traditionally created by combining various layers of shellac, drying oil, lacquer, or varnish, where every layer is followed by sanding, says ResearchAndMarkets.com. On the contrary, waterborne wood coatings are made from a wide range of resins which include ingredients such as acrylic, polyester, polyurethane, fluoropolymer, waterborne powder. Water is added to these coatings to enable the resin to disperse easily.

The coatings are applied on the wood surface to protect and enhance its appearance. The high water content makes them easy to apply and environmentally friendly. The consistency and the composition of the waterborne coatings



Sayerlack's Clear Basecoat AU0420/00 ensures high build, sandability and fast drying and is suited for furniture-makers and electrostatic application.

vary and different solvents can be added depending on the use.

Waterborne wood coatings are non-flammable, almost odorless, contain fewer solvents than their oil-based cousins, clean up easily with water, dry quickly, and are non-yellowing. Because they dry so quickly, applicators will find there is not a lot of dust adhering to the finish.

One-pack water-based products, especially for interiors, have no pot life problems as with traditional solvent-based polyurethane products. They are practical because they are ready to use, and the product can be recovered and reused, provided it is kept in its original tin and carefully closed. Water-based products are available in different formulations and gloss levels, and can be used for finishing wood, glass, iron, and even plastics.

At Sayerlack, a division of Sherwin-Williams, its Hydroplus water-based coatings are designed to reduce the absorption of moisture and solar radiation. The company says its transparent and pigmented Hydroplus thixotropic topcoats have good elasticity, vertical hold, distension and resistance to tin sedimentation.

Durability has always been a major criterion for success when evaluating wood coatings for exteriors. With Hydroplus, Sayerlack says, a high degree of elasticity is maintained over time. This allows the paint film to follow the movements of the wood without being damaged.

In order to withstand the sun, clear products in the Hydroplus series have been formulated with UV absorbers to prevent the UV radiation from striking the wood directly and accelerating wood degradation.



The lacquered finishes in the line contain very opaque pigments that are resistant to sunlight. Hydro Gold, Sayerlack says, represents a high-tech range of coatings for exteriors with an international patent and guarantee of durability up to 18 years.

Sayerlack says Hydroplus products can be applied with normal spray coating systems (cup, airless, airmix, electrostatic) as long as the construction materials of the equipment are suitable for contact with water.

Katilac Coatings Inc. says when it comes to choosing greener options for wood coatings, waterborne is the number one option for its customers. It has been a slow transition from traditional solvent-based products to those based in water, Katilac says, mainly because of the learning curve with respect to application.

“Oftentimes, the demands of production leave little room for experimenting with new finishing procedures,” Katilac says. “However, this small amount of time spent on understanding application methods of waterborne wood finishing systems will have a massively positive impact of the health of applicators, end users, and the environment.

“Within the industry, there are many different application methods, and wa-



PPG’s Aquacron 270 Series waterborne acrylic sanding primer is a fast-drying, single-component primer/sealer for interior wood, wood-related and plastic products.

terborne wood coatings do not apply ideally at the same application settings as their solventborne counterparts,” Katilac continues. “The transition to a waterborne finishing system involves mild, but vitally important, changes to spray equipment settings. It should also be noted that they are designed to be applied at a higher viscosity than solventborne wood finishes. Not knowing this fact may cause applicators to over-reduce their waterborne coatings.”

Katilac’s two lines of waterborne wood coatings are the AE Series AQUA-ELITE and AX Series WOOD-GUARD. Both systems are designed to be spray-ready and do not require any reduction. Over-reduction of a waterborne wood finish can cause issues

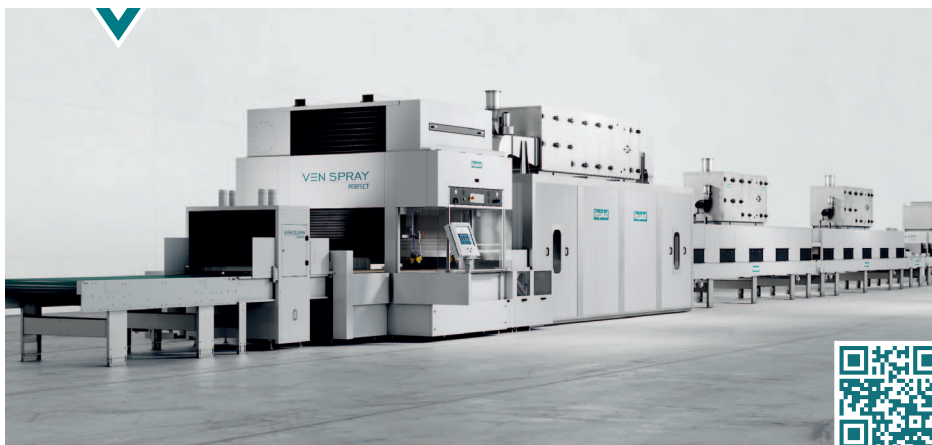
such as runs and sagging.

Axalta says its waterborne products incorporate coatings technologies to match the durability and performance of traditional solvent-based products, but with low odor and VOC-compliant solutions.

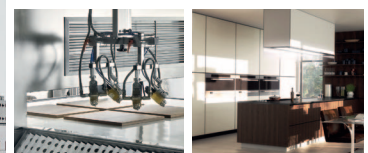
Its waterborne technologies range from acrylic resins designed for durability on building exteriors to primers for doors and moulding products. The Zenith range is formulated to provide intense, rich color tones and yield a finish that is tough and resists household chemicals. Some of the Zenith line surpasses Kitchen Cabinet Manufacturers Association (KCMA) performance requirements and some are GREENGUARD certified.



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## WATERBORNE WOOD FINISHES

Axalta says Zenith coatings deliver improved mar and scratch resistance, are easy to apply, odor-free, non-yellowing, and normally dry in less than 30 minutes. Recommended for kitchen and bathroom cabinets, fine furniture, interior woodwork, office furniture, and architectural millwork, the system is available in a wide variety of colors, low VOC, HAPs-free, and both formaldehyde- and isocyanate-free formulations so customers can comply with environmental requirements.

PPG's Aqualink is a water-based coating primarily used for interior and exterior window and door applications. Featuring low VOCs with solid chemical resistance, Aqualink is available in clear-based products with tinting capabilities.

Easy to apply and fast drying, Aquacron waterborne liquid primers and topcoats are engineered for industrial finishing. Aquacron solutions

provide an alternative to solvent-based coatings where flammability and solvent exposure issues are critical.

The PPG Aquacron 270 Series waterborne acrylic sanding primer has been available for about a year and is single-component primer/sealer for interior wood, wood-related and plastic products.

Designed for conventional, HVLP and commercial airless spray systems, it offers good hardness and adhesion and excellent sanding properties, the company says.

"PPG Aquacron 270 sanding primer combines exceptional performance with faster drying times," says Michael Kowalski, PPG TRUEFINISH Light Industrial Coatings Coordinator. "This new primer dries to the touch in 10 to 20 minutes and can be recoated or finished with a topcoat within one to two hours. The product also gives manufacturers the opportunity to ac-

celerate their production processes because they can use ordinary tap water to thin or reduce the viscosity of the primer."

Engineered for application with PPG Aquacron 200, 201, 380 and 870 series topcoats, PPG says the primer is ideal for interior building and decorative products, such as doors, windows and trim, shutters, cabinetry, furniture, signage, and displays.

With the OECD stating the "global economy faces a tightrope walk to recovery", it is the emerging economies that are expected to first boost demand for products such as furniture, and thereby demand for industrial wood coatings. With manufacturers remaining focused on the development of sustainable coating solutions, major acceptance will occur over the long term as companies continue to realize the important cost and health benefits they bring. ■

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# New Chromium Electroplating, Chromium Anodizing and Reverse Etching Regulations Take Effect

BY STEWART TYMCHUK

## SOR/2009-162

Recently, the Chromium Electroplating, Chromium Anodizing and Reverse Etching Regulation was amended. The goals of the regulatory amendments were to both provide more flexibility and consistency for facilities to comply with the Regulations and to clarify regulatory requirements in light of currently available technologies.

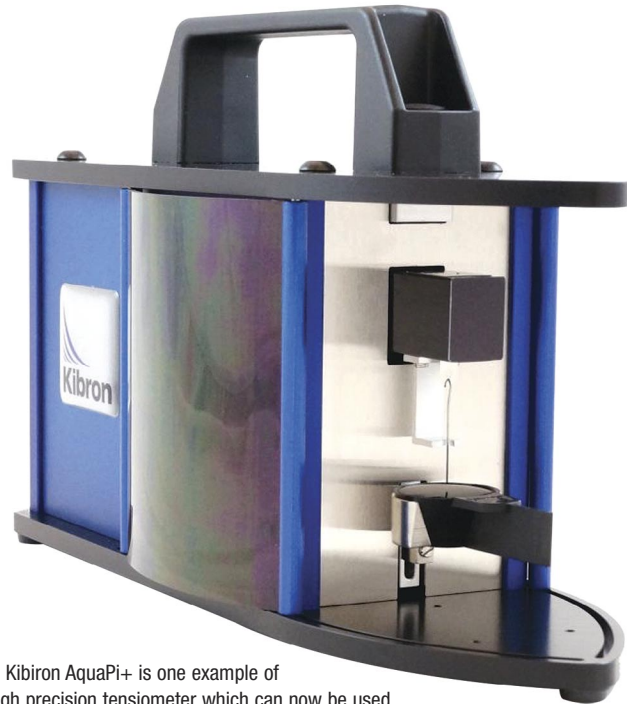
In essence, the Regulations previously required surface tension measurements be made with a tensiometer and be performed in accordance with ASTM D 1331-89 (re-approved 2001), Standard Test Methods for Surface and Interfacial Tension of Solutions of Surface-Active Agents. New and different types of tensiometers are now available which are not based on the principles of the du Nouy tensiometer and therefore do not require a reference to ASTM D 1331-89.

