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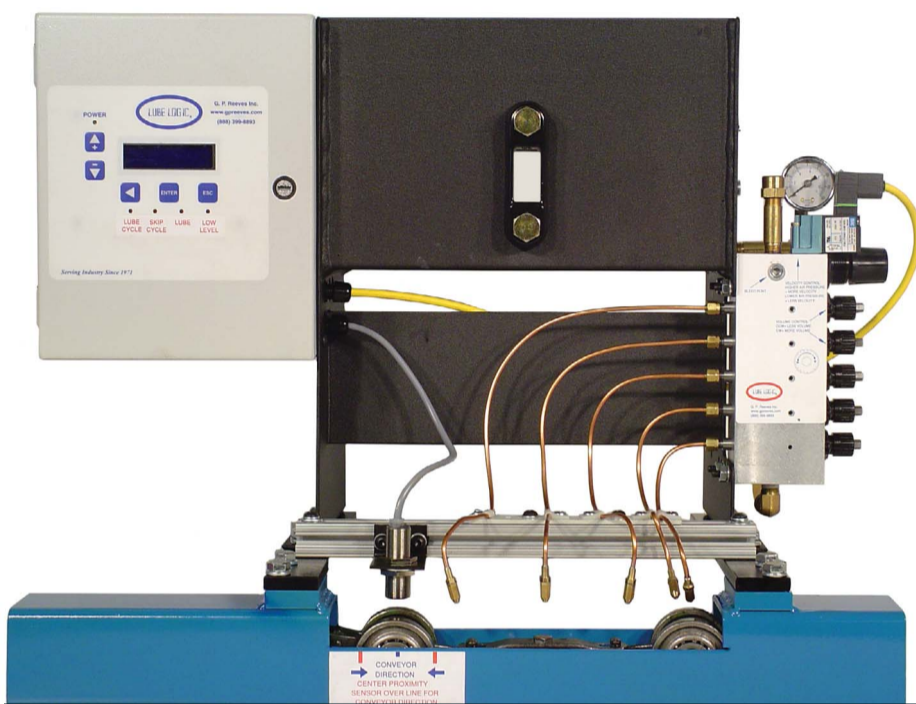
CANADIAN FINISHING & COATINGS MANUFACTURING MAGAZINE

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November/December 2011

Diligent Preventative Maintenance

Can Avoid Costly Downtime And Repairs



BY SHAUN HAMMEL

With overhead conveyors, or really any chain driven conveyor, the “canary in the coal mine” is the driven/moving chain. Other than impact or misalignment, the life expectancy of the chain is determined by the amount of physical chain pull it endures.

As chain pull increases, the most obvious indicator is “stretched” chain, which is chain that is outside of its designed pitch. Left unattended for too long, the risk of jams in the drive increases as the drive chain and the driven chain no longer have matching pitches.

Additionally, if the chain is experiencing high chain pull, it is likely that the vertical and horizontal turns, particularly those closest to the input side of the drive, will have excessive wear and may contribute to elevated chain pull as the inside of the track tends to groove, or roller bearings or traction wheel bearings endure excess loads.

Many conveyor layouts are designed as an afterthought to move the products from one stage of the process to the next, and sometimes that requires the conveyor to perform under less than ideal conditions. Frequently, companies acquire a conveyor specified for a given application/load/throughput, and then the requirements change after it is installed. Once a conveyor is in place, the options available to reduce wear is limited to proactive ongoing maintenance. A good place to start maintenance review is to note any ongoing issues, such as bad track welds or alignment, that may be occurring as that may point to a specific problem that needs to be addressed.

The next step is to check for chain wear. The measurement is usually taken over a 10 ft section while the chain is under tension. The measurements should be taken in several places throughout the entire length to eliminate the possibility of prematurely condemning a whole chain when maybe only a few sections are damaged from a previous jam in the drive. Ideally, the measurements are recorded and compared

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Automatic Multi Point Shot Lubricator, photo courtesy of Enclosed Track Conveyors.

ALSO IN THIS ISSUE

- Electroless Plating
- Plating on Plastics
- Epoxy Resins
- Biocides, Algaecides and Preservatives
- Masking
- Robotics and Gun Motion
- Nano Regulatory Status

AND MUCH MORE!

Trade Show and Conference Season is Upon Us and CFCM was there

See show coverage of:

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Wagner System's Jeffery Ponters demonstrates the LB1500 Powder Coating booth and Prima Sprint spray gun.

IN THE NEWS

Company News

General Paint Corp. Acquires Architectural Paint Business in Canada

General Paint Corp., Vancouver, BC has entered into an agreement with Société Laurentide, Shawinigan, QC for the acquisition of the architectural coatings business Peinture Laurentide.

The Company says General Paint's brand portfolio will incorporate Peinture Laurentide's current architectural activities in Quebec and the Atlantic provinces.

The transaction will make General Paint “Canada's leading paint manufacturer,” said Dale Constantinoff, president and CEO of General Paint. Peinture Laurentide has manufactured architectural coating products for more than 55 years. General has worked closely with Peinture Laurentide's for the past three years distributing PARA Paints and Crown Diamond products in Quebec and the Atlantic provinces.

For its part in the agreement, Société Laurentide will continue focus on innovation in the industrial coatings, recycled paint, reclamation, automotive maintenance products and bottling of natural spring water sectors.

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continued on page 4

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Colour Me Fall

This is what I tend to call Trade Show Season. This issue has coverage of several shows and conferences across North America which all happened right around the same time if not during the same week.

One such show was the NAI in Cincinnati. The photo on this page to the right is I trying my hand at the Virtual Painting Competition being held on the show floor.



Contestants are given a two second explanation on how to hold the gun and point the laser beams and then we "paint" a screen and receive a score out of 100. I got 24, but I don't feel so bad because some people got 12. The winning score was 78.

This time of year, autumn, also makes one think of colour. AkzoNobel has come up with the worldwide marketing strategy, "Let's Colour," and has united many of the company's decorative paint brands under the new identity. During "Let's Colour Week," launched Oct. 10, buildings around the globe, mostly non-profit organizations, received colour makeovers, an attempt to increase colour awareness and how it impacts daily lives. Canada was one of the first markets affected by the new "Let's Colour" identity program.

In Canada Dulux Paints announced an international colour survey that found that blue has risen to elite status as "the world's most popular colour."

The survey, involving respondents from 30 different countries apparently demonstrates that colour preference varies more by gender and age than it does by geographic location.

The survey found:

- Blue, red and green are the most popular colours worldwide, with blue the overall winner.

- Yellow, orange, brown and purple are the least favorite colours worldwide, with yellow preferred by only 5 per cent of respondents.
- Blue is the favorite colour of more than half of the world's people, with 42 per cent of men and 30 per cent of women citing blue as their top colour choice.
- Of people over the age of 50, 23 per cent prefer green, while the number drops to 14 per cent among those under 30.
- Women prefer the reds of the colour spectrum, a range that includes purple more than men.
- Among males, 20 per cent associate purple with courage and bravery, yet 22 per cent maintain it is their least favourite colour. Among women, 23 per cent said purple is their least favourite colour, while 8 per cent say it is their favorite.
- Orange is increasingly disliked by both men and women as they age.
- The most popular colours sold in North America are beiges and grey, while in Asia (India and China), people buy more yellow, pink and light blue tones for their walls.

Dulux paints stores is one of the world's leading paint manufacturers with 230 locations in Canada.

What does your favourite colour reveal about you? According to Dr. Carol Ritberger, author of What Colour is Your Personality (Whatcolorisyourpersonality.com) there are four main colours that reveal how people see situations, express themselves, solve problems and interact with people.

These four colours are:

RED — These are the Just Get it Done people. What you see is what you get.

ORANGE — These are the Let's All Get Along people. Oranges are the caregivers and peace-makers.

YELLOW — These are the Let's Do It Better people. They're visionaries who display strong leadership qualities.

GREEN — These are the Let's Experience It All people. They have rich vivid imaginations and thrive, flourish, and grow when using their creative abilities.

What colour are you?

Sandra.anderson@cfc.ca

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Paint and Coatings Manufacturing

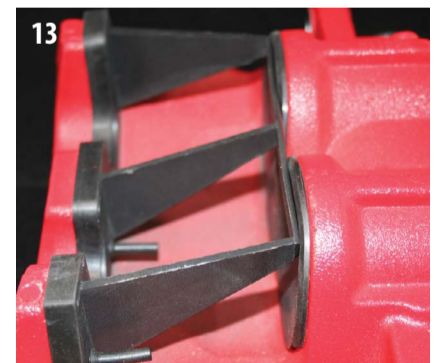
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Ever Increasing Demand.

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Continued from page 1

Celebrating its 100th anniversary this year, General Paint, considers this venture to be more than a symbolic action. By expanding its operations in a significant manner across all Canadian markets, a strong statement of Canadian unity is being made through the addition of this solid anchor in Quebec and the Atlantic provinces, positioning General Paint as the number one paint company in Canada.

Advance Wood Processing

The Centre for Advance Wood Processing will be offering the Online Certificate in Industrial Wood Finishing Course. The finishing certificate runs once a year from January 9 to April 23, 2012.

The online Industrial Wood Finishing course is one of the most comprehensive wood finishing courses offered in North America. It provides the learners with a broad understanding of the field of wood finishing. It is designed for individuals employed in the wood products industry who have some general experience in manufacturing and would like to expand their knowledge and

understanding of wood finishing. Learner will gain access to information on many aspects of wood finishing including: wood properties; colour theory; application methods; coating types; safety; environmental considerations; quality control and testing methods; and cost/economics. For more information on this course, please click the following link: Industrial Wood Finishing Certificate

To Register, contact Jason Chiu by email at Jason.chiu@ubc.ca or by telephone at 604 822-0082

CFCM New Mailing Address

Canadian Finishing and Coatings Manufacturing Magazine has changed its mailing address to 225 The East Mall, Suite 1103, Toronto, ON. New postal code is M9B 0A9. Phone numbers, fax and email addresses remain the same.

Berkshire Hathaway Completes Lubrizol Acquisition

Berkshire Hathaway Inc. announced the completion of the acquisition of Lubrizol Corp. for \$135 per share in an all-cash transaction valued at

approximately \$9.7 billion.

Lubrizol, based in Wickliffe, Ohio, is a diversified specialty-chemicals manufacturer with a product portfolio that includes resins and additives for coatings. The company will operate as a wholly-owned subsidiary of Berkshire Hathaway, will continue to be based in Wickliffe, and will continue to be led by its current management team, the companies said.

Berkshire Hathaway's subsidiaries include the paint and coatings manufacturer Benjamin Moore & Company.

Lonza Completes Acquisition of Arch Chemicals

Lonza Group Ltd., one of the world's leading suppliers to the life science industries has purchased Arch Chemicals, Inc. at a price of \$47.20 US per share.