## APPLICATION

These regulations apply to any facility that uses a solution containing a hexavalent chromium compound for chromium electroplating, chromium anodizing or reverse etching in a tank where 50 kg or more of chromium trioxide (CrO<sub>3</sub>) is used per calendar year.

## GENERAL REQUIREMENTS

- (1) Each facility, where the regulation applies, must control the release of hexavalent chromium compounds from each tank by one of the following methods:
  - using a point source;
  - limiting the surface tension of the solution in the tank;
  - using a tank cover.
- (2) Each facility must submit a notice to the Minister indicating, for each tank, the method used to control the release of hexavalent chromium compounds.
- (3) If the release of hexavalent chromium compounds from a tank is controlled by limiting the surface tension of the solution, the notice must state whether a tensiometer or a stalagmometer is or will be used to measure surface tension.



The Kibron AquaPi+ is one example of a high precision tensiometer which can now be used under the new regulations for more reliable, faster, and precise measurements.

- (4) Each facility intending to change either the method of controlling the release of hexavalent chromium compounds from a tank or the surface tension measurement method for a tank must notify the Ministry.

## USE OF A POINT SOURCE

Each facility that controls the release of hexavalent chromium compounds from a tank by using a point source must use a control device in the emission collection system and must not release more than 0.03 mg/dscm of hexavalent chromium from any point source.

Each facility required to comply must perform a release test establishing compliance at each point source and perform a new release test at least every five years afterwards, providing the average of three sampling runs from that test did not exceed 0.03 mg/dscm of hexavalent chromium from any point source.

These tests must be repeated if the facility has replaced a control device, increased the total surface area of the solution by more than 25 percent or made changes to the ventilation system that affected the velocity or the flow rate.



## CHROME REGULATIONS

### LIMITING THE SURFACE TENSION

- (1) Each facility that controls the release of hexavalent chromium compounds from a tank by limiting the surface tension of the solution containing a hexavalent chromium compound must maintain the surface tension in that tank at a value of less than
  - (a) 35 dyn/cm if the surface tension is measured with a tensiometer; or
  - (b) 45 dyn/cm if the surface tension is measured with a stalagmometer.
  
- (3) Each facility must measure and record, for each tank, the surface tension of the solution containing the hexavalent chromium compound once every day during which the tank is used and the measurements must be taken at least 16 hours apart.

### CHROMIUM ELECTROPLATING, CHROMIUM ANODIZING AND REVERSE ETCHING REGULATIONS

**SOR/2009-162**

**CURRENT TO FEBRUARY 28, 2019**

- (4) The surface tension must be measured in accordance with
  - (a) the ASTM International method ASTM D 1331-89 (Reapproved 2001), Standard Test Methods for Surface and Interfacial Tension of Solutions of Surface Active Agents, except Method B, as amended from time to time, if measured with a tensiometer; or
  - (b) the manufacturer's instructions, if measured with a stalagmometer.

### CHROMIUM ELECTROPLATING, CHROMIUM ANODIZING AND REVERSE ETCHING REGULATIONS

**SOR/2009-162**

**CURRENT TO MAY 17, 2020**

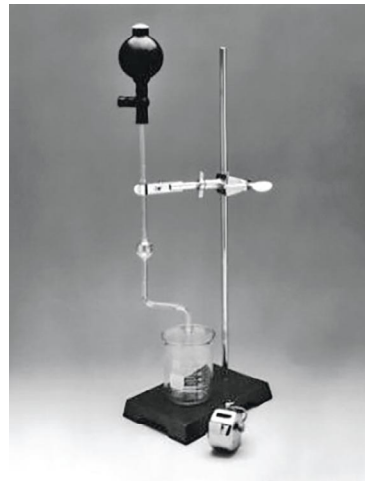
- (4) The surface tension must be measured in accordance with the instructions of the tensiometer or stalagmometer manufacturer, as the case may be.

### USE OF A TANK COVER

Each facility that controls the release of hexavalent chromium compounds from a tank by using a tank cover must ensure that the cover is closed while chromium electroplating, chromium anodizing or reverse etching is taking place and that the cover complies with specified characteristics. Inspection plans must be implemented and maintained.

### REPORTING AND NOTICES

Each facility that performed a release test must continue to submit to the Minister a report as previously outlined.



These du Nouy rings (right) and stalagmometer (above) were the only accepted methods of measuring surface tension under the old regulations.



### RECORD KEEPING

The owner or operator of chromium electroplating, chromium anodizing or reverse etching equipment must continue to keep all records, reports, inspection and maintenance plans, floor plans depicting the location of tanks and if applicable, the location of control devices and fans, test results and other information required by these Regulations at the facility where that equipment is located or, on notification to the Minister, at any other place in Canada where the documents can be inspected for a period of at least five years beginning on the date of their creation.

### COMING INTO FORCE

These Regulations come into force 30 days after the day on which they are registered.

This consolidation is current to May 17, 2020. The last amendments came into force on March 16, 2020.

### THE FUTURE

New available technologies are significantly faster, do not require any calculations to derive surface tension, nor the monotony of counting drops of chromic acid liquid. The du Nouy rings and glass stalagmometers, unfortunately, are known to be very fragile.

Simple, robust, high precision tensiometers are now able to be used to keep facilities in compliance. The instruments are very fast and easy to use, requiring no special training. The calibration times are short, requiring only water to calibrate. The measurement itself is done in less than 30 seconds, with a clear digital readout for surface tension values.

The Kibron AquaPi+ is one such instrument, distributed exclusively in Canada by Dynamix Inc. ■

*Stewart Tymchuk, C.E.T., Dynamix Inc.*

# Achieving the Perfect ZINC PLATE



BY PAUL FREDERICKS AND JEFF LOGAN

**ZINC PLATING IS A WIDELY** used coating for the sacrificial corrosion protection of steel. It is used throughout the range of industry, especially on stampings, fasteners and automotive parts. Zinc also provides an excellent base for painting and other coatings. The final product is aesthetically pleasing, typically very bright, and quite uniform in thickness.

Zinc is applied through the process of electroplating. The steel parts get a cathodic, or negative charge applied to them which attracts zinc metal ions from the plating

bath to the surface of the part. When these ions contact the steel surface and the negative charge, they are reduced to metallic zinc and electrochemically bonded to the steel surface creating the zinc deposit. Chemicals are added to the bath to modify the deposit to make it smooth, uniform and bright. Small parts that are not fragile can be barrel processed which saves cost while larger parts and parts with fragile critical features are rack plated to avoid damaging the parts in the barrel.

Zinc is almost always provided with a supplementary

chromate or passivate which runs the range of color from blue bright or clear, to iridescent, yellow, bronze, olive drab, and black. Most chromates today are trivalent (+3) due to the toxicity of hexavalent chromium (+6). Though the correct technical term for

trivalent chromium coatings is "Chromite", the term chromate has been around so long people use it interchangeably and simply refer to the coating as "Trivalent Chromate".

The chromate is a conversion coating on top of the zinc that is sacrificial

to the zinc plating. Corrosion resistance is good with the new generations of chromates, typically reaching 48 to 120 hours neutral salt spray to white corrosion. Yellow trivalent chromates perform equally well, however, unlike their hexavalent predecessors, trivalent yellows are made yellow with a dye. These dyed systems usually result in very poor adhesion for subsequent processes such as paints, powder coats, adhesives, and other coatings.

Thick film or high-performance chromates can exceed 240 hours to white corrosion. Hexavalent chromates are still available but capacity is limited as most platers do not use or offer hexavalent chromate options for zinc due to environmental and health regulations coupled with mandates such as RoHS and ELV Directives. The appearance of red rust is a function of the zinc thickness once white corrosion occurs.

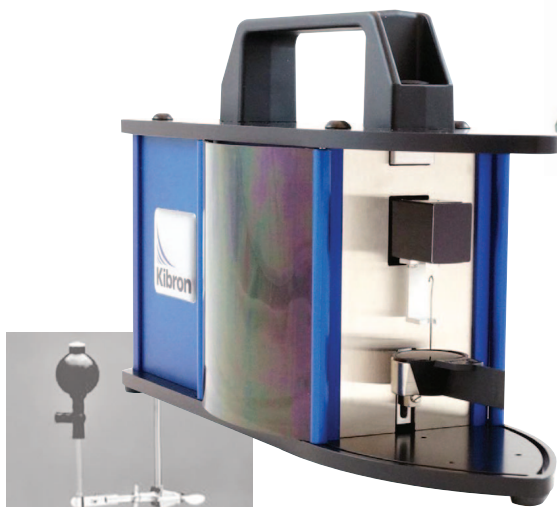
Zinc plated and chromated parts may also have topcoat seal applied. These seals, which are normally either silicate-based organic topcoats or lacquers, have two primary functions. They offer added corrosion resistance to the chromate and zinc system by providing a barrier to the chromate and, depending on the formulation, some protection to bare surfaces such as deep holes and tube IDs.

The other benefit these seals can provide is modification of torque tension properties to provide a consistent coefficient of friction. This is important in robotic/automated assembly where torque tension and torque retention can be critical properties in safety.

Substrate preparation is the most critical factor in achieving a top-notch finish and maximum corrosion resistance. Certain parts may require additional pretreatment outside the normal process. If parts are heavily covered in excess machining coolant or stamping oils, a degreasing operation is usually needed to remove the excess oils and to avoid contamination of the plating line baths. This can be done online or offline depending on

## Regulations have changed in Surface Tension Measurements

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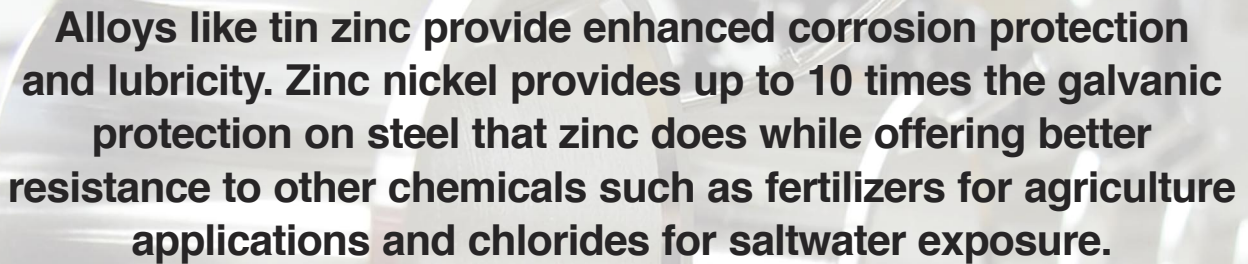
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**Alloys like tin zinc provide enhanced corrosion protection and lubricity. Zinc nickel provides up to 10 times the galvanic protection on steel that zinc does while offering better resistance to other chemicals such as fertilizers for agriculture applications and chlorides for saltwater exposure.**

the plating system set-up.

Heat-treated parts present certain risks that must be accounted for and require best practices to ensure the integrity and safety of the part when put into use. If a part is hardened and then machined, ground, cold formed or cold straightened after being heat-treated, that part should be stress relieved by baking prior to pretreatment and plating. Media blasting such as glass bead and shot peening as well as thread rolling impart a compressive stress on the part which actually improves the function of the part and therefore it would not require a stress relief bake prior to pretreatment.

Parts with scale may first require descaling before processing to promote good plating adhesion and an aesthetically pleasing finished part. This may include welded fabrications, heat-treated parts with heavy scale, hot rolled steel, and thermal deburred parts. There are several options for descaling including alkaline descalers, acid descalers and pickles, and media blasting or tumbling.

Acid pickling should not be done on heat-treated parts as this process can impart a condition called hydrogen embrittlement, which can render the steel part very brittle due to the entrapment of hydrogen gas in the steel. Unfortunately, this defect is typically not discovered until failure occurs after the part is put into use and under load. Media blasting is the preferred method for scale removal on hardened steels. They are usually the most costly methods as well.

Most parts do not require the pretreatments described above and are typically processed through the plating line right out of the containers they

were shipped in. There are two typical process flows in zinc plating:

#### **RACK SYSTEM**

**Soak Cleaner** – To remove soils, grease, oil, etc.

**Electro Cleaner** – To loosen and remove oxides and scales and other tenacious contaminants.

**Acid Activation** – To finish removal of any oxides and metallic contaminants and to activate the substrate for zinc.

**Zinc Plate** – Parts are plated to thickness specified for the corrosion resistance required.

**Chromate/Passivate** – To add the specified conversion coating to provide the finish and corrosion resistance required.

**Seal** (if required) – To further add to the corrosion resistance and if required to impart a specific coefficient or friction to modify torque tension properties of plated part.

#### **BARREL SYSTEM**

**(most common with fasteners)**

**Soak Cleaner**

**Acid Activation**

**Electro Cleaner**

**Weak Acid** – To neutralize the alkaline electrocleaner and keep parts active for plating.

**Zinc Plate**

**Chromate/Passivate**

**Seal** (if required)

Throughout the world, zinc is one of the most widely used corrosion-inhibiting coatings. It has been electroplated onto parts since at least the start of the 19th century when electro galvanizing research was sparked by Alessandro Volta's invention of the

electrochemical battery.

The finish has endured due to the reliability of the process, the cost effectiveness of the finish, and the availability of the process. It endures despite ever growing regulatory pressures such as RoHS, REACH, ELV, and other laws and directives. In the 1980s, tightening regulations and the need for better corrosion protection and replacements for toxic processes such as cadmium and hexchrome chromates led to a new wave of research. This research led to the invention of hexavalent chrome free passivates and zinc alloy coatings that improved on the zinc electroplate while providing environmentally friendly alternatives for many environmentally unfriendly processes.

Alloys like tin zinc provide enhanced corrosion protection and lubricity. Zinc nickel provides up to 10 times the galvanic protection on steel that zinc does while offering better resistance to other chemicals such as fertilizers for agriculture applications and chlorides for saltwater exposure.

When done properly and with the proper attention to alloy constituents and alloy condition, zinc electroplating is an easy choice for applications throughout virtually every industry. As a finisher, make sure you get all the information to properly pretreat, plate and post treat the parts. As a manufacturer looking to get your parts plated, make sure you provide the finisher with all the information needed to provide a process that utilizes best practice to yield the desired quality zinc plating finish. ■

*Paul Fredericks is Founder and CEO, Aerospace Metals LLC. Jeff Logan is President, Saporito Finishing.*

# Plating Makes **PLASTICS POP**



**THE PAINT AND COATINGS** industry plays a major role in that new car look we all love. From the sparkling paint job to the shiny chrome trim, specialized processes that have been perfected over time make automobiles and all kinds of products pop.

But shhh... the gleaming chrome trim on that new car and the shiny knobs on those appliances are actually, gasp, plated plastics.

While plating is most commonly viewed as a finishing process for metals, it can be used with great success on non-conductive materials as well, says Sharretts Plating. Plating on plastic resins can be extremely effective in a

wide range of industrial applications.

Metal-plated plastics have achieved widespread popularity, due to advancements in polymer chemistry coupled with developing production technologies. That is why we see many areas of application in the market for plating on plastics, such as automotive, electronics, utilities and other consumer goods.

Plating on plastics goes back to the 1960s, says a report by Grand View Research, being practiced in Europe and North America. However, achieving a strong bond between a metallic coating and the plastic substrate proved to be extremely hard for manufacturers, which can explain its

low level of acceptance in those days. However, the adhesive properties of plastics were enhanced through the implementation of a chromic acid-based etchant that, to cite one example, was used for the surface treatment on acrylonitrile-butadiene-styrene (ABS), a thermoplastic terpolymer. The process found usage first in the automotive industry in the 1970s, and a variety of areas such as plumbing, electronics and household product manufacturers adopted it in the 70s and 80s.

Toronto-based Leader Plating on Plastic is a family-run business that has been plating bright chrome on plastic since 1979. It began with appliances for companies like Inglis and Whirpool.

Now Leader's clients include a long list of major automotive manufacturers where chrome is becoming pervasive. "Motorcycles love chrome," says Rob Corazza, Plant Manager.

The resins are important. A variety of resins are used for plating on plastic applications, although 90 percent of these applications are ABS, the Grand View report says. It has an acrylonitrile-styrene matrix which is evenly distributed with butadiene rubber, which leads to effective plating. The butadiene is etched out from the matrix, leaving microscopic holes that are utilized as bonding sites by the plate. Other factors that have encouraged the large scale use of ABS are the ease of molding, high metallic adhesion, affordability and low coefficient of thermal expansion.

Other resins that may be used for the plating on plastic process include PEI (polyetherimide), PBT (polybutylene terephthalate), LCP (liquid crystal polymer), PEEK (polyether ether ketone), and nylon/polyamide, among others.

PEEK and polypropylene can only be plated in a blended form, says Grand View, adding that ABS polycarbonate (ABS/PC) is expected to witness solid demand in the plating on plastics market in the coming years.

The blend contains 40 to 60 percent of ABS, while the remaining is made up of PC. This mixture offers high ductility and strength, and can be used in extreme temperatures.

The typical plating on plastic process involves these steps:

- **Cleaning** – Requires a mild alkaline, or in certain instances, a chromic acid solution.
- **Pre-dipping** – Helps improve the surface of poorly molded, highly stressed parts. Also makes it easier for etchant to react and attack the surface.
- **Etching** – Etchants generally consist of sulfuric acid or chromium trioxide solutions, which help to increase the substrate surface, thus enhancing liquid absorption.
- **Conditioning** – An optional step in the plating on plastic process,

this helps in promoting a more uniform absorption during the activation stage.

- **Neutralizing** – Neutralizers such as sodium bisulfite can help ensure the elimination of any excess etchant.
- **Pre-activating** – Pre-activator helps in facilitating absorption during the activation stage of the plating on plastic process. They work well with polypropylene or polyphenylene oxide.
- **Activating** – Involves the usage of low-concentration precious metal liquid activator, which serves as a catalyst during plating. Typical metals found in activators include platinum, gold and palladium.
- **Accelerating** – Accelerators removes excess stannous hydroxide from the part, and also prevents skip plating occurrence during the plating on plastics process.

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**Facts and Figures**

The global plating on plastics market size was estimated at US \$411.6 million in 2016.

- Increasing demand for lightweight metal substitutes in the automotive and electronics industries are key driving factors.
- Plating on plastics refers to electroplating the plastic surface with metals such as nickel, chrome, electroless nickel, copper, cobalt phosphorous, gold, silver and others.
- Chrome plating is the most commonly used metal for coating applications. Nickel and copper follow.
- ABS/PC is expected to witness the fastest CAGR of 8.6 percent from 2017 to 2025.
- The automotive industry in North America and Europe was the pioneer to implement nickel and chromium coating on plastic resins on a commercial level.
- Electronics is another key application segment. Copper is preferred.
- Decorative applications of nickel and nickel/chromium masking are used to improve the aesthetic appearance of plastic trims on computers, mobile phones, knobs, buttons and switches in electronic goods.
- Europe dominates the overall market in terms of revenue followed by North America. Europe is majorly driven by automotive industry in UK and Germany. Chrome finished automotive parts have attained considerable popularity in Europe and North America.
- Asia Pacific is expected to register the fastest CAGR of 8.2 percent through 2025.

*Grand View Research*



and add a touch of color. It adds an impression of premium quality to the product and also delivers design freedom to manufacturers. The metal coating can also increase resistance to certain types of chemicals that may be used in various manufacturing processes or may be present in the environment.