Lonza now owns more than 90 per cent of the outstanding shares of Arch Chemicals common stock. The merger/acquisition was completed Oct. 21, 2011.

Lonza Microbial Control, a new business sector formed by the acquisition and led by Jeanne Thoma, will provide customers with a complete solution for their microbial control needs. The new business will be ideally positioned to increase R&D and product development spending across its broader product portfolio.

www.lonza.com

Clariant Announces Sale of Polysilazane Business; Uses Include Antigrffiti Coatings
German based Clariant announced the sale of its polysilazane coatings business to AZ Electronic Materials for approximately 4 million euros.

The polysilazane technology offers optically clear, anti-stick coatings that provide long-term graffiti- and dirt- resistance. Applications include transportation, building facades, public-use facilities and others. Chemically, polysilazanes are polymers based on alternating silicon and nitrogen atoms.

Coatings based on the technology are reported to offer a high degree of mechanical strength; chemical, UV and heat resistance; and adhesion to various substrates. The company's tutoProm® anti-graffiti coating is used by Deutsche Bahn (DB), the German railway company, for antigrffiti purposes.

Under the terms of the sale agreement, Clari-

ant retains exclusive rights to develop and use polysilazanes for composite materials and ceramics. The company said it will continue its development in the area of ceramic precursors and fibers based on polysilazanes.

Christian Kohlpaintner, member of Clariant's Executive Committee with responsibility for Group Technology Services (GTS), said the divestiture reflects the company's ongoing program of managing its technology portfolio and "refocusing" efforts on core new-business development activities.

ICL Performance Products

Acquires Halox

Halox (Hammond, Ind.), a division of Hammond Group Inc. and an industry leader in specialty phosphate-based corrosion inhibitor products for the paint and coating industry, has been acquired by ICL Performance Products, a global specialty phosphate producer.

The acquisition was finalized Oct. 1 and Halox will now operate as a division of ICL Performance Products.

The purchase includes Halox's research and development activities, manufacturing assets, and the company's distribution network for its phosphates-based products, ICL announced.

Ashland expands global Natrosol hydroxyethylcellulose production

Ashland Inc. is responding to strong demand for Natrosol hydroxyethylcellulose (HEC) by expanding HEC production across its global network through capacity additions at its facilities in Nanjing, China, and Zwijndrecht, the Netherlands. The new capacity of 7,000 metric tons being added will further reinforce Ashland's leading position in the market and will enable the company to continue supporting the growing needs of its customers. In addition, Ashland is increasing production of its Natrosol Plus hydrophobically modified HEC product line at its Parlin, N.J., plant.

Ashland Specialty Ingredients offers industry-leading products, technologies and resources for solving formulation and product performance challenges in key markets including personal care, pharmaceutical, food and beverage, coatings and energy.

Belzona Developing in Canada

Belzona Canada Inc. an industrial coating company, has opened a new spray training facility located on 500 Edward Avenue in Richmond Hill, ON. Their experienced engineers have been training contractors, consultants and distributors from across the world to spray in the three single heated airless spray booths. A second training is planned on the week of November 14, 2011. Belzona offers a Validated Training Course for experienced sprayers. These courses have been developed to follow internationally recognized Engineering Standards and are delivered to the highest standards. It reduces application risk and minimises the commercial risk of all parties involved in a project.

In addition, Belzona Canada Inc., the Canadian corporate office and Belzona Great Lakes, Ontario's



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November 14-16: FINISHING TECHNOLOGIES Pavilion and Conference at FABTECH Chicago II. www.ccaiweb.com

December 13: Toronto Society of Coatings Technology (TOSCO) Christmas Luncheon. More details TBA. www.toscot.org

Calendar of Industry Events 2012

March 20-22, 2012: FABTECH Canada, Toronto, ON, www.sme.org

April 30- May 2, 2012: Radtech Chicago II, www.radtech.org

May 7-10, 2012: American Coatings Conference and Show, Indianapolis, IN, USA, www.american-coatings-show.com

May 14-16, 2012: Montreal Manufacturing Technology Show, Montreal, QC, www.sme.org

June 11-13, 2012: SURFIN Las Vegas, NV, www.nasf.org

October 9-11, 2012: NAI Show, St. Louis, MO, www.thenaicoatingshow.com

November 12-14, 2012: FABTECH, Las Vegas, NV, www.sme.org

distributor, have both achieved their registration to the internationally recognized Quality Management System ISO 9001.

Belzona was first established in 1952 in Elland, West Yorkshire before moving to its Head Office in Harrogate in 1992.

Belzona is a world leader in the design and manufacture of polymer repair composites and industrial protective coatings for the repair, protection and improvement of machinery, equipment, buildings and structures.

It is a complete service with a global distribution network of over 140 Distributors operating in 120 countries.

Belzona operates from five corporate offices in Harrogate, UK, Miami, USA, Chonburi, Thailand, Hong Kong and Ontario, Canada.

Association News

CPCA Confers 2011 Industry Statesman, Roy Kennedy Outstanding Achievement Award

The Canadian Paint and Coatings Association (CPCA), recognized executives for exemplary service to the sector at its Industry Conference in Niagara Falls.



Dr. Paul Marriott, formerly of DuPont, received an Industry Statesman Award by Pierre Dufresne, Paul Marriott and Brian Edwards.

Dr. Peter Marr, formerly of Dominion Colour Corporation, was recognized with an Industry Statesman Award for his support for the paint and coatings industry.

"Dr. Marr has been a fearless spokesman for industry and a keen supporter of regulations that were appropriate for industry and that improved human health and the environment," said Pierre Dufresne, Chair, CPCA Board of Directors.

Dr. Paul Marriott, formerly of DuPont, received an Industry Statesman Award for his support for the CPCA through his work on CPCA committees and working groups, including the multi-stakeholder Industry Coordinating Group (ICG).

"Dr. Marriott's strong technical background regularly helped the CPCA make a case for appropriate changes to regulations and in some cases helped the Association convince government that regulation was not necessary and that a risk management approach was the way forward," said Brian Edwards, CPCA Director and former Board Chair, who presented the Award.

Jim Quick, former President of the CPCA, was recognized with the Roy Kennedy Outstanding



CPCA Chairman Pierre Dufresne presents former CPCA President Jim Quick with the Roy Kennedy Outstanding Achievement Award.



Darin Noble Home Hardware, presents outgoing Chairman Pierre Dufresne with a plaque

Achievement Award for his outstanding contribution to the Association.

"Jim Quick worked to renew the Association," said Mr. Dufresne. "His efforts have put the Association on a sound footing, and the initiatives he undertook remain critical to the Association's continued success. I know I speak for the entire Board when I say that it was a pleasure to work with him in a spirit of collegiality."

Canadian Paint and Coatings Association Names Board of Directors at Annual Conference

The Canadian Paint and Coatings Association

(CPCA) approved its Board of Directors for 2011 – 2012 at its Annual General Meeting in Niagara Falls, October 2011.

"The CPCA is delighted that these extremely capable individuals will serve on our Board of Directors as we work to help the sector continue to meet the health-related needs of Canadians, the public policy objectives of government and the business goals of industry," said Dale Constantinoff, CPCA Chair.

The CPCA Board of Directors 2011 – 2012 includes:

Dale Constantinoff, General Paint (Chair); Tim Vogel, Cloverdale Paint Inc. (Treasurer); Pierre Dufresne, AkzoNobel (Past Chair); André Buisson, Société Laurentide Inc.; Andrew Doyle, American Coatings Association; Rick J. Duha, The Duha Group; Sharon M. Kelly, Kelcoatings Ltd.; Mike Klein, Dominion Color Corporation; Marc Muff, BASF Canada; Ron Nakamura, PPG Canada Inc.; Darrin Noble, Home Hardware Stores Ltd.; Ed Thompson, L.V. Lomas Ltd.; Mario Tremblay, DuPont Performance Coatings; Richard Tremblay, Benjamin Moore & Co. Ltd. and Fred Veghelyi, OPC Polymers Canada.

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CPCA 2011 Takes in the Falls

CPCA Industry Conference 2011 took place October 1 – 3, 2011, at the Crowne Plaza Niagara Falls Fallsview in Niagara Falls. Expert Speakers focused on:

- North American and global markets, the performance of the U.S. economy and some of the main regulatory issues facing the sector
- How critical economic trends are affecting Canada's economy —particularly the paint and coatings sector
- How leadership makes people more competent and effective
- Product stewardship, from the viewpoint of industry and how sectors can



Connie, Allysa, Darin and Lauryn Nobel on AeroCar.

- work together to help shape the future of stewardship
- Nanotechnology, looking at advances in research and commercialization prospects
- Where the paint and coatings sector is now, what must be done for the future and how companies can work together to ensure the health of the sector over the long term

Part of the after hours Conference festivities included Journey Behind the Falls, Maid of the Mist and Whirlpool Aero Car. Organizers are pleased with the event's attendance.

Photos by Pete Wilkinson



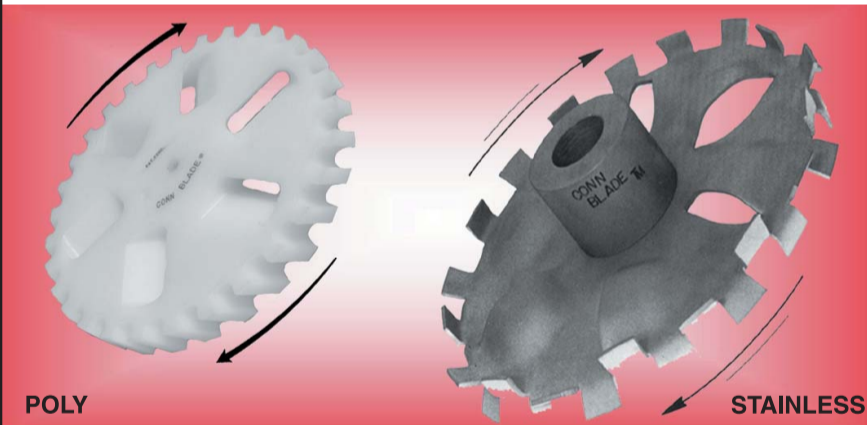
Andy Doyle, President American Coatings Association.



Derek Burleson, VP Deputy Chief Economist TD Bank Financial Group.

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Ron and Sue Nakamura and Rafael Hinojos PPG.



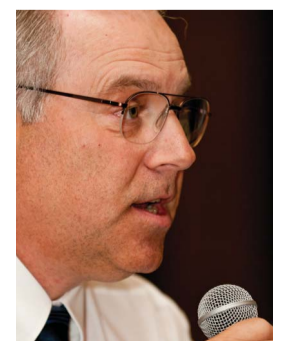
Behind Niagara Falls.



Tim Vogel, Cloverdale Paint.



Mike Klein Dominion Colour.

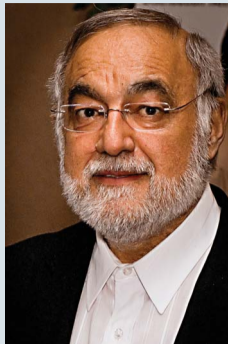


Dale Constantinoff, General Paint.

People

Obituary:

Bruno Simeone, a Friend, a Coach, a Mentor



The paint and coating and finishing industry mourns its great friend, Bruno Bernard Simeone, who passed away Tuesday, October 4, 2011. He was 64.

Born in Montreal on April 14, 1947, Bruno is survived by his wife Mary and three children, twin boys John and Paul and daughter Christine, who live in the Brampton, ON area.

Bruno was a great help to CFM magazine when it first began in 2007 and was always ready to offer good sound advice when asked.

He began in the industry working for Binks in 1967, then moved to Graco while still in Montreal. Then Graco transferred him to Toronto. After almost three decades he left Graco to start his own business BBS Services, which consisted of offering assistance to individuals in the industry looking for a job. He also helped facilitate companies who wanted to buy or sell other companies. Approximately six years ago he contracted a virus, which went after his heart, resulting in a heart transplant.

In his youth he studied at a Jesuit school for a couple years, which is most likely where he learned to master his skill at research. He kept meticulous records and kept his daytimers dated back several decades in chronological order. He enjoyed good food and when he went to a new restaurant he would keep a written record of when he was there and what he thought of it. One of his first jobs in his youth was a waiter in a restaurant. He was a collector of knives, Swiss army and hunting knives, although he was not a hunter. He had a great sense of humour.

Doug Taylor of Yorke Towne worked with Bruno at Graco and describes him as "a very good man both in terms of working with him and a good family man as well."

Brian Berenz, who works at Annadale said he talked to Bruno about once a month and was numb when he heard the news of his passing. Berenz worked under Simeone at Graco for 17 years and has known him for a total of 30 years. "He was my boss and mentor and taught me about RRSPs." One memory that sticks in his mind is when Simeone told him, "You make some money, you put a little aside for a rainy day, always!"

Berenz says the fact that he had no obituary published in the newspaper and a very simple funeral was "typical Bruno." "He was never one to pat his own back or take credit for stuff and yet he touched a lot of people in our industry, that's for sure."

Berenz says that Bruno was always on the cusp of knowing what was going to happen in the industry. "He was organized beyond belief."

Robert Ablamowicz, Architectural Segment Leader, DuPont Industrial Coating Solutions, sums it up for all when he says, "Bruno was champion of our industry having been involved for 40 or so years. He promoted coatings, our industry in Canada. His finest attribute was that he was a friend, a coach and mentor to so many."

Ablamowicz adds, "A statesman of coatings in Canada and a loss for our business."

Services were held Saturday October 8, 2011, at Ward Funeral Home, Brampton Chapel, Brampton, ON. Cremation followed. In lieu of flowers Simeone requested donations to Toronto General Hospital where he had his heart transplant, or to the MS Foundation.

Perhaps it is suitable that his funeral was on Thanksgiving weekend as many give thanks for having known him. Bruno Bernard Simeone will be greatly missed.

Paradigm Shift in Measurement Technology

By Robert Tucker
Stone Tucker Instruments

The coating industry has asked for a suite of instruments that measure the critical parameters for coating application capable of providing users with paperless quality records and data portability. Previous attempts to achieve this led to the development of manufacturer-specific proprietary software, which did not fully address the needs of data integration and promulgation.

Why would I call this launch of the redesigned PosiTector 6000, Dew point Meter, and the new Surface Profile Gage (SPG) a paradigm shift in technology?

The redesign and new product launch of DeFelsko's suite of inspection instruments showcases many changes, but the paradigm shift is based on three changes, which this article shall seek to explain.

- 1) Universal Gage Body
- 2) USB Mass Storage Device
- 3) PosiTector.net Free Web-Based Application

The redesigned PosiTector Gauge Body by DeFelsko means the user can have one gauge body with three different probes yielding three different functionalities. The PosiTector 6000 coating thickness gauge has always been noted for probe interchangeability. The new universal PosiTector gage body has expanded this interchangeability to include all 6000 coating thickness probes, all dew point probes and the new surface profile probe.

With USB mass storage, stored readings and graphs can be accessed using universal PC/ Mac web browsers or file explorers.



The PosiTector 6000, SPG, and DPM use an USB mass storage device, which provides a simple interface to retrieve data in a manner similar to USB flash drives, cameras, or digital audio players. Any computer can view and download measurements stored in memory (in batches) by navigating a virtual drive labelled "PosiTector" using the included USB cable. Manufacturer proprietary software is not required to view or manipulate data. Data is stored as TXT files and JPEG for graphics.

PosiTector.net begins a foray into cloud-based computing, and is a free web-based application offering secure centralized management of measurement data. The secure PosiTector.net will allow you to upload stored measurements, generate detailed and customizable reports, and share your results with your colleagues via a secure internet connection.

Simply create an account on PosiTector.net, download and install PosiTector Desktop Manager, then connect your PosiTector 6000, SPG or DPM to your PC with the included USB cable and your readings are instantly

uploaded and stored onto your own password protected PosiTector.net page (website). Once uploaded, you can create detailed/customizable reports, add pictures and annotations, export to XML or CSV, even share your information with your colleagues.



The paradigm shift discussed here can be said to be a movement towards greater versatility and even universality in the coatings inspection industry. The PosiTector universal gauge body allows for the most important parameters in a coatings job to be measured and recorded by one device. USB mass storage in the device allows for greater transferability and transparency of data. The gauges are web-enabled and provide online data storage and manipulation, allowing the user the greatest possible access to their data, in a format that is easily shared. PosiSoft software is still available for this generation of gauges so that our users can choose from a wide range of methods for reporting and storage of data.



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NAI Show 2011

The North American Industrial Coating Show (NAI) took place in Cincinnati, OH October 4-6, 2011 and CFCM magazine was there.

Photos by Sandy Anderson

- 1: Erie Powder's Bruce Hilbert and Brian Coutts at the booth with a focus on Anti-Graffiti coatings this year.
- 2: ElectroSteam's Myles Compton and Joseph O'Neill.
- 3: Nordson's Brad Syrowski, in charge of Canada's marketing and Lanny Hypes show off the Trilogy Liquid Gun at the Nordson booth.
- 4: Bob Tucker, Stone Tucker Instruments and DeFelsko's David Beamish were on hand at the booth to discuss the companies newest technology.
- 5: Canadian exhibitors Nilex Civil Environment Group from Edmonton, AB, Colin Watson and Kelly Baker.
- 6: Henkel's Pat Scalera explains a new ElectroCeramic coating.
- 7: Greg Taylor and Karen Winter with the OptiCenter at Gema booth.
- 8: AkzoNobel's Jim Clark, market segment manager for Canada showing new Interpon powder coating colours.



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AAC Conference in Arizona

The Aluminum Anodizers Council held their 20th International Conference and Expo in Tempe AZ. The conference had three days of presentations from around the world.

A dinner highlighted the 20th Anniversary and Donald L. Johnson, one of the founders of the council had a "fireside chat" with AAC President Greg Rajsky.

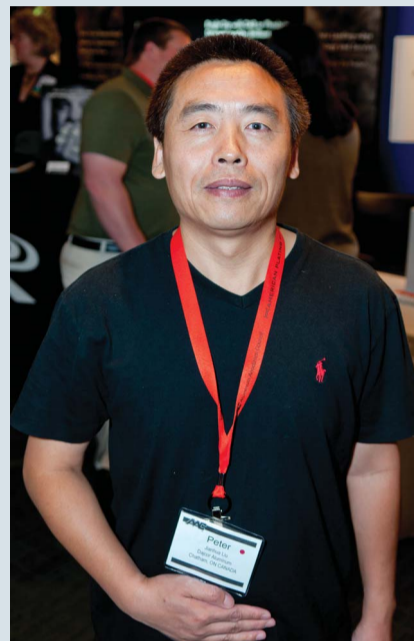
Photos by Pete Wilkinson



Greg Rajsky and Donald L. Johnson.



Ed Burlingham demonstrating plastic clamps.



Peter Jianhua Liu, Dajcor Aluminum, Chatham ON.



Nathan Newman, Arizona State University.



Student Poster Competition Judging.



Frank Murphy, Raytheon Elcan Optical, Midland ON.



Gerald Cole, Lightweight Strategies.



Charles Este and Vince Tomlin, Northern Technical Solutions, Guelph ON with Andrea Saulsbury, Eastern Plating, Baltimore MD.

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Nano Regulatory Status

By Dave Saucier

Hold on to your hats as we start a very busy 2012 on the regulatory front. The regulatory departments of all companies in the paint and coatings supply chain will be exceedingly busy. We have much activity within the Canadian Environmental Protection Act (CEPA-1999) and continue to wait out our trading partners on implementation of the Global Harmonized System (GHS).

Regarding CEPA-1999 specifically, on October 2nd, 2011, the Government of Canada announced that it will extend funding to the Chemical Management Plan (CMP). The CMP has received rave reviews from Non-Government Organizations (NGOs) and has been the recipient of very favourable press within Canada and the entire global regulatory community. Industry has worked closely with Environment and Health Canada to assist with screening assessments and the program has worked well for all parties involved.

Phase 2 of CMP will now move forward and be added on top of some projects just getting under-

way that include some classes of substances used throughout the coatings industry. We expect a brisk regulatory season with the current majority Conservative government. There are also 4 surveys that Environment Canada that will keep everyone busy over the next 12 months. Substance Grouping is also an initiative suggested by industry for which the Government has agreed.

A Canada Gazette CEPA Section 71 notice should be issued any day now covering Azo and Benzidine substances, which cover a wide spectrum of pigments and dyes used by the inks and coatings industry. The Industrial Coordinating Group (ICG) which consists of member representatives from the CPCA, CPMA, TOSCOT and the CACD, along with many other trade associations has a very active surveys sub-committee devoted to working closely with our counterparts at Environment Canada to organize and agree upon the scope and elements of mandatory surveys. Section 71 Survey is an instrument available to the government to collect data for screening and assessment purposes. The summer of 2011 was indeed

very busy as the surveys sub-committee negotiated the Section 71 survey listing from 359 substances to 225 substances. Industry received some, but not all, of the concessions it was looking for, especially the reporting trigger volumes, which may be a precedent setting 10 kg/year. However, industry has requested a 100 kg threshold, but may settle at 25kg. Pigments and dyes will be assessed separately.