However, certain complications arise while plating plastics, says Grand View. They are electrically non-conductive and are unable to withstand the process of being immersed in a metal solution. To overcome these problems, substrate etching and electroless plating were developed to plate plastic substrates.

Manufacturers frequently prefer ABS as it cheaper, easy to mold and has lesser coefficient of thermal expansion than other plastics, says Grand View.

Grand View says there is major growth potential in the plating on plastics market where ongoing research and development activities are focusing on new production technologies such as chromium-free etchant, double layer nickel systems and micro-discontinuous chromium systems.

Corazza also sees potential as suppliers continue to devise new and exotic colors that they provide to designers at the OEM which they integrate into the interior or exterior of the vehicle, for example.

The key to success for any operation, he stresses, is controlling the process. “That’s really the heart and soul of the operation. If that’s humming along then you’re pretty well guaranteed you’re going to get good parts.”

And that means you’ll also get customers. ■

• **Bath Immersion** – After rinsing, the plastic parts are placed in an electroless bath to deposit a thin metal coating. Nickel is generally used in the process, although some instances utilize copper.

Corazza says the process is obviously the most important thing to get right.

“Once your process is in line – all your concentrations, temperatures, all that is within your allowable limits – then you’re pretty well guaranteed that you have a good result.”

What you sometimes cannot control, he adds, are the molded parts that are supplied by the customer. “They may have problems that are inherent when they were made through the press.”

At Leader, the typical cycle time is two-and-a-half hours from start to finish. Shops differ, as it all depends on the number of baths, Corazza adds.

When it comes to the type of metal used in the plating on plastics process, chrome and nickel have seen huge demand from various industries, according to Grand View. The former

offers good surface finish, aesthetic appeal and is used for plating arm rests, grills and motorcycle parts. Trivalent chrome finds extensive usage in these applications as it is less environmentally problematic than hexavalent chrome.

Nickel is used mainly for decorative purposes in the automotive sector, where it is used in exterior and interior vehicle parts such as door handles, bumpers, emblems, wheels and gear shift knobs, among others. Copper has also seen significant growth in demand in the plating on plastics market, mainly from the electronics industry, where high electrical conductivity is required in many products.

Advantages offered by the finished material are creating huge demand for the overall plating on plastics industry. Plastics have added benefits over metals as they are lighter, corrosion-resistant and usually inexpensive.

Aesthetics are also an important benefit of adding metal to a plastic substrate, says Sharrett. A coating of a metal can significantly brighten the appearance of a plain plastic surface

## Staying Current with Power Supply Technology Delivers a **Quality Finish**

**THERE ARE PLATING AND ANODIZING** operations that still run on home-made power systems. For small parts, in low volumes, this can be a viable approach.

The problems arise when the company gets, or tries to find, large volume orders, or needs to deliver high-quality surface finishes. At this point, rectifiers become not just a desirable accessory, but essential plant equipment. Being able to maintain a steady DC current is the only way to ensure quality results in metals coating operations.

Switching a standard AC power supply to DC is not a difficult process on its own, but it does produce a certain percentage of ripple voltage. Constantly measuring this effect in the plant, to be sure it is not becoming a significant issue, is something modern rectifiers offer as a standard feature.

The direct current essential for a successful plating process can come from a low-voltage generator. Originally, generators were the main source of direct plating current, but because they could be relatively expensive to acquire and maintain, rectifiers became the preferred, and cheaper, alternative.

A standard rectifier is made up of one or multiple diodes that are responsible for the conversion from AC to DC. Modern rectifiers use semiconductors to carry out the current filtration process, and when AC is removed, direct current will now flow through. Diodes are one of the devices used by a rectifier to carry out the conversion.

Thyristors offer another form of control for plating rectifiers. The usual term here is SCRs, for silicon-controlled rectifiers. Although these are also diodes, they require a control signal at a “gate” or terminal.

The SCR works as a regulator and a rectifier, depending on if it is used on either the primary or secondary side of the rectifier transformer. The design of the SCR on any of these two sides depends on the purpose of the rectifier: the application, the efficiency of the unit, the cost implication and the reliability.

SCRs do have the issue of producing a direct current that is contorted by ripple. Some larger plating rectifiers can produce ripple that is five percent or below their rated capacity.

To electroplate precious metals, chromium, alloys or other metals, the process requires a lower ripple rate. However, if the ripple is too high, a filter can be necessary to smooth the rectifier wave.



A DC power supply from Darrah Electric.

North American Rectifiers (NAR) offers its Real Time Ripple system as its high-end offering in this area. This, the company says, offers users the ability to obtain the actual ripple in their process in real time, right at the face of the controls.

The company has both air- and water-cooled systems in its Switch Mode Rectifier range. These have controls featuring ethernet/IP, modbus, Profibus, analog/IO, and various communication platforms. They can provide more than 40 diagnostic feedback messages, when used with the standard PE 280 controller.

The company says its Power Station rectifiers and Power Pulse-Reverse power supplies, made by Plating Electronic, “are designed precisely to meet the rising demands of electroplating processes. Innovative technologies and impressive performances, such as the digital switch mode technology offer high degree of efficiency, minimum residual ripple and peak control accuracy.

“These features all open up new opportunities, process

consistency and the accuracy of your coating systems. The ultra-compact construction of the power sources with water cooling and the variety of air-cooled power supplies smooth the way for new, efficient system designs.”

NAR also offers its Elexor coloring power stations, which it states can process dark colors up to 35 percent faster than conventional power supplies can. They also process lighter colors, with repeatable exact batch color-matching.

They can equally shorten long coloring times for dark colors, saving energy and increasing productivity; or lengthen short coloring times for light colors, reportedly with high process reliability. In each case, the user can define the color and process time required.

Darrah Electric Co. manufactures a full range of high current DC power supplies, available with either air or water cooling in output ratings to 50,000 amps, up to 1,000 volts DC. All standard input line voltages and frequencies are offered. Each unit is made specifically to customer specifications.

Darrah’s touchscreen programmable controllers for plating rectifiers provide, the company says, repeatable process control for all metal finishing applications. “These programmable controllers will help eliminate operator error, improve efficiency, and produce consistent results. The programmable controllers will also save time, power, and chemicals,” Darrah states.

The newest programmable controllers can easily be retrofitted to existing company rectifiers and other brands. Simple wiring is done to replace the existing rectifier remote control the controllers can be mounted on the front door of the power supply, or placed in a remote location.

From the touchscreen programmable controllers, the operator will be able to choose between manual and automatic modes. In manual mode, the operator can start, stop, and control the DC output voltage and current. In automatic mode, the operator can manage up to 12 preset recipes, each individually named and stored.

The controllers will also manage ampere time meters, batch or cycle timers, adjustable DC voltage and current ramp, and stepped ramp processes. The control further includes a non-resettable cumulative ampere time counter.

Daily operations and results can easily be exported via USB drive in Excel format, then stored or printed. The controllers feature a seven-inch, 800 x 480 pixel LED screen with a user-friendly, high resolution, full-color display.

American Plating Power offers a broad selection of SCR/Thyristor style rectifiers and a wide range of switch mode (IGBT) power supplies. All products, the company says, are designed for 24/7 operation with proprietary features to ensure reliable operation in harsh production environments.

Current ranges go up to 100,000 amps, and DC voltages up to 900 VDC. Cooling methods include air, water, or oil. The company also specializes in large scale switch mode

technology, with unit sizes up to 30,000 amps.

The company also has various specialty products, such as variable transformer rectifiers and AC/DC color anodizing systems. Control options include analog (0-10 volts or 4 to 20 mA), Profibus, Modbus, and Ethernet among others.

Dynapower’s SCR rectifiers are also available in water-cooled, air-cooled, or oil-cooled designs. They are offered with a deep hole-drilled, silver plated, copper bus bar.

Various NEMA ratings are available to meet the protection rating best suited for a user’s application, and there is protocol compatibility with Profinet or Ethernet/IP, and similar systems.

At the large end of the scale, the company designs and manufactures thyristor rectifiers and fast switching IGBT chopper rectifiers for large applications such as electrowinning, electrochemical, electrorefining, electroplating, and other specialized applications. These are available in six, 12, 18, and 24 pulse sets with higher order combined systems available.

Each multi-pulse arrangement is in an ANSI configuration that is selected for the voltage/current values of the application. The multi-pulse criteria is selected to reduce the supply side harmonic content, reduce output DC ripple, and provide improved regulation.

Dynapower’s high power chopper and thyristor rectifiers are engineered, designed, manufactured, and tested to internationally recognized standards including ANSI, IEEE, IEC, NEMA, UL, CSA, JEC, and others. Design capabilities include the complete High Power Transformer Rectifier System, which is inclusive of fully integrated operator interfaces and control systems for a single unit or entire multi-unit SCADA network.

The chopper and thyristor rectifiers may also be provided with auxiliary equipment as required by the specification, including switchgear, power factor correction, harmonic filters, heat exchangers, and free-standing cooling systems. The chopper rectifier designs consist of high-frequency switching technology in a modular design package that converts the transformer secondary AC voltage to a regulated output DC voltage. Larger power systems are constructed of multiple chopper modules to obtain the specified current requirements.

Improved controls have made a major difference between today’s rectifiers and power systems, and those of a dozen years ago. The result is that plating and anodizing of larger or more complex parts has become easier and more predictable.

This, combined with the fact that construction and assembly is often done to a higher standard than used to be the case, guarantees that the currently available systems offer a high degree of reliability. The result is that metal plating processes are now much more controllable and predictable, and customer satisfaction has become a more attainable goal. ■



# Colorants Continue Making Paint Formulation Easier

**THE SCIENCE OF COLOR** has advanced on several different fronts in recent years. Pigments and their light-scattering properties are better understood than they used to be, as is the process of dispersion in paints.

Computerized color scanning and measuring systems have helped refine such concentrates and dispersions. The human eye is the final – and still the most valuable – color-measuring system, but color assessment is notoriously subjective, and having digital capability is the best way to get a colorant right for a customer's needs.