Another Section 71 survey on the table covers Petroleum Stream 4 Substances that captures a vast number of solvents used by the ink and coatings industry. This survey will likely rapidly follow the Azo/Benzidine survey. Stream 4 lists common solvents that include Stoddard Solvent, and the wide range of Naphtha and Distillates common to coatings formulations. As of now, your company may be captured if it imported or produced 100 kg or 1,000 kg at ANY concentration. Exemptions are limited to uses for internal combustion engines, closed hydraulic fluid systems, or to reduce friction wear or corrosion resistance. There may be a requirement to provide trade names associated to substances sold into the market place and may affect private label confidential information. The ICG surveys sub-committee continues to work on negotiating final details, but we expect a Gazette Notice very early 2012 covering 2011 activities.

Nanotechnologies have been a mainstream topic now for over 5 years. Environment Canada met with stakeholders in 2006 and published a proposed regulatory framework for nanomaterials under the Canadian Environmental Protection Act (CEPA-1999) on September 10, 2007. The proposal back in 2007 consisted of 2 phases as international and domestic activities progressed.

One of the challenges facing regulators is the basic science of nanotechnology as it continues to evolve. We are still awaiting firm regulatory definitions but have generally used the scale of 1 to 100 nanometres as a loose definition for nanomaterials. In Canada, the current practice regarding existing nanosubstances is if the "substance" appears on Canada's Domestic Substances List (DSL) then it is permitted to be imported or produced in Canada without having to notify under the provisions of the New Substances Notification Regulations (NSNR). Nanomaterials are becoming significant research and development drivers within the coatings industry as well as in others, such as health and food.

Health Canada has created a policy position

regarding nanomaterials. The policy statement is updated regularly as new information emerges. A challenge facing all stakeholders is that currently there is insufficient evidence to establish common threshold values for size distributions of relevance across all substances and product lines that Health Canada regulates. Industry will require clarity regarding a regulatory path forward. To begin this process the Government will issue a Section 71 survey tentatively in early 2012. It is anticipated to cover nanomaterials that meet the following:

- Graphene
- Single or multi-walled carbon nanotubes
- A fullerene with a molecular formula containing 60 carbon atoms or more
- A quantum dot
- A dendrimer
- Manufactured to have one or more spatial dimensions between 1 and 100 nanometres

A number of exclusions are being considered: examples applicable to the coatings industry are surfactant micelles and organic or organo-metallic pigments. The quantity threshold may be as low 1 kg/year imported, at any concentration whether alone or in a mixture. Also being considered for inclusion are imports of carbon black, quartz or cristobalite at any concentration alone or in a mixture at thresholds of between 1kg and 100 kg/year. Guidance on reporting will be required to ensure that the correct manufacturers and/or importers are captured.

Respecting the fourth CEPA-1999 initiative, "substance grouping" will also be used as a tool in an effort to introduce screening assessment efficiencies for both the Government and industry. The groupings are established as follows:

- Substituted Diphenyls
- Cobalt containing substances
- Methylendiphenyl Diisocyanates (MDI) and diamines (MDA)
- Certain Internationally Classified Substances
- Selenium containing substances
- Certain Organic Flame Retarders
- Phthalates
- Boron containing substances

Environment Canada has lined up their management team to handle each grouping and the ICG survey sub-committee will work closely with Government champion to ensure efficient information gathering processes are developed.

Finally, both the Government of Canada and industry await our US trade partners to determine a target launch date for the Global Harmonized System (GHS). It is anticipated that the process to introduce legislation along with required individual Provincial companion legislation will take 2-4 years. By the next issue of CFCM we should have a better understanding of the timelines for GHS implementation.

In conclusion, hold on to your hats as the coming 12 months will be exceedingly busy for all regulatory personnel throughout the supply chain. Industry should continue to work collaboratively with the Government to ensure the continued success of CMP2, which ensures the safety of products consumed by Canadians and our environment.

Dave Saucier is Manager, Regulatory and Government Affairs for the Canadian Association of Chemical Distributors and also is a member of the ICG Surveys Sub-Committee. For further information please contact Dave at 905-844-9140 or by email: dave@cacd.ca

www.toscot.org

Northspec Chemicals celebrated its 10th Anniversary in Niagara on the Lake this Fall. Principals John Maclean and Noel Shahnazarian welcomed customers and suppliers to a great dinner and casino night with many prizes for all.

Photos by Pete Wilkinson



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Dan Thomas, Kathleen Hynes and Ron Lum, Korzite Coatings.



Tim Polger, Novant Chemicals and Noel Shahnazarian, Northspec, Principal Northspec



Maggie Jackson, Northspec Chemicals, Betty and Bob Snyder Microcolor Dispersions and Randy Rogers, Serif Coatings.



John Maclean Northspec Chemicals, Principal welcomes guests.



Lynette and Philip Liang, Polymer Specialty Coatings with John Maclean, Northspec.



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INDUSTRIAL FINISHING: CONVEYORS

continued from front cover

with future measurements. It should be noted that chain "stretch" may not be linear. Some chains may experience a break-in period before "stretching" at a fairly linear rate and then with an accelerated rate near the end of the service life.

Most conveyors will have a take-up

unit, that is located on the output side of the drive, to take the excess chain away from the output of the drive, thereby eliminating the possibility of the driven chain accumulating in the drive and causing jams. It is critical that the take-up operates freely and that only sufficient tension

is applied to it to remove the excess chain and prevent jams in the drive. Excess tension on the take-up will add undesirable chain pull to the system.

Once mechanical malfunctions are eliminated, addressed and external influences mitigated, the most significant impact on conveyor performance is the correct selection of lubricant.

The usual considerations with lubricants are: Does the conveyor go through an oven? If so, at what temperature does the oven operate? What is the line speed? Although an oven may operate at a specific temperature, the conveyor chain may not reach that temperature depending on the time in the oven.

Some Users of "dry-film" lube often lubricate continuously while users of high quality synthetics may only have to lubricate once per week. While a conveyor application may not need the capability of a high quality synthetic, there may not be any negative consequences using it, however, a conveyor that needs the high quality synthetic will prematurely wear if it doesn't receive it.

Not all lubricators are capable of applying higher viscosity lubricants. When considering lubricant for a conveyor, it is important to realize that conveyor chains move via wheels, which are really bearings. The best way to reduce chain pull from internal bearing friction is through the application of a quality lubricant capable of protecting the wheels and reducing friction in the specific operating conditions.

By far, the most difficult challenge for the lubricant is the operating temperature of the chain. All other considerations are secondary if the lube flashes off as soon as it is applied before it has a chance to work. Many "conveyor" lubricants are mainly composed of a very high content (90 per cent) of VOC based solvents that flash off and are not contained within the finishing

environmental system. Frequently, customers find it beneficial to try a few different types of lubes to determine which offers the most benefits economically.

Regardless of the type or quality of lubricant that is being applied, an automatic lubricator ensures that the conveyor is continually being lubricated on a preset maintenance schedule to suit the application. Lubricators are available as greasers, brush lubricators and shot lubricators.

A shot lubricator should be able to dispense a wide variety of lubricants and viscosities as opposed to being only capable of applying solvent based "dry-film" type low viscosity lubes. Choose a lubricator that will function with a wide range of viscosities. This also allows the flexibility to change lubricants at a later time. A good quality lubricator can apply lube in the viscosity range of 30 SUS (viscosity of mineral spirits) to 30 SAE (viscosity of motor oil), which is also equivalent to ISO 2 to ISO 100.

To be able to apply a wide range of lubricant viscosities, the lubricator should be factory air operated and controlled electrically, not just electrically operated. Most electric only lubricators are only capable of applying lower viscosity "dry-film" type lubes, which may limit lubricant options in the future.

The lubricator should allow for the adjustment of the quantity of lubricant for each point being lubed as bearings will require more lube than pivot points of the chain.

There should be a microprocessor that counts the conveyor circuits and applies lube based on a pre-determined schedule. Timer based systems are unreliable, usually don't correlate with conveyor run time and don't consider variations in line speeds. Brush lubricators, as well as most manual methods, tend to be done reactively – when there are problems. Additionally, brush lubricators apply lube indiscriminately and excessively; wasting money and not necessarily getting the lube where it is needed.

Another feature to look for are lubricators that count trolleys using a non-contact proximity sensor. This allows the conveyor to run in either direction without interference.

The lubricator nozzles should have check valves in the tips to eliminate dripping. The lubricator should be easy to maintain, and not require outside help to operate, so ideally they should be placed on a lower section of track to facilitate refilling and verify that the nozzles are accurately aimed. Often placement is best between the unload and load section of the conveyor.

The selection of a high quality air powered electrically controlled lubricator will allow for the most lubricant options ensuring that the conveyor operates reliably and economically for years to come. ■

Shaun Hammel is President of Enclosed Track Conveyors based in Ontario.



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MASKING TRENDS

and New Products for the Coatings Industry

Suppliers of masking products are answering customers' needs with new products and solutions to specific masking problems.

WORKING WITH CUSTOMERS

Mike Hudson of Caps'nPlugs says, "Silicone custom jobs have really taken off this past year and customers like the fact that the mask can be used many times for the same job. Although there is tooling initially, customers are finding, in the long run, that custom masks really pay off."

Hudson says customers are asking for "Long term masking solutions for multiple production runs over a long term contract."

"Many customers are finding that standard products will not take the high heat and corrosive chemicals in today's applications. Caps'nPlugs specializes in custom-made silicone product to alleviate such problems with high quality products, low production lead times and competitive prices.

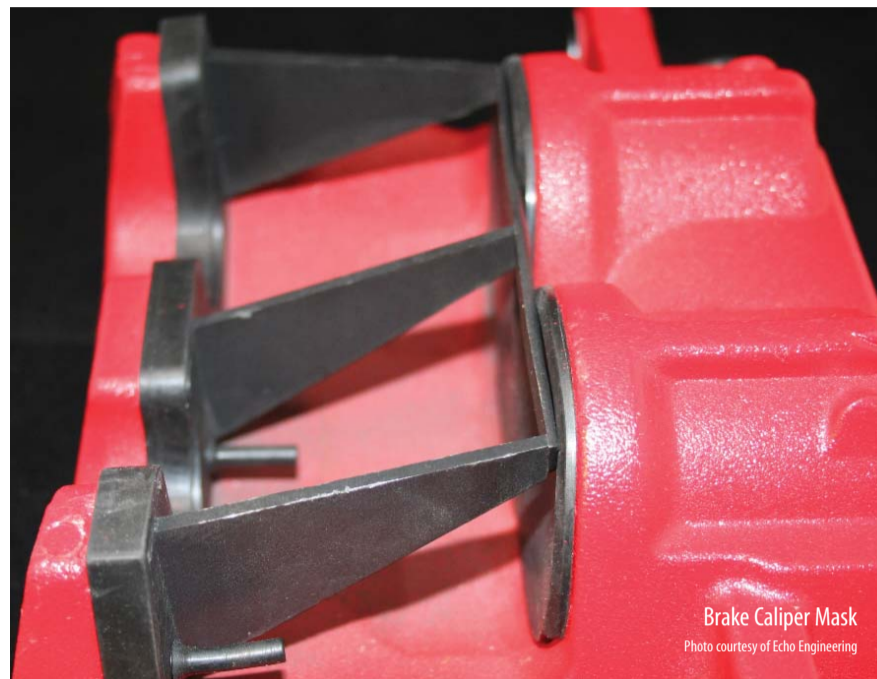
Caps'nPlugs has added an Industrial

Tape line (Formerly Insurge Tape) based in Milton, Ontario and now carries a full line of electrical and industrial grade tapes, films, foams, adhesives and specialty products. They also do in-house Custom Slitting & Converting.

The requirements for masking continue to be more stringent, forcing customers to rely on their supplier to be more involved with projects and provide solutions rather than products according to Ryan Carmen, Sales Manager, Echo Engineering. "We have been successful in adapting to these needs and "changing their expectations".

"Customers are requiring more personal service. They are looking for a partner and not just a catalogue product supplier. They want us to know their production capabilities and tailor solutions to fit their goals, which is why we have a 97 per cent customer retention rate," says Carmen.

"Our company's most valuable product is our employees," says Carmen. "They are our customers' greatest resource. A catalogue does not understand their needs. The



Brake Caliper Mask
Photo courtesy of Echo Engineering

person they meet with or talk to, must. Problems become opportunities for improvement in quality, productivity, and cost savings. By fully understanding their challenges we can provide the best physical products to meet their needs."

"We have been working directly with many of our customers in analyzing their processes and work flow," says Todd Schuh Design Engineer for Engineered Products and Services Inc. (epsi). "With looking at the big picture we have been able to help develop better solutions for quality and cost reductions. A number of times the solutions have reduced or even eliminated the need for masking.

Schuh says customers are looking for "a product that costs nothing and that can perform miracles. This sounds funny but in the end, this is what they really want."

Realistically, though, he says when it comes to masking, customers are looking for low cost, perfect paint edge, easy application, easy removal, accuracy, reusability, speed and easy to clean.

TAPE DOT

Schuh from epsi explains, "Tape Dot location has faced issues with tighter tolerances being demanded by the manufacturers. Placing a Dot just off center by even 0.030 in. can scrap the part, and depending on the part, this can cost hundreds of dollars. Requests for locating marks to be added to the Tape Dots has increased greatly in the last couple years to help reduce this. This still leaves the location up to the individual worker to Eyeball the location with the marks."

Schuh continues, "Over the last few

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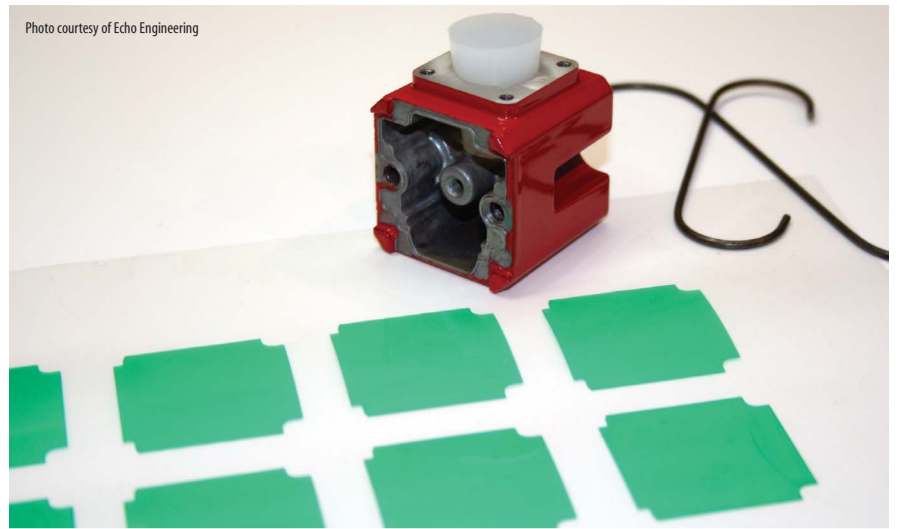
years, we have been developing other designs to help reduce these issues of locating a masking Dot. The Teflon Dot was developed first in conjunction with a customer with a very high-speed paint line. The need to place a masking Dot correctly and quickly was only part of the task as they also had no time to pick at the Tape Dot to remove it. As the development went on, some other benefits we realized such as the paint on the Teflon removes easily with a wiping action and tends not to draw paint around the edges as much as silicone. With the Teflon masks being a custom machined part, we are able to create different lip designs with overhangs to reduce the paint burr. The Teflon mask can be designed in just about any shape to

suit a customer's specific need."

"During the development of the Teflon Magnetic Dot," says Schuh, one customer testing the mask wanted to try it on his E-Coat line. The Teflon, being more like a soft plastic, doesn't create a watertight seal against the surface and had mixed results. With a request to provide a silicone seal to fit the Teflon Dot, I asked, "Why pay for the Teflon mask if you're going to use a silicone washer with it anyway?"

"Then the Silicone Magnetic Dot was born," says Schuh.

He adds, "I realized that the Silicone Magnetic Dot could be produced much more economically than the Teflon version if you really didn't need the full benefits of the Teflon. This seemed to bring



the cost range down to where you didn't have to be running a big fast line to be able to realize the benefits of the magnetic masking."

"The mold is designed to allow for the bottom seal and overhang surfaces to be modified very simply by machining a new bottom mold plate and swapping it in. This saves time and money," says Schuh.

"The concept isn't necessarily new to use a magnet in a silicone part but our design allows for the magnets to be reusable thus reducing cost and waste. I can't see throwing out a good magnet just because the silicone has been used beyond its limit.

For masking on non-ferrous parts such as aluminum, epsi used two magnetic dots, one on each side of the part to draw towards each other. "Many combinations can be created," says Schuh.

flake off.

Steel parts only:

SILICONE MODULAR MASKING

Epsi has a new line of products, - Silicone Modular Masking (SMM). "This consists of SMS - Silicone Modular Stoppers that have a hole in the center and our Silicone Stem. These can be assembled in a wide range of configurations," says Schuh. The best use for this new product line is for masking a tube or hollow part that requires masking from both ends. The normal method of plugging both ends can result in one or both plugs popping out. The Stem creates a locking effect to hold the plugs in place. If by chance the pressure gets too high and overcomes the plugs seal, the pressure blows past the plug and then reseats itself. This concept can be used with our standard SMS, plugs or with any other custom part specific to your needs.

FIXTURE MASKING

"Many parts we are asked to mask require extensive taping, which is very expensive for labour and material," says Schuh. "One way we have solved this dilemma was to create fixture masking. This allows masking a large portion of the part and to also position it for painting and handling." He says this tends to save customer approximately 30 minutes of masking time.

MACHINING COST SAVINGS

Schuh says that several parts his company has worked on require machining, followed by plating and then finish machining. "This is very costly to have to set up a part, machine it near finished, remove it, ship it to the plating shop, ship it back and finish machining the part." He adds, "The handling alone is costly on top of paying to have them set up again in the machine shop. We were able to design a mask that allowed for the part to be machined fully, sent to the plating shop and then to assembly. The saving on the part production was enormous."

When it comes to masking in industrial finishing, customers are looking for low cost, perfect paint edge, easy application, easy removal, accuracy, reusability, speed and easy to clean and manufacturers are answering the call. ■

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NEW INNOVATIVE ROBOTIC TECHNOLOGY

BY BRAD SPARKMAN

In this new and emerging marketplace, manufacturers all over Canada and the United States are faced with continuous cost reduction demands and material savings requirements. This, unfortunately, is a necessity in manufacturing in North America today due to continuous off-shore pressure, a high Canadian Dollar and steadily increasing day to day capital costs.

As we know, the paint shop is typically the highest cost segment of the manufacturing process and is constantly striving to become even more cost effective and more efficient.

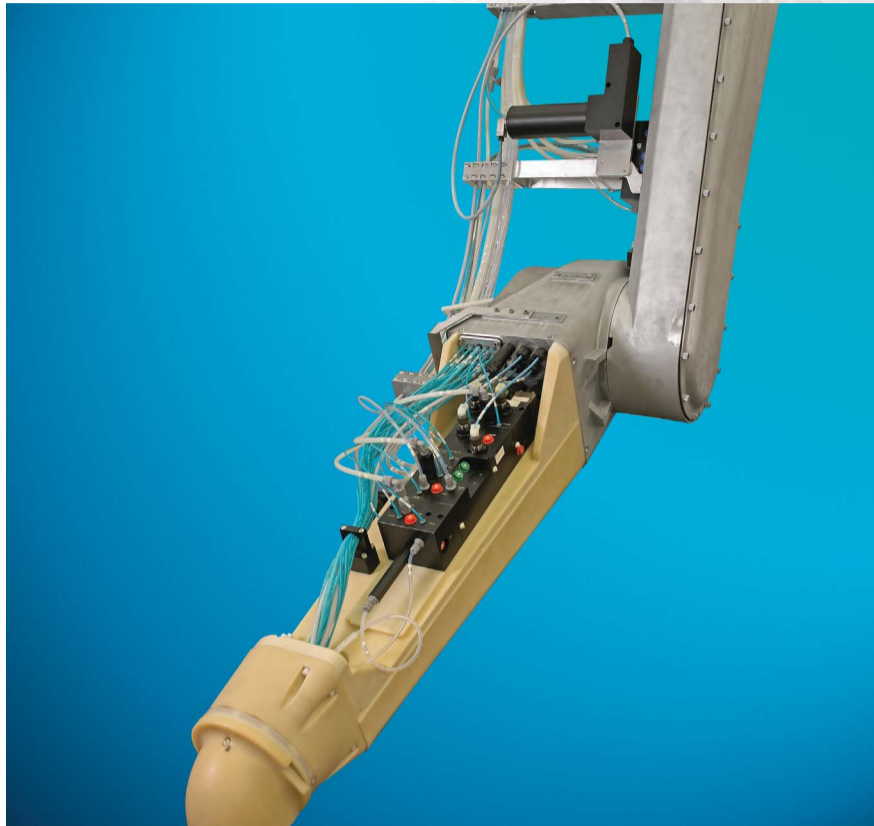
In recent years, advances in robotic paint shop applications have provided significant performance improvements in terms of application efficiency, quality and overall operating costs. Users of painting robots are still looking for further reductions in paint and solvent use, a smaller overall footprint, higher production thru-put, reduced installation time and cost, and the ability to process a wider range of products.

To meet these goals and objectives a new design approach has been successfully developed into robotic paint systems. This has evolved to integrating the robotic paint systems into the robot itself, which now provides further significant cost savings to users.

The following are several things that are now becoming commonplace with most of the new painting robots that are being installed in North America.