AkzoNobel, for example, offers its Chromascan client software for paint formulators. This has been designed for an international audience, to provide a simple but comprehensive means of ensuring color accuracy.

It is available in a variety of languages and is regularly updated. The company's expertise in color analysis is such that it has worked with Amsterdam's Rijksmuseum, with its large collection of paintings by Rembrandt and other Dutch masters, to create a digital record of all the artwork.

On the less exalted level of paint systems for heavy-duty types of transportation, Axalta offers its Product System Selector. This is programmed to work with the company's Imron Elite, Excel Pro and Rival colorant systems. It contains a reported total of thousands of color formulas, to create new shades or match an existing finish.

"The Product System Selector allows you to specify your project criteria to generate recommendations for good, better, and best finishing systems," the company says. "It is specifically designed for customers in the heavy-duty truck, fire and emergency vehicles, bus, beverage vehicles, sanitation trucks, and RV industries."

BASF's main entry in the colorants field is its PureOptions product line. This consists of APEO-free, aqueous pigment dispersions that can be used for either point-of-sale or in-plant tinting.

"They offer a superior sustainability profile including Greenguard Certification from UL Environment," BASF says. "PureOptions colorants are formulated with optimized rheology for reliable, accurate and precise dispensing through automatic tinting machines.

"Customers are able to match deeper shades in whiter, more opaque bases. This means fewer coats needed for good coverage."

The key features and benefits include low VOC content (compliant with SCAQMD Rule 1113), and an

absence of alkylphenol ethoxylate (APEO) surfactants. The products are also formaldehyde-free, and feature low odor levels. They are packaged in resealable, recyclable plastic containers.

Chromaflo is another provider of a software solution for formulation, which it calls Innovatint. This, Chromaflo says, "offers the perfect blend of artistic understanding and advanced technology. It is an integrated paint tinting software that ensures perfect performance and control throughout the complete color matching and color tinting process."

The intention is to make ordering colors quicker and more efficient, opening up sales opportunities and improving customer service. With its ability to analyze tinting and sales data in real time, it can help paint blenders control their overall business operations.

The company's Chroma-Chem colorants for interior and exterior automotive coatings offer, it says, high performing products that are compatible across multiple coating chemistries. Primary applications include automotive OEM, automotive aftermarket, and automotive refinish.

The Chroma-Chem products for OEM coatings [both solvent and water-based] are described as "highly compatible product lines based on multiple product chemistries. These colorants offer high consistency in both opaque and transparent colors."

One segment from the range is the Chroma-Chem 895 colorants. These, the company explains, are part of a series of environment-friendly coatings for industrial coatings. They are low-VOC, and glycol-free, and are designed for use in water-based industrial coatings.

"The colorants are ideal for volumetric and gravimetric use in POS and in-plant tinting systems," Chromaflo adds. "They have a broad compatibility with a wide range of coatings and a minimum impact on paint properties.

"The use of dispersing resins and an additive package minimizes the effects of color flooding and floating in these formulations. The colorants will impart minimal or no effect on gloss, dry-time, water-resistance, film hardness, corrosion-resistance and foaming."

Clariant, which supplies pigments and dyes, also has an extensive selection of colorant preparations. These, the company says, contain a wide variety of products for the paint and surface coatings industry as well as for other special fields.

A primary example is the Hostatint 500 of range of

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## COLORANTS

The intention is to make ordering colors quicker and more efficient, opening up sales opportunities and improving customer service.

aqueous, binder-free pigment preparations, which is manufactured without using alkyl phenol ethoxylated (APEO) additives. These multipurpose pigment preparations, Clariant states, are compatible with water-based and solvent-based decorative coatings, especially low-VOC decorative coatings.

They are also compatible with some other binder systems, such as water-based or solvent-based industrial paints, but the maximum dosage level and compatibility of the binder-free VOC standards and regulations vary by the location where it is supplied.

“Product-specific VOC information is available to customers upon request,” Clariant points out. “It is the responsibility of the coatings manufacturer to determine standard compliance and appropriate claim for their products.”

Hostatint 500 must be checked in the customer paint system itself. Clariant says, however, that by using 500 pigment preparations in automatic and/or manual dispensers, excellent accuracy and reliability when poured or pumped have been observed.

“Furthermore, Hostatint 500 pigment preparations are miscible in all proportions with each other. By adding Hostatint Extender MS 500 or Hostatint Extender CC 500, the color strength of Hostatint 500 can be adjusted.”

Sherwin-Williams has, like most colorant suppliers, been focusing on reducing VOCs in its product line. The company points out that often, even if paints were formulated to have zero VOCs, blenders might add them to bring their paints to the desired hues.

The company’s ColorCast Ecotoner system will not add to the VOC content of any paint when tinted. This technology is in all Sherwin-Williams’ own stores which means the entire line of its water-based paints and colors are tinted with colorants.

The company says this system maintains a paint’s viscosity after tinting, and is available for any hue in its color palette, as well as for custom color matches. It can be used to tint all Sherwin-Williams latex and water-based coatings.

Achieving and maintaining color consistency has become easier with these different technologies coming onto the market. Genuine expertise, which comes from experience in the field, is still an essential factor in any successful formulation.

But anyone in the industry knows that the job is steadily becoming easier. There’s every indication this will continue into the future. ■

# Versatile Polyurethanes



A lightweight rail system in Germany that uses Covestro's Pasquick PUR coatings.

**POLYURETHANES** (PURs) are highly versatile polymers. Whether they are 2K (a polyol plus an isocyanate) or single (1K) materials, it is possible to formulate them with a broad range of viscosities and protective properties.

This ensures that they have multiple uses in floor coverings, coatings for cabinets and other wood items, and a range of industrial protective layers. In particular, their scuff-resistance, tolerance of chemical attack and general durability mean they can last for years without the need for replacement.

Despite the fact that PUR coatings have been in use for 60 years, there are still opportunities to tweak their properties. Modern control over formulations during the production process has extended their versatility, and also allowed some measure of exploration into new capabilities.

Alberdingk Boley, Inc. offers its PUR-MATT 970 as a hard, inherent matte polyurethane dispersion. This can be used in super-matte floor coatings, varnishes or paints. The company says this dispersion can “overcome the disadvantages of conventional matting agents.”

The solids content is 34 to 36 percent, and the pH value varies between 7.0 and 9.0. Viscosity is 20 to 2000 mPas, and the MFFT is approximately 30 deg. C.

It features high optical transparency on dark substrates and produces a hard but flexible film. The company

claims a very high coefficient of friction, for antislip properties, as well as excellent sandability. Areas of application include wood, plastics, OPVs, paints, and additives for gloss reduction.

Elastocoat is a spraying system from BASF that can be used for the reliable and lasting protection of all surfaces such as wood, concrete, bitumen, or steel. The high-pressure spraying system can be applied to virtually all substrates with a corresponding primer.

While other materials take a long time to through-harden, BASF says Elastocoat is tack-free in just a few seconds and cures fully in two hours. With these properties, it is the recommended solution for many challenges.

Complicated roof penetrations, skylights, or air-conditioning shafts are trouble-spots for leaks. Elastocoat seals the affected areas. Like a liquid film, Elastocoat adapts itself evenly over the surface geometry of a roof and, BASF says, covers it seamlessly and durably.

After preparation of the surface, the polyurea system is sprayed onto the roof. It covers and seals vertical areas and cures in a few seconds. It is load-bearing after one hour.



Elastocoat has high tolerance of temperature extremes and humidity during application, and it features seamless sealing of penetrations and undercuts. It also claims a high degree of crack bridging, with over 400 percent elongation at break. Further, it reportedly has high resistance to hydrolysis and aging.

The product has particular application in chemical storage tanks. To prevent leakage into groundwater, most tanks are placed on or into areas called secondary containments, made of concrete. To prevent cracks and leakage, a lining system needs to be installed.

Quebec-based Canlak specializes in coatings for wood products. The Italian-developed Verinlegno line it offers has both standard PURS and acrylic-polyurethanes, which give clear and opaque, and ultra-matte and high-sheen surfaces. These materials are especially recommended for kitchen cabinets and children’s furniture, which are subject to difficult though differ-

ence conditions in actual use.

The M900 acrylic-PUR material features strong UV resistance, as well as water resistance. This latter feature makes it suitable for use in bathrooms as well as kitchens, since it is less likely than other PUR coatings to warp or produce an uneven surface when exposed over time to water vapor.

Covestro has extended the range of applications for its PURs, which includes its Blulogiq thermoactivated hardener technology. The product range is available in waterborne dispersions as well as 70 percent bio-based crosslinkers.

Its Pasquick curing technology, the company claims, can cut a 24-hour coating job involving a construction coating to six hours. This, Covestro states, is important for building areas that see a high volume of traffic, or are in use on weekends or during extended hours. Further, the rapid curing properties of Pasquick can reduce the number of coating layers.

The same technology is finding a home in areas of the transportation industry that require a high-quality surface. As rail systems upgrade – faster in Europe, but also to some extent in North America – protective coverings for passenger rolling stock take on increasing importance.

“Heating the drying oven up to 60 deg. C is one of the most expensive cost factors in coating rail and other transportation vehicles,” Covestro states. “This means there is a clear demand for ambient curing and a faster production process without heating up and cooling down the oven.

“Thanks to our new Pasquick technology, clearcoats and topcoats can be quickly cured at room temperature. Our latest Pasquick developments combine a very fast, ultra-high solid system with best-in-class industrial hygiene standards.”

Evonik Corp. offers its Vestanat non-yellowing crosslinkers for 2K or 1K thermosetting PUR coatings. These are

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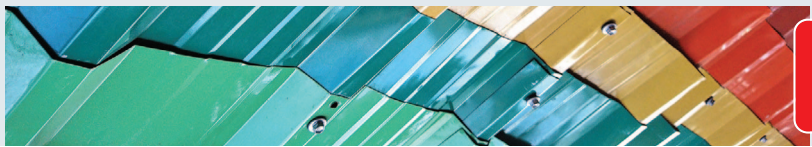
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aliphatic and cycloaliphatic diisocyanate monomers for use with light-stable PUR resins and elastomers, or cycloaliphatic polyisocyanates required for extremely durable coatings.

These crosslinkers, Evonik says, improve performance in various applications and systems: highly chemical resistant 2K and 1K systems, high Tg and fast-drying coatings, flexibility for PCM applications, solventborne, waterborne, solvent-free (e.g powder coatings) and others.

IPDI is characterized by high compatibility for any kind of coating resin and comes with a low prepolymer viscosity.

H12MDI for PUD and TPU applications reportedly exhibits high chemical resistance and excellent mechanical properties. TMDI shows also a superior compatibility and performance in the flex of UV resins.

The Vestanat M range is a new family of urethane-alkoxysilane binders and crosslinkers that aims to provide excellent scratch resistance, especially for automotive OEM and repair coatings, as well as wood coatings. This technology presents a versatile basis for high-performance isocyanate-free (NISO) technology used in both ambient-temperature-curing as well as thermosetting systems.

KCI (Katilac Coatings Inc.) also offers an Italian-developed PUR range, under the Sirca brand-name. This includes 6FPU52 Very Clear Conventional PU sealer, which, the company says, has excellent clarity and high build, quick dry time and excellent sanding characteristics. It is intended for use under Sirca's clear conventional polyurethane topcoats.

KCI's 6FPI35S06 insulating agent is recommended on woods like teak, rosewood or iroko, which are rich in tannins. It features 18 percent solids by weight, or 15 percent by volume, and offers 17 inches viscosity at Zahn 2, at 20 deg. C.

The product needs between two and six hours to overcoat, without



Applying a Covestro Pasquick coating to an institutional floor.

sanding. There is, KCI says, 100 percent catalyzation with 6TC20, and a 20 to 50 percent reduction with SOL-0041, with three hours of pot-life. One or two coats can be applied at three to five wet mils.

The company's selection of topcoats includes the clear 6OPU77S15G. This general purpose PUR topcoat, the company states, is characterized by a good build and levelling, and features 47 percent solids by weight, and 44 percent solids by volume.

There is 20-inch viscosity Zahn 4 at 20 deg. C, and the product needs 12 hours to stack. It is offered in 10, 30, 40, 50 and 80 degree sheens, and 50 percent catalyzation by weight with 6CTH3. It provides two hours of pot-life if reduced with SOL-9054 at 20 percent.

Rhino Linings' HiChem pipe lining product is positioned as the company's most chemical-resistant formulation. It remains stable in a variety of immersion applications, typically sprayed onto metal and concrete surfaces, however, it can adhere to almost any substrate.

"HiChem provides excellent corrosion resistance and will not deteriorate from most chemical attacks," the company states. "It has a Shore D 70 hardness, and it is our most rigid formulation

with the highest amount of molecular cross-linking in its formulation."

Depending on the ratio formulation and gel time, elongation can range from 10 percent to 40 percent, giving this hard coating some flexibility. HiChem is available in both 2:1 and 1:1 ratio formulations, and HiChem 21-70-90 is formulated with a slow gel time, allowing for a smooth surface spray or casting of products.

HiChem PW meets potable water standards, and shares the HiChem formulation as a highly chemical resistant product, remaining stable in a variety of immersion applications. It is typically sprayed on metal and concrete surfaces, but it can adhere to almost any substrate. Rhino Linings says it provides excellent corrosion resistance and will not deteriorate from most chemical attacks.

Polyurethanes are not the cheapest option for coatings but they are usually one of the most reliable. In both performance and appearance, they are very hard to beat.

Even more remarkable, more than 80 years after they were first invented in a German lab, formulators are still finding ways to improve their performance. When high quality coatings are needed, they are almost always a sure bet. ■

# Chemical Assessment

## Top Priority for Chemical Industry in Canada



BY GARY LEROUX

**CPCA RECENTLY LAUNCHED** a robust Chemical Management Substance Database as part of its Canada CoatingsHUB resources. The database will support coatings industry efforts to manage the large volume of data created by Canada's ongoing assessment of chemicals in commerce. Some of those issues are briefly updated below for those companies doing business in Canada or intending to in the future. The database contains 1,100 substances known to be used in the coatings, adhesives, sealants, and elastomers sector (CASE) used in a wide range of SKUs. This is the coatings segment of the 4,300 substances categorized for risk assessment and risk management under Canada's Chemicals Management Plan (CMP) over the past decade-and-a-half. There will be more than 1,500 substances prioritized for assessment beyond 2020, after the third phase of the CMP concludes in 2021. CPCA will add the chemicals in the CPCA substance database by CAS number for ease of access.

### **CHEMICAL ASSESSMENT CONTINUES**

There are many chemicals still undergoing risk assessment and risk management in Canada. For example, leftover from Phase 2 of the CMP is the Final Risk Assessment Report (FSAR) for the Phthalate subgroup. These are being further assessed for cumulative effects following a draft

risk assessment that proposed declaring two phthalates as toxic (B79P and DHEP). However, based on the information provided by CPCA members in the data gathering phase, several of the remaining 26 phthalates used in CASE products are proposed for a non-toxic designation at current levels, despite some suspected endocrine disruption and cumulative effects. The final screening assessment for certain Flame Retardants will be published this fall. Three of these substances have been proposed as toxic and two of them (DP and DBDPE) will be added to a list of prohibited substances in Canada. Additional flame retardants are scheduled for risk assessment next year.

CPCA recently reminded all members of the assessment of 134 substances in the Boric Acid, its Salts and Precursors Group, which were proposed for a 'CEPA-toxic' designation in Canada related to human health and the environment; however, the final screening assessment is still on hold. The government has yet to provide a final decision and propose a risk management approach for Soluble Cobalt Compounds already proposed for designation as toxic for the environment. Further notice related to the internationally classified substance AEEA is awaiting publication in Canada. AEEA is used as a curing agent for epoxy resins, as a component of adhesives and sealants, used in asphalt paving or patching products, and as a component in super glues



and corrosion inhibitors. CPCA also expects the final significant new activity (SNAc) requirements to be published for two MDAs imposing an annual threshold of 100 Kg/year.

In Phase 3 of the CMP, there are several groups of CASE-implicated substances remaining to be assessed well into 2021. Some key assessment publications are being delayed because of the COVID-19 pandemic. However, CPCA is closely monitoring the Final Screening Assessment for benzophenone, which will likely be concluded as toxic at a very low level later this year. This will impact some resins currently used for indoor and exterior consumer paint and coatings products. Also coming later this year or early 2021 is the final assessment of pigments and dyes, Epoxides and Glycidyl Ethers and Fatty Acids and their derivatives. All substances in these groups are being proposed as toxic. In the coming months there will also be draft risk assessment reports published for Acid and Bases, Alcohols, and Aromatic Amines. CPCA submitted comments on the draft assessment for Ketones, challenging the proposed toxicity decision for MEK, MIBK, and 2,4-PD, which are used in certain liquid and aerosol paint and coatings; and more widely in allied products (thinners, removers) currently available to Canadian consumers. The final assessment report is expected soon. Talc has been proposed as toxic when available in a powder form in consumer products.

Also coming this winter is the final risk assessment for the Furan group in which Furfuryl Alcohol is proposed as toxic for its current use in wood strippers, unfortunately with no cost-effective substitute available. The same will apply to Tetrahydrofuran, which is a common solvent in industrial CASE products. The draft assessment for Ethers, Manganese, Low Boiling Points Naphtha, Piperazine, Silver, Substituted Phenols, Benzotriazoles and Benzothiazoles, and Titanium compounds (including TiO<sub>2</sub>) have been postponed to later in 2021. There has been no definitive timeline provided by the federal government beyond 2020 for these substances.

### **BIOCIDE RESTRICTIONS FOR PAINT STILL A CONCERN**

Apart from chemicals management, there is the ongoing re-evaluation, by another arm of the federal government, of biocides used as preservatives in paint, coatings, and adhesives and sealants. Information was recently provided on the long-delayed re-evaluation of six such preservatives: Sodium Omadine, Chlorothalonil, Dazomet, Folpet, Ziram, and the special review of Diodofon. Additional risk mitigation measures include outreach or stewardship programs for professional painters and primary handlers, e.g. industrial handling. Ziram's registration has been proposed for cancellation for adhesives or as a material preservative generally. The use of Folpet as a paint preservative is also proposed for cancellation. Diodofon's registration will be cancelled for use in exterior paint. The use of Sodium Omadine must

be reduced in latex paint emulsions from 0.648 g a.i./kg to 0.058 g a.i./kg while its applicable levels will be reduced in other paint products and building materials. Chlorothalonil use would still be accepted in latex and solventborne paint, but reduction of the maximum registered label rates from 9.8 g a.i./L (exterior latex paint) and 11.8 g a.i./L (solvent-based paint) to 8.5 g a.i./L for exterior latex paints and solvent-based paints. Dazomet would still be acceptable for use in paint but with a reduced limit (0.53 g a.i./kg), but cancelled for use in paper coatings.

The biocides file remains an ongoing priority for CPCA. It is critical the coatings industry remains vigilant and can provide all the necessary industry data to support current use levels for biocides in paint and coatings. CPCA recently took further steps to ensure greater regulatory alignment with the US EPA on biocide registration and re-evaluation via the Canada-United States Regulatory Cooperation Council and the PMRA. There are a number of other issues the association is concerned with in this area and both staff and technical committees are committed to seeking a resolution for the benefit of industry in the months ahead.