FANUC Robotics was the first robot designed around the painting equipment. For example, to minimize paint waste, color changers were manufactured out of lightweight robust materials and mounted on the arm of the robot as close as possible to the spray applicator. The paint and solvent supply lines are now routed through the center of the robot base, enabling the robot to rotate around the paint lines as opposed to having them managed through external hose routing with the potential of kinking or damaging the Teflon lines. This robot design and hose management solution improves the paint and solvent line reliability and overall life expectancy.

In addition, the robotic control software has been designed so that the most critical painting processes (the applicator trigger control) are now given high priority in the software code. This change allowed for more precise applicator trigger control, which directly impacts the reduction of paint and solvent waste. The



The above shows a FANUC Robot with in arm process equipment.

trigger valve is also located directly behind the robot wrist to ensure instant applicator triggering resulting in the ability to now trigger off and on where previously it would have been impossible, which results in further paint savings.

GOING 2K

Two component (2K) servo driven pumps are now being installed inside the FANUC Robotics P-250iA Paint Robot. This breakthrough now enables the catalyst and the resin to be pumped by a servo motor (at the required flow and ratio with precise servo reliability) to a mix manifold directly mounted behind the robots wrist. This allows for quicker colour changes and a significant reduction in paint and solvent waste.

OPEN ARCHITECTURE INNER ARMS

FANUC Robotics now offers open architecture inner arms for integrating the pneumatic process controls directly inside the paint robot arm. This allows all of the pneumatic controls to be instantaneous with the process equipment allowing complete optimization in the products cycle time and overall paint process. This solution is pre-installed and tested prior to the robot shipping to the facility allowing for rapid installations and risk reduction. The inner arm process controls architecture, and greatly reduces the number of control panels that are now required, freeing up valuable aisle space outside the booth and the time and cost

associated to install and interface them.

Spray booth energy management is a common concern for paint shops as most booths today are temperature and humidity controlled. With continuously increasing energy costs a smaller spray booth footprint means less volume of temperature and humidity controlled air is required, resulting in a reduced overall cost. Robots today are designed to paint in smaller spray booths, while still maintaining flexibility to accommodate a wide range of part sizes without compromise.

In summary, the enhancements of these components now provide significant improvements in application efficiency, system uptime and overall duty cycle of the equipment, along with reducing operating and capital equipment costs.

Brad Sparkman is President of Innovative Finishing Solutions, based in Orangeville, ON, an exclusive FANUC Robotics Distributor.

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Illuminating Wear With Composite Electroless Nickel Coatings

A new type of electroless nickel coating, that can be made to glow in the dark, is finding a market among manufacturers who need to know when a coating is wearing off, either to prevent damage to the underlying part or to ensure consistency of the resulting product.

Surface Technology Inc., a New Jersey based company that makes electroless nickel products began creating phosphorescent coatings in response to demand from a customer in the textile industry who wanted to protect an expensive component.

“Our customer had an intricate part that was being coated with our composite diamond coating,” says President Michael Feldstein. “They wanted to be able to determine when the coating had worn off so that they could replace it and prevent damage to the base metal piece underneath.”

Developed in the 1940s, electroless nickel coatings now come in a variety of composite forms to suit specific conditions, from high temperature environments to applications that require lower friction or corrosion resistance. The most common material incorporated into composites is diamond because of its unsurpassed ability to resist wear.

Surface Technology’s composite phosphorescent coatings have all the inherent features of electroless nickel and are indistinguishable under normal lighting, but they emit a constant glow when exposed to UV light. The phosphorescence can either be integrated directly into the functional coating or serve as a stand-alone “indicator layer” underneath the functional layer.

The latter application is particularly useful in moulding applications where the shape and volume of the mould should remain consistent while, slowly and imperceptibly, being worn down with use. When a phosphorescent “indicator layer” underlies the functional coating, an inspector can use a hand-held ultra-violet light to check for wear on a regular basis and save the mould from damage.

“If spots of light come through, that means at least part of the functional coating is worn through and it’s time to pull it off and have it stripped and recoated,” says Feldstein. “It’s all about preserving the base part.”

Another potential market for phosphorescent coatings rests with manufacturers who want to ensure authenticity before installing parts in their equipment.

“Some machine shops are able to

What is Electroless Nickel Plating?

Components plated in electroless nickel possess an excellent combination of wear resistance, corrosion protection and chemical resistance, which makes it a popular choice for our customers looking to resolve their corrosion, friction and release problems.

It is increasingly preferred over conventional electrolytic plating because of the uniformity of its deposit. It provides a highly accurate layer with no deviation in plating depth over the entire surface of a component, regardless of the complexity of its design.

Electroless plating is the process of using an auto-catalytic chemical reaction to deposit a coating onto a wide range of substrates. Electroless nickel plating uses a solution that is a nickel phosphorous alloy and the plating solution composition can be tailored to suit a particular application.

Unlike traditional electroplating, an electric current is not passed through either the component nor plating solution, in order to form a plated deposit.

Electroless nickel can be applied to wide range of substrates, aluminium and aluminium alloys, copper and copper alloys, ferrous and stainless metals, beryllium copper, zinc and titanium.

The electroless nickel plating process coats a metal such as mild or stainless steel so that the life of the part is substantially extended. A specialist nickel plating process can give mild steel corrosion resistance in salt water for up to 30 years.

Benefits of the electroless nickel plating process

- **Corrosion resistance** - electroless nickel plating will extend the life of everything it coats. This means that sectors with harsh environments such as marine, oil and gas and defence can reduce their cost of repair and replacement parts - including a massive saving on downtime.
- **Uniform coating** - this plating process has a completely uniform coating, and therefore is a solution for critical high-end engineering items such as defence, healthcare, automotive and aerospace.
- **Cost-effective** - specialist electroless nickel plating can be economical.
- **Wear resistance** - electroless nickel plating when in association with an appropriate heat treatment can be hardened up to 950 Vickers hardness number (VHN). Because it is also lubricious by nature this combination makes it an ideal specialist plating in areas where friction and wear are issues.

make a convincing counterfeit part for a proprietary piece of equipment, but they won’t have the technology to put on a composite electroless nickel coating with phosphorescent particles,” says Feldstein. “If the genuine part is tagged this way, all the operator needs to do is shine an ultra-

violet light on the piece to make sure it’s authentic and okay to use.”

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REACHING NEW MILESTONES

A few years ago plating on plastics was considered ground breaking, but has evolved to be a trusted and reliable form of processing with new innovation to meet customer demand.

THE PROCESSES OLD AND NEW

Plastics and plastic composite materials continue to be popular because they are light, corrosion-free and can be formed to virtually any shape. A metal surface gives plastics a high quality, decorative appearance and even complex components can be cost effectively mass produced.

Conventional plating on plastics for automotive applications for example, is almost always done on acrylonitrile-butadiene-styrene (ABS) or polycarbonate-acrylonitrile-butadiene-styrene (PC/ABS) substrates. Mixtures of chromic acid and sulfuric acid are employed to selectively attack the butadiene, thereby etching the plastic blend. This creates surface topography to provide mechanical adhesion of the plating to the plastic. Metallization is accomplished by palladium catalysis, followed by electroless copper or nickel of sufficient thickness to conductivity for electroplating.

Another process is environmentally friendly and broadens the number of materials that can be chrome plated also eliminates the need for chromic acid, and the associated environmental issues. It can be used to plate a wide variety of plastic resins. This process was identified in a paper co authored by employees of General Motors and MacDermid Inc. titled "A New Plating on Plastic Process for Chrome Plating non-ABS Substrates".

The activation process is carried out in a dedicated area and the parts are transported to the plating line dry. They are conditioned with a mild alkaline cleaner at 140 F with an immersion time of one to five minutes. The activator is alkaline, ionic palladium, rather than acidic, colloidal tin-palladium. Conditions are 110 F for 4 minutes. The accelerator is acidic and strongly reducing at 120 F for 3 minutes immersion.

The metallization process can be either electroless copper or electroless nickel. Existing formulations work fine for simple plating. New formulations can be used for special applications. Results showed that both TPO and ASA can be plated successfully to GM specifications using this process.

Plating on plastic can also be done using gas. Surface Activation was developed by Surface Activation Technologies (SAT; Troy, Mich.), which worked with MacDermid, GM and several other vendors perfecting the technology. MacDermid markets the process chemistries

under the name of Macuplex.

Gasses cause the atomic structure of the polymer to change to a depth of 25 microns, creating a polar and hydrophilic surface. The plastic can then be plated without chromic or sulfuric etching. This results in a more permanent and stable treatment to a wider variety of polymers.

GROUND BREAKING TECHNOLOGIES

Atotech in Burlington, ON, has been involved in plating on plastics from day one and have extensive experience in the development of plastic pretreatment systems. The company's customers use processes such as Adhemax, Futuron ULTRA, Noviganth PA and Covertron not just for mature industries such as the automotive, sanitary or cosmetics ones, but also for several other special and innovative applications. Some of these are plating on fashion items (shoes, belt-loops, etc.) or on consumer electronics (laptops cases, mobile phones, etc.).

- Adhemax is innovation for conventional pretreatment of plastics
- Futuron ULTRA is the next generation direct metallization for plating on plastics
- Noviganth PA is innovative cr(vi) free processing of polyamide materials
- Covertron is advanced technology for decorative and emi shielding applications

ACID COPPER

Atotech also has acid copper systems developed for plating on plastics. The processes provide the ductility to function as an interlayer between the flexible substrate and the subsequent nickel and chrome layers, as well as being highly decorative.

The company also offers pyrophosphate and alkaline cyanide-free copper.

NEW PRODUCTS

With its newest NeoLink, Atotech says it has reached a crucial new milestone in direct plating on plastics. Much shorter and cost-effective than conventional plating systems for plastic materials, NeoLink ensures fast metal deposition on ABS and ABS/PC blends with no need for electroless Ni or Cu plating and Ni or Cu strike. Furthermore, the low palladium formulation (50 - 70 ppm) of NeoLink Activator allows for minimized drag-out costs.

Unlike conventional plating systems, usually removing tin and tin chloride after activation in the accelerator step in order to expose palladium, NeoLink replaces tin with copper. As a result, copper links to palladium, providing a high and stable

electrical conductivity that allows for direct copper plating. Easily integrated in existing lines, NeoLink immediately improves productivity and the reliability of the production.

It meets the most demanding requirements of the automotive, sanitary, fashion and white goods industries worldwide.

Integran Technologies Inc. based in Mississauga, ON, provides plating on plastics services and is one of the few companies in North America who can plate on engineering polymers. The company focuses on functional plating, adding structural reinforcement, wear surfaces and EMI or magnetic shielding. Integran is a world leader in advanced metallurgical nanotechnologies, providing a broad international base of customers with advanced process & product design solutions through R&D, material sales, contract manufacturing and technology licensing.

INTEGRAN SETS STAGE FOR GROWTH WITH NEW SITE

Integran Technologies Inc., a world

leader in metal nanotechnologies, has consolidated its three Toronto locations into one facility at 6300 Northam Dr, Mississauga ON. The location features a 52,000 square foot building on a 5.2 acre lot that will accommodate its more than 150 employees. And it is near Pearson International Airport, and has the capacity to handle a significant expansion in Integran's operations, which as previously announced, involves a \$55M investment.

"This new location allows for critical expansion of our employee base to accommodate growth in our research and development into new nanocrystalline alloys and in licensing and manufacturing support for our existing technologies," says Gino Palumbo, CEO and President of Integran Technologies.

When it comes to plating on plastics, change and research and development will continue to offer solutions and new plating processes to meet the demand of this highly decorative result. ■

DYNAMIX Blending Technology, Service and Value



Dynamix is one of North America's fastest growing manufacturer and supplier of metal finishing chemistry. "The philosophy at Dynamix is simple - enhance our customers' performance and profitability, while dealing with all of our partners in an open and honest forum."

The primary focus of Dynamix is the design and manufacture of specialty chemicals for the metal finishing industry, covering all aspects of metal finishing from anodizing to zinc plating. Toll blending, packaging and distribution of custom formulated products are also available.

We offer a service that encompasses all of our values with a highly skilled and motivated team. The laboratory at Dynamix is well equipped and able to provide analytical solutions specific to a particular sector of industry and/or customer. Products are designed at Dynamix to provide unsurpassed performance and solution economy. Superior chemistry is only the beginning, as the company realizes that technical and application knowledge are just as vital to the metal finishers' success.

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PRESERVING Your Coatings

Biocide additives have been designed to keep bacteria from spoiling paint during storage, or to keep fungi and algae from growing on the applied paint.

Specialists talk about current trends in the industry concerning Biocides, Algaecides and Preservatives used in the manufacture of paint and coatings.

CURRENT CONCERNS

Michael Sheehan, Regional Commercial Manager, North America, at Dow Microbial Control says, "Across the world, consumers are becoming increasingly aware of their impact on the environment, and are demanding eco-friendly products that also meet high standards of performance." He adds, "For the Paints and Coatings industry this translates into stringent requirements for the decrease of volatile organic compound (VOC) levels and strict restrictions on the use of hazardous materials."

Jon Raymond, Sr. Microbiologist & Customer Application Specialist at Dow adds, "The move towards decreased organic content and use of more readily biodegradable or naturally derived raw materials, which are inherently more susceptible to microbial attack, has resulted

in products becoming increasingly harder to preserve." Raymond adds, "Simultaneously, the strict restrictions on the use of time-tested biocides, such as the formaldehyde releasing preservatives, are putting a strenuous demand on the paints and coatings manufacturers."

Gary Horacek, PhD, Director, Technical Microbiology Services – Americas, Troy Corporation says, "The largest concern in the marketplace for our customers is for wet-state protection of their products." He adds, "The reduction of VOC content, often coupled with a reduction in formaldehyde, is:

- 1) rendering their products more susceptible to contamination,
- 2) reducing the pool of acceptable preservatives that can be used,
- 3) resulting in a less robustly preserved final product and
- 4) placing a premium on plant hygiene."

Demand For Eco Conscious Microbial Control Solutions

"Alignment with eco-standards such as Green Seal, Blue Angel, Nordic Swan, Greenguard, and Design for Environment (DfE) is valued, especially when the eco-standard also establishes product quality

criteria, not only restrictions on the use of raw materials," says Sheehan. "Our customers are demanding eco-conscious microbial control solutions that will provide robust preservation of their low/no VOC products, and differentiate them in the market place by meeting new aggressive standards of quality, such as prolonged dry film protection."

Raymond adds, "The customers value Dow Microbial Control for the technical partnership we provide to understand and comply with global regulatory and eco-requirements, while meeting stringent performance and value targets. Dow Microbial Control's solution based approach, which includes a rigorous focus on Industrial Hygiene, the broadest globally registered product portfolio, unique testing capabilities, featuring high-throughput testing TAUNOVATE, and in-depth application expertise, positions us as a valued partner for solving challenging microbial problems."

The company puts the customer in control of their microbial challenges in the optimization of the antimicrobial solution by using synergistic combinations of biocides. Dow Microbial Control's proprietary high throughput technology allows for the screening of a large number of products, product combinations, and active ingredient ratios to provide antimicrobial solutions that are both performance and value optimized. This tool is especially valuable when seeking compliance with eco-standards.

Gary Horacek, PhD, Director, Technical Microbiology Services – Americas, Troy Corporation says, "First, they are asking for VOC-free and formaldehyde-free preservatives, then when they see the daunting issues they face in achieving the protection they need, they are asking for help in implementing an effective preservative program." He adds, "They are asking for help in program design, implementation, and follow-up on effectiveness."

"GREEN" STANDARDS

Standards such as Green Seal, Blue Angel, and DfE allow for use of small amounts of formaldehyde releasers to boost the preservative power.

"High throughput technology has been successfully employed globally to optimize preservative combinations based on BIOBAN BIT 20 or KATHON LX1.5 per cent chemistries with addition of small amounts of DOWICIL 75 to provide robust long-term preservation and compliance with global eco-labels," says Raymond.

"To address the antimicrobial challenges associated with the new trends towards low/no VOC eco-conscious products, any effective antimicrobial preservation strategy must begin with a robust

industrial hygiene program, that includes the use of a fast acting sanitizer, such as DOWICIL QK-20 Antimicrobial and offers added insurance against product spoilage, along with significantly decreased manufacturing down time and better asset utilization to result in overall reduced cost," says Raymond.

NEW PRODUCTS


Dow Microbial Control's approach to innovation includes delivery systems, a broad portfolio of globally registered actives, antimicrobial and analytical testing capability, strong formulation science, and comprehensive global regulatory support.

The company's BIOBAN™ 200 Antimicrobial is a new generation low-VOC (Volatile Organic Compound) paint film fungicide launched in the US, during the Summer of 2011. It is designed for the protection of paint films against unsightly fungal attack. In addition to providing excellent protection against surface molds and mildew on the paint film, the product also displays biocidal activity against algae and bacteria. The active ingredient in BIOBAN 200 Antimicrobial is 4,5-dichloro-2-n-octyl-4-isothiazolin-3-one, which is the same active ingredient used in the industry-proven ROZONE 2000 Antimicrobial and ROCIMA 200 Antimicrobial. "BIOBAN 200 is the result of high-class formulation development and extensive performance testing," said Claudinei Fava, Senior Technical Service Specialist, Dow Microbial Control. "The formulation is based on the well-proven dispersion technology and patented active stabilization of ROCIMA 200 with negligible VOC contribution to the paint formulations (per analytical test methods currently used). Therefore, BIOBAN 200 Antimicrobial is a good component for new generations of low-VOC, aqueous coatings." It is not yet available in Canada.

Meanwhile, for the Canadian market, Horacek says, "Troy has recently registered a 45 per cent BIT aqueous dispersion product in Canada called Mergal 753. Besides carrying the highest concentration of BIT available, Mergal 753 is non-alkaline and, of course, formaldehyde and VOC-free." He adds, "Using Mergal 753 instead of a conventional BIT dispersion cuts down on product volume used, transported, and inventoried. Mergal 753 also reduces the volume of packaging material required and reduces disposal cost for empty containers."

While, the reduction of VOC content, often coupled with a reduction in formaldehyde is making paints more vulnerable to unwanted contamination, Manufacturers are stepping up to the plate with Biocides, Algaecides and Preservatives that meet the challenges of the industry. ■

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Ever Increasing Demand

The demand for epoxy resins seems to be increasing globally as several leading manufacturers expand their plant capacities.

For example, Huntsman Corporation of Woodlands, TX, announced in September that it planned to further expand their multifunctional epoxy resins capacity and capability.

Huntsman Advanced Materials, the global market leader in multifunctional epoxy resins, has invested significantly during 2011, expanding its capacity and capability to produce multifunctional epoxy resins both in the United States and in Europe. It doubled the capacity at its Switzerland facility and enhancing its current capability to produce purified resins at its Alabama site. The company launched a multi-million dollar in-depth engineering study at its McIntosh, Alabama facility. Huntsman's expanded multifunctional resins capacity will serve the current and future needs of its customers in the aerospace and composite industries.

Once completed, the new line will further boost global production of all types of multifunctional epoxy resins.

"Demand for multifunctional epoxy resins, as a replacement for aluminum and other materials and the forecasted needs of the aerospace industry are major factors influencing this decision," says James Huntsman, President Advanced Materials Division. "We are committed to our valued customers in the aerospace and high-end composite industries."

Huntsman continued, "These investments will bring enormous benefit and value to our customers around the world, helping them address some of the engi-

neering challenges they face over the coming years to produce lighter, more efficient materials. I am also delighted this project will create hundreds of jobs at our McIntosh site."

Some of Huntsman's epoxy resin products are:

- ARALDITE: used in structural adhesives
- TACTIX: High purity epoxy resins for most demanding aerospace and electronic applications.

Dow Epoxy meanwhile, also announced an expansion this year. Dow Epoxy, a business unit of The Dow Chemical Company, plans to expand Liquid Epoxy Resin (LER) capacity at its plant in Stade, Germany. This expansion will provide additional capacity as early as fourth quarter 2012, and will increase capacity by 30 KTA, a 10 per cent increase in the Company's global LER capacity. The new capacity will be used to keep pace with expected market growth in specialty applications, while also supporting geographic growth throughout Europe, the Middle East, China, and India.

"Dow is committed to the epoxy business and to supporting growth with our global strategic customers," says Kevin Dillan, Global Business Director, Dow Epoxy. "This investment will provide us with reliable supply of epoxy resin from a world-class manufacturing facility."

GREEN EPOXY

In adherence to the huge environmental trend manufacturers are coming out with low or no volatile organic compound (VOC) versions of epoxy resins. There is

plenty of waterborne epoxy resin on the market and several green technologies offering a product that is colourless, odourless, low-viscosity and non-toxic. They can be made to not shrink when cured, be waterproof and have a high flashpoint making it safer to work with than other resin systems. Formulators need to discuss the benefits of "green" epoxy resins with their manufacturer.

EPOXY HISTORY

The term Epoxy resins is applied to a wide range of materials, both prepolymers (which contain reactive epoxy groups) and cured polymers that are still called epoxy resins although all of the reactive groups may have reacted during the polymerization process. The first epoxy resins were synthesized as early as 1891 although their commercialization did not come until much later following the pioneering work of two independent researchers Pierre Castan of Switzerland and Sylvan Greenlee of the US. Castan discovered the resin forming reaction between the diglycidyl ether of bisphenol-

A-, DGEBA and cyclic dicarboxylic anhydrides, when developing material for dental restoration.

The expansion in the range of applications for epoxy resins has been dramatic. In North America between 1979 and 1984 the usage of epoxies was divided almost equally between protective coatings and structural applications and this was mirrored by the consumption of these materials in Western Europe.