### **NEW AIR QUALITY REGULATIONS FOR COATINGS**

Finally, but not least, VOC emissions and air quality continue to be a strong focus of the current federal government in Canada. In 2019, it conducted a comprehensive study related to existing national VOC limits for 53 categories of Architectural and Industrial Maintenance coatings sold in Canada. It also identified 10 new coatings categories not currently regulated, which are to be included in the proposed amendment to the Architectural regulations. A formal consultation will be organized this fall for those regulations. The government's goal is to secure additional emissions reduction by aligning the Canadian regulations to California's CARB-2019 or OTC Phase II VOC limits. CPCA continues comprehensive discussions with officials on the proposed amendment and will consult closely with members on rational approaches to any changes in the current VOC limits.

It is important to remind government that huge emissions reduction has already been achieved in Canada since the first regulations were enacted in 2009. Government must also consider the full impact of any future actions on product performance vis-à-vis any new reductions that could realistically be achieved. The federal government expects to publish the proposed VOC regulatory amendment in 2021, at which time there will be limited opportunities to deal with any outstanding industry concerns. The advocacy on this file must be done now for the best possible outcomes for the coatings sector in Canada. ■

*Gary LeRoux is President and CEO of the Canadian Paint and Coatings Association. [www.canpaint.com](http://www.canpaint.com)*

### 550 F Truck Oven Processes Painted or Coated Parts



Grieve recently launched a new 550°F (288°C) truck oven customized from its standard TCH-550 model, used for heat processing coatings and paints on parts at the customer's facility.

The oven measures 60 x 60 x 60 inches. 30 KW are installed in Incoloy sheathed tubular heating elements, while a 2000 CFM, 2 HP recirculating blower provides horizontal airflow to the workload.

The truck oven has six-inch insulated walls, an aluminized steel interior and aluminized steel exterior with enamel finish. Features include a purge timer, two-position dampers on fresh air inlet and exhaust outlet and a 1,200-pound capacity stainless steel loading truck. Additional features include a 325 CFM powered forced exhauster with an airflow safety switch. The oven includes all safety equipment required by NFPA Standard 86, IRI, FM and OSHA.

A variety of controls include a UL listed control panel, a programmable temperature controller, SCR power controller, a circular chart recorder and a circuit breaker disconnect switch mounted through the control panel door.

[www.grievcorp.com](http://www.grievcorp.com)

### SAMES KREMLIN introduces New Airmix Pump Packages

SAMES KREMLIN recently announced the release of its new 15C50 and 35C50 Airmix Pump packages.

The company says the 15C50 compact Airmix paint pump is a match for Airmix spray guns, providing exceptional finish quality and high transfer efficiency. The C50 was redesigned to meet the needs of solvent-based coatings.

The 35C50 Airmix paint pump, the company says, ensures constant and pulse-free delivery for superior, industrial finishing. SAMES KREMLIN says



the 35C50 has the largest differential air motor on the market to meet the demand of water-based coatings.

Both pumps, the company says, provide an even spray pattern and consistent film build for superior finish quality, offer easy priming and flushing, have a differential air motor to adjust the pump for maximum air pressure, and offer a balanced fluid section and patented MBA cartridge sealing system.

[www.sames-kremlin.com](http://www.sames-kremlin.com)

### Compact Airspray Diaphragm Pumps Allow Fast Color Change



After delaying some product launches due to COVID-19, SAMES KREMLIN also announced the release of three high-performance diaphragm pumps: the 01D140, 01D140E and 04D140. The company says the pumps are designed for fluid transfer and medium paint circulating systems for a large range of paint applications.

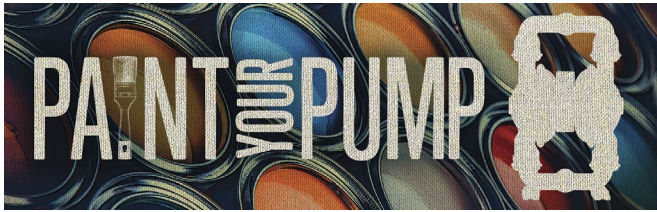
The 01D140E is designed with specific EPDM diaphragms for water-based abrasive product applications such as porcelain and ceramics.

SAMES KREMLIN says the pumps are meant for fast color changes with quick and easy flushing; are constructed of highly resistant materials such as a ceramic changeover valve and full stainless steel construction for a reliable and durable pump process; offer a low cost of ownership through savings on solvent usage; and offer a compact design for easy integration.

[www.sames-kremlin.com](http://www.sames-kremlin.com)

### Wilden Wants You to Paint Your Pump to Win

Wilden recently launched its first-ever Paint Your Pump Contest designed to help add a splash of color to its line of Wilden AODD pumps. Eligible entrants can enter by painting their Wilden pump and completing the online entry form. The contest runs until September 30.



There will be a total of two global winners. The first place winner will receive a new Wilden Pro-Flo SHIFT Air Kit and Chem-Fuse Wet Kit. A second place winner will receive a new Wilden Chem-Fuse Wet Kit.

A panel of judges will select the winners based on the visual transformation of the pump, the quality and skill level of painting, and the creativity of the paint design. The winner will be announced no later than October 9.

[www.psgdover.com/wilden/campaigns/paint-your-pump](http://www.psgdover.com/wilden/campaigns/paint-your-pump)

**FLEXIM introduces a New Solution for Liquid Low Flow Measurement**

FLEXIM says its new FLUXUS F721 XLF is a non-intrusive flowmeter for applications where every drop counts. The new ultrasonic flow measuring system is designed to provide precise measurement of flow rates as low as 1 gph and below in small pipes with diameters from 3/8 to two inches. As the clamp-on transducers are mounted on the outside of the pipe, meter installation and commissioning can be done without any pipework modifications or process interruptions. The external flow measurement works independently of the pipe wall thickness and pressure ranges and does not cause pressure loss. As



the measuring device does not come in direct contact with the flowing media, it is not subject to wear and tear, meaning drift readings and high maintenance efforts are not required.

The measuring transmitter is available in either aluminum or stainless-steel housing. Typical applications include chemical injection of scale and corrosion inhibitors in the oil and gas industry, chemical dosing in wastewater treatment and measurement of low flow spray paint lines in the automotive industry.

[www.flexim.com](http://www.flexim.com)

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### App Calculates Viscosity and Drain Time Instantly



Gardco says its new app can calculate the kinematic viscosity or drain time of Gardco and BYK viscosity cups quickly and easily. The user can input the drain time or viscosity into one of the given input fields and then select the viscosity cup type to calculate the viscosity or drain time of a sample.

If the selected cup is highlighted in green, it is within the cup's viscosity range and the number is valid. If the sample is outside of the cup's range, an error message will appear. The user can switch to a different cup for different purposes, and determine which cups are in range for the desired value by inputting the parameters and scrolling through the list.

Any cup in green will provide a valid measurement for the desired input. Users can choose from 52 viscosity cups.

The app is a free download for Android or Apple smartphones. A desktop version can also be downloaded.

<https://insta-visc.netlify.app/>

### Graco Introduces New Product Line Using Electrostatics to Spray Waterborne Material



Graco Inc. recently launched its HydroShield Waterborne System. It says the new finishing system gives manufacturers more reason to switch from conventional to electrostatic technology to spray waterborne material.

The HydroShield batch system, the first installment of a developing product line, gives operators the control to use Pro Xp WB air spray and air-assist electrostatic spray guns to spray waterborne material.

The batch isolation system benefits industrial finishing operations by allowing refill without system shutdown so when the painter releases the spray gun trigger, the internal isolation pump refills itself from a supply source, improving productivity.

Other features, such as an automatic refill, reduce the need to open the isolation cabinet, resulting in greater safety, Graco says. The controller interface allows users to select spray functions, stay informed of system status and set a maintenance schedule.

Graco says using electrostatics to spray waterborne material means more paint lands on each part, compared to conventional spraying.

"We designed the HydroShield system with the operator in mind," says Wendy Hartley, Graco Product Marketing Manager for the Industrial Products Division. "The controller keeps the operator informed of the system status and provides process control, which makes spraying high-quality parts easy."

[www.graco.com/hydroshield](http://www.graco.com/hydroshield)

### SAMES KREMLIN Launches New FPro Gun Range

SAMES KREMLIN recently launched a new FPro Suction gun range.

The company says the FPro S (Suction) guns combine the same features as the FPro P.

According to SAMES KREMLIN, the main advantages of the new guns include new the company's spraying technology – The Vortex – the same patented technology embedded in the FPro P; enhanced suction power; and new suction cups (reusable and 3M adaptor for disposable cups).

SAMES KREMLIN recommends using the FPro S with its new light and flexible air hoses for easy handling.

[www.sames-kremlin.com/usa/en/product-fpro-S-conventional-manual-air-spray-spray-gun-suction-1.html](http://www.sames-kremlin.com/usa/en/product-fpro-S-conventional-manual-air-spray-spray-gun-suction-1.html)



### ICL's New Additive Promises Improved Scratch Resistance and Durability in Water-Based Coatings

ICL Phosphate Specialty recently released SCRATCH-X, a functional additive designed to enhance scratch-resistant properties of water-based coatings protecting furniture, cabinetry, and other OEM applications.

ICL says SCRATCH-X is the result of research and coordinated development by ICL Phosphate Specialty's Paints & Coatings scientists, which included gathering market information demands for innovative products with scratch-resistant durability.

"Over the course of three years, we have conducted extensive research in an effort to develop a novel, stabilized additive to enhance the scratch and abrasion resistance of industrial coatings, specifically UV-curable coatings which are factory applied to wood flooring and kitchen cabinetry," says Dr. Anthony Gichuhi, ICL Phosphate Specialty's Director of Research & Development.

SCRATCH-X products will complement the line of HALOX branded products for the paints and coatings industries. Virtual conferences



and webcast educational seminars are being designed to showcase the product, the company says.

[www.halox.com](http://www.halox.com)

### New Industrial Product Line Offers Customers Durable, Cost-Effective, Corrosion-Resistant Solutions

Axalta recently launched its Strenex industrial product line for general industrial, construction, and fabrication applications. Strenex expands the company's industrial portfolio and gives customers entry into the light and medium industrial markets throughout North America.

"Axalta is committed to continuous innovation and developing products that meet the high standards that customers expect from us," says Dave Heflin, Vice President, Global Industrial Liquid Coatings. "Strenex balances the demands of corrosion-resistance, aesthetic appeal and environmental constraints to meet the most challenging production environments and application conditions. These new products also are designed to deliver fast drying times and ease-of-application, which provides the opportunity for our customers to become more productive and efficient. We are excited about the value

these products will bring to customers and the opportunity to enter this growing market."

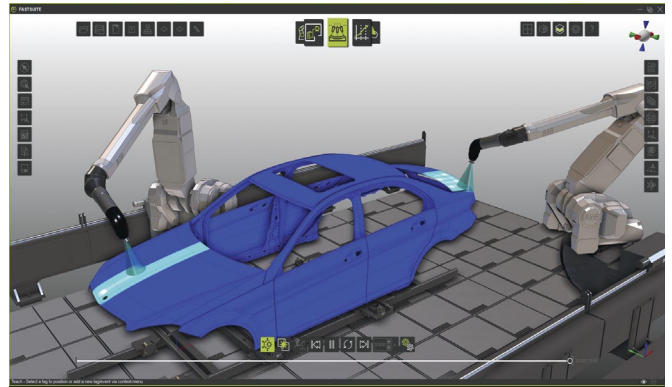
The Strenex family of products includes waterborne and solventborne single-component alkyd and acrylic products, as well as solventborne urethanes. The offering has a selection of fit-for-purpose fast-drying primers and direct-to-metal (DTM) topcoats that allows users to reduce production times and costs. The 120- and 220-series primers offer steel fabricators and painters' options that meet industry standards for performance at multiple Volatile Organic Compound (VOC) levels, including zero-VOC. The 602-series DTM urethane product line provides high-film build properties with sag resistance up to 12 mils in a single coat.

[www.axalta.us/industrial](http://www.axalta.us/industrial)

### Fastsuite Edition 2 Includes Surface-Based Applications for Painting, Spraying, Coating

Surface-based applications are among the most demanding tasks in automotive and aerospace production where the use of robots for spraying applications is widely used and proven.

With new surface-based functionalities, FASTSUITE Edition 2 enables manufacturers to create, simulate and analyze spray applications and refine spray patterns, surface coverage, spray cone expansion and application speeds, FASTSUITE says. The software works



regardless of the robot brand or model.

FASTSUITE says manufacturers can overcome the limitations of online programming by using the CAD files of the workpiece to achieve accurate path planning on complex 3D surfaces. Process simulation enables the optimization of robot trajectories to dose the correct amount of sprayed material and achieve uniform deposition along the surface, ensuring coverage and eliminating waste.

Simulation tools allow cell layouts and tooling designs to be validated for accessibility during the design phase, and cycle (time) estimates to be generated for complex multi-robot cells. The use of special tools to analyze the overall process result helps avoid programming errors and to validate programs before they are downloaded to a real cell. The simulation results of the created painting and surface treatment programs can be exported in 3D PDF format for fast and effective communication.

[www.fastsuite.com/en\\_EN/technologies/painting-spraying-coating](http://www.fastsuite.com/en_EN/technologies/painting-spraying-coating)

### Erichsen Measures Hardness and Mars

New Erichsen scratch hardness testers 318/318S/318 C are used to measure the hardness of surface protective layers like paints and plastic coatings whether the surface is flat or curved.

Developed by Robert Bosch GmbH in Stuttgart and manufactured by ERICHSEN, the devices enable quick and easy quality control of surface protection layers, even during production.

Gashes and mars are not nice to look at, especially on smooth, shiny paint surfaces. But they can occur quite quickly: fingernails can unintentionally scratch over a matt-polished table or a branch can grind across the beautiful paint of a car. Metal marking is another type of mar. Here, the culprits are small metal particles which "rub off", leaving ugly scratches on the surface. Previously you could "inspect" a surface only with your fingernails. Now, the Erichsen Model 435 Mar tester enables you to specifically define the behavior of coating surfaces with an exact test value.

[www.erichsen-usa.us](http://www.erichsen-usa.us)





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**COVID-19: INDUSTRY OVERVIEW**  
**Coronavirus**  
Impacts on Your Business

**A NEW REALITY**  
**What COVID-19 Means for the Industry**

Without utilizing a formal survey, we at CFCM Magazine wanted to know how the finishing and coatings sector is doing amid this pandemic, as well as take a look at any issues and trends that may be emerging. We canvassed the industry looking for stories from readers large and small, and following is a snapshot of the industry at this moment in time. The environment is not all bleak! There are many creative, positive stories of adaptation, helping in your communities and trying to stay positive. We salute you and hope you enjoy reading about how this industry continues to survive and thrive.

**YOUR PANDEMIC EXPERIENCES**

**SATA**  
April Outlook  
Marketing Specialist

**IN THE WAKE OF ONTARIO AND QUEBEC:** classifying antibody repair and their supply chains as essential businesses. SATA Canada remains open and working hard to get customers everything they need in the paint booth and sometimes beyond.

Recently, SATA responded to an urgent request from Terry Cargo Paint Works in Bradford, ON, for our RPS cups and some other desperately needed necessities. Unfortunately, we can't repeat this one-off delivery, but we can get you spray guns, filtration, breathing equipment and even offer gun repair!

SATA Canada has been conducting webinars with its customers including distributors, bodyshops and paint manufacturers, throughout the pandemic.

Hosted from the SATA training center classroom in Vaughan, ON, customers can connect with SATA Canada Business Development specialists across the country.

Webinar topics include breathing safety, NIOSH/CSA compliance, filtration and spray gun setup and maintenance.

Contact SATA Canada toll free at +1 844 554 SATA (7262) or e-mail us at [contact@sata.ca](mailto:contact@sata.ca) to arrange a custom webinar for your company.

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### LEMMER SPRAY SYSTEMS

Russell K. Bawa  
President

### DYNAMIX

Michael Black  
Marketing Manager

**WITH THE ENTIRE WORLD** living in an unprecedented time, many companies are helping prevent the spread of COVID-19 by producing items such as masks and sanitizing solutions.

Every company has a moral responsibility to do its part to help their communities to prevent the spread of the COVID-19 virus. At Lemmer Spray Systems, we have adapted two of our top-selling aerosol spray systems to be used to spray sanitizing solutions. We not only sell the equipment but educate our customers on how to use our systems properly.

Lemmer Spray Systems' DG-1500 and DG-3100 are the two sanitizing sprayers currently being sold across Canada. These systems are both aerosol and are light-weight and portable.

Our high pressure pump is designed for dependability. The universal brush-type motor will handle up to 100 feet of 1/4 extension cord. The pressure control is mechanical and modular for reliability and ease of service. The DG-1500 is light, as it only weighs 15.5 pounds.

The DG-3100 with an DC motor will handle up to 300 feet of extension cord and withstand job conditions of low voltage. The pressure control is mechanical and modular for reliability and ease of service.

Overall, Lemmer Spray Systems has adapted well during the downturn in the economy. This is due to our commitment to providing quality products and exceptional service, which have been the corner stone of our company since 1965. Despite the downturn, our branches are in operation.

Our ability to adapt to the changing environment has been due to the amazing work of our employees who consistently have provided high-level customer service and to our loyal customers who have the confidence in us. Our suppliers have also been a great help to ensure their supply chain issues had minimal impact on our operation.

Our practice of maintaining sufficient inventory level provided an adequate lead time buffer which enabled us to ensure we have sufficient inventory and minimized any supply chain issues.

We are being responsive and flexible to customer requests as per usual. Many of our customers are now calling in or emailing us their purchase orders and their technical questions, in order to maintain social distancing while some are using social media platforms such as Facebook to inquire about our products and services. However, there are some customers who prefer to visit us at our various locations to purchase supplies and equipment and to drop off their equipment for repairs.

**THERE IS A NOTION IN LEADERSHIP** training courses that I often think back on and that is the concept of "controlling your 15 percent". This relates to a situation where you are trying to get your way and influence a decision. The 15 percent comes from the fact that you only have 15 percent control of a situation and you have to understand where to implement your control to make the most out of the outcome and not to worry too much about what is out of your control.

This pandemic has seen a lot out of our control. Changes made essentially overnight, restrictions introduced and limited time to react to the "new normal". The shops that are surviving are the ones doing the most to control what they can. Planning can be extremely difficult, but successful planning and a little creativity can go a long way.

We have seen scheduling changes made where one shift is stretched out into two or three shifts to limit employee interactions and allow physical distancing. We have seen flow diagrams changed so hallways in plants become one-way routes to limit employees running into each other. We have seen doors reconfigured to include handles that can be operated using your elbow to avoid hand contact. We have seen customers approve more alternative suppliers to ensure they are not single sourced on critical materials.

You can experience problems in electropolishing if you are continuously shutting your line down and starting it back up. You often see fewer problems when the lines run continuously and you don't have to shut down rectifiers, turn off agitation, cool down tanks, etc. Some of our customer partners wait to schedule work over consecutive days so they can make the most out of their equipment and personnel. Some shops have elected to only run Tuesday to Thursday for this reason. This is where planning becomes critical.

The pandemic has changed the way people view buying, the chemical market, "best price" doesn't always win the business of the order. Timing is very important, supply is very important, and getting the most performance out of what you are buying has become crucial. Technical service and laboratory support become invaluable.

Dynamix is fortunate to have local manufacturing and a differentiated product offering as well as customer base. A lot of surface finishing is tied to the automotive and aerospace industries, but there are still many shops performing essential work to the agriculture, energy, safety, medical, and construction industries. Common items like washers, valves, tubes, fittings, hose connectors etc. aren't always considered "essential" products but they are certainly used

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