EPOXY RESINS 101

It is always helpful to brush up on the basics. Epoxy coatings are used because of their outstanding chemical resistance, durability, low porosity and strong bond strength. Epoxies consist of a 'base' and a 'curing' agent. The two components are mixed in a certain ratio. A chemical reaction occurs between the two parts generating heat (exotherm) and hardening the mixture into an inert, hard 'plastic'.

Epoxies yellow, chalk or lose their gloss in direct sunlight (UV). Although manufacturers are continually working on this issue, yellowing can be problem, so

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for pigmented epoxies it is good to select colors that are dark or contain a lot of yellow such as green. Even clear epoxies will yellow and cloud up. Often epoxies are topcoated with latex or urethanes that will retain their color and attractive gloss. This is particularly true if color-coding or matching company colors is important.

After the two epoxy parts are combined there is a working time (pot life) during which the epoxy can be applied or used. Generally the pot life will be anywhere from minutes to one hour or longer. At the end of the potlife the mixture becomes very warm (or even dangerously hot) and quickly begins to harden. Epoxies will harden in minutes or hours, but complete

cure (hardening) will generally take several days. Most epoxies will be suitably hard within a day or so, but may require more time to harden before the coating can be sanded.

In theory, a temperature change of -8 degrees C or 18 degrees F will double or half the potlife and cure time of an epoxy. Higher temperatures will lower the viscosity (thin) the epoxy, but also reduce the working time a person has to apply the epoxy. Spreading out the mixed epoxy instead of keeping it concentrated in a bucket or container will extend the potlife.

Generally epoxies become too thick and cure too slowly to be applied at tempera-

tures below 50 or 60 degrees F. Temperatures in the 60s, 70s, or low 80s, are best. After the epoxy has cured, it can handle temperatures well below zero degrees F.

Epoxies will begin to soften at about 140 degrees F, but will reharden when the temperature is reduced. For common epoxies this temperature is approximate upper end of working temperature range of epoxies. Special high temperature epoxies do exist, however.

By their nature, epoxies are hard and brittle. Additives can be added to epoxies that make them less brittle, but generally at the loss or reduction of other positive epoxy properties such as chemical resistance.

Manufacturers are stepping up with solutions offering special epoxy resin formulations that have enhanced resistance to yellowing and UV damage, increased chemical resistance, increased temperature resistance, the ability to be applied underwater and of course, environmentally friendly. ■

Editors Note: CFCM magazine receives plenty of New Product press releases concerning equipment, but is just as interested in new technologies or formulations such as in epoxy resins or otherwise. Please send your information to sandra.anderson@cfc.com.ca

IN THE NEWS

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FABTECH 2011 Expected to be the Largest Ever

FABTECH 2011 is expected to be the largest ever. Returning to Chicago's McCormick Place, Nov. 14-17, 2011, the event will offer four full days of activities and provide its projected 32,000 attendees with unlimited opportunities to network, learn and see the latest metal fabrication products and technologies. This annual event anticipates 30,000 visitors and over 1,200 exhibiting companies covering more than 410,000 net square feet of floor space.

Visitors will see thousands of pieces of equipment in action on the show floor and more than 500 new product debuts. In addition to the exhibits, FABTECH 2011 will also present more than 100 educational sessions on the latest trends in cutting, finishing, forming and fabricating, stamping, tube and pipe, and welding, as well as courses for managers. The complete lineup can be viewed at fabtechexpo.com/schedule-at-a-glance.cfm.

Other featured events include a keynote on Growing Your Business Through Innovation, a State of the Industry panel discussion and highly antici-



ated sessions on reshoring and how to strengthen U.S. manufacturing and create jobs. A new Buyer Appreciation Day has also been added this year and will allow attendees to take advantage of exhibitor show specials and win prizes.

FABTECH gives you all the tools you need to improve productivity, increase profits and find new ways to survive in today's competitive business environment, making it the ONE trade show to meet all your needs.

Location

McCormick Place North & South Halls
2301 S. Lake Shore Drive
Chicago, Illinois 60616
Telefon: 312-791-7000
www.mccormickplace.com
Show Days/Dates
Monday, November 14, 10:00 am – 6:00 pm
Tuesday, November 15, 9:00 am – 5:00 pm
Wednesday, November 16, 9:00 am – 5:00 pm
Thursday, November 17, 9:00 am – 3:00 pm

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NEW PosiTectors



The new PosiTector DPM Dew Point Meter measures and records climatic conditions including: relative humidity, air temperature, surface temperature, dew point temperature and the difference between surface and dew point temperatures. Available with either a Built-in or Magnetic Separate probe and 2 models to choose from – Standard and Advanced. All models include memory, Auto Log, statistics, USB port and Smart Trend indicators to help you identify rising, falling or stable readings. Download and transfer options include USB, Bluetooth and PosiTector.net cloud-based memory storage. No software is required.

Advanced models include hi-contrast color LCD, increased memory, longer lasting Auto Log to record environmental conditions for up to 8 months and the ability to show wet bulb temperature. Other features include on-screen help, real time graphing, picture prompting and batch notes.

The new universal gage body accepts all PosiTector 6000, DPM and SPG probes easily converting from a dew point meter to a coating thickness gage or surface profile gage.

The new PosiTector SPG Surface Profile Gage measures and records peak to valley surface profile height in accordance with ASTM D4417-B and others. Available with either Standard or Advanced features, the PosiTector SPG has a fast measurement rate of over 50 readings per minute - ideal for quickly and accurately measuring surface profile over large surface areas.

All models include a durable tungsten carbide probe tip for long life and continuous accuracy. Field replaceable probe tips are available with either 60 or 30 degree tip angles to conform to a variety of international standards. Download and transfer options include USB, Bluetooth and PosiTector.net cloud-based memory storage. No software is required.

Advanced models include hi-contrast color LCD, increased memory and SmartBatch allowing the entry of user-defined parameters and criteria to comply with various standards and test methods. Other features include on screen help, real time graphing, picture prompting and batch notes.

The new PosiTector body universally accepts all PosiTector SPG, 6000 and DPM probes easily converting from a surface profile gage to a

coating thickness gage or dew point meter.
www.defelsko.com

TriPass from MacDermid

MacDermid introduces their latest innovation in high performance trivalent passivates. TriPass ELV 2500LT is a high corrosion performance passivate based upon trivalent chromium for use with electroplated zinc deposits.

TriPass ELV 2500LT produces an iridescent passivate film of high visual appeal onto electroplated zinc deposits from acid and alkaline electrolytes. It is easy to operate, control, and waste water treat. It has high tolerance to metallic contamination, and achieves a long solution life. It is highly suited for both rack and barrel applications. TriPass ELV 2500LT offers an economical approach to improved performance while retaining its color. When used with an approved topcoat, the passivate will produce a silver-like finish. It maintains excellent corrosion resistance even after baking.

Features and Benefits include:

- Solution free of hexavalent chrome
- Iridescent color passivate
- Economical to operate
- Meets "End of Life Vehicle" directive
- Good corrosion resistance
- IMDS ID Number 900924

rmancinone@macdermid.com

AkzoNobel Powder Coatings unveils the most comprehensive Ready to Ship (RTS) offering on the market

AkzoNobel Powder Coatings has launched a new and improved ready to ship (RTS) offering to the North American Market.

RTS (Ready To Ship) Gen III, the next generation of the widely respected RTS range, draws on the expertise from across AkzoNobel Powder Coatings to offer an exciting and wide reaching assortment of powder coatings.

Developed from over 50 years of field experience and product refinement, RTS Gen III offers more than 300 Interpon products, technologies, chemistries and patented formulations. An enormous array of colors, appearances and industry specified products are available with

the range, including an attractive assortment of metallic and textured effects.

Designed for customer convenience, the RTS Gen III product range offers consistency and excellent quality. Jim Clark, Market Segment Manager General Trade Coaters North America explained, "The new RTS Gen III stock program is our biggest and best offering yet. A lot of work has gone into researching customers' needs and expectations, and this range offers a vast selection of coating options that offers the very best in powder coating technology."

Continues Clark "As a global leader in powder coatings technology, our dedication to constant sustainable innovation and color expertise means that this new range is not only technically and aesthetically superb, but also that the products are formulated to work on multiple types of systems, thus offering the flexibility and adaptability that we know our customers need."

The RTS Gen III range benefits from the wealth of experience associated with a global company, but is delivered with all of the advantages of a strong local service offering created with the customer in mind.

www.akzonobel.com

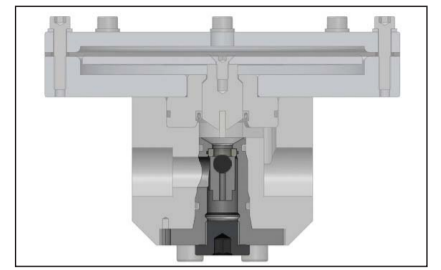
Kremlin Rexson Thor Dispense Equipment Product Line

EXEL North America would like to announce the release of the New Thor Dispense Equip-



ment Product Line!

The Thor Dispense Equipment Product Line consists of Thor supply packages and system accessories. This equipment is used to dispense single component sealant, adhesives, and other viscous materials from pails and drums to dispensing systems.



The New THOR Dispense Equipment is a fixed product group with various options which allows you to simply choose what equipment you need for basic manual applications with accessories supplied in kits.

The following is a list of the key markets for the New Thor Start Range:

1. Automotive
2. Agricultural
3. Recreational Vehicles
4. Solar Energy
5. Trains/Railway
6. Appliance/Household goods
7. Marine
8. Building & Earth Moving Equipment

www.kremlinrexsonames.com

Sansin Introduces 'Ready-To-Use' Foundation Wood Primer

The Sansin Corporation of Strathroy, ON has announced a ready-to-use formulation of Foundation, a water-borne primer for both interior and exterior wood surfaces.

Architects and homeowners often decide against light or natural tones for an exterior wood finish since they traditionally do not provide as much protection against UV rays as darker finishes.

Sansin Foundation, which applies invisibly, creates UV protection deep within the wood, allowing for the lightest of finishes to bring out the natural beauty and distinctiveness of wood while maintaining clarity.

Sansin Foundation is a low VOC base coat that applies easily and evenly, and protects the wood for up to one year, simply needing only a wash with soap and water before finishing. Sansin Foundation can be used on the most popular wood species including fir, pine, spruce and cedar.

www.sansin.com.



New

Advanced model shown

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- Browse gage readings and charts using your computer's file explorer or synchronizing with PosiTector.net
- SmartBatch™ allows entry of user-defined parameters and criteria to comply with various standards and test methods
- **New!** PosiTector body universally accepts all PosiTector SPG, 6000 and DPM probes easily converting from a surface profile gage to a coating thickness gage or dew point meter

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