

# Beckers Magazine



# Welcome to Beckers Magazine 2014

On target – Our business developed well in 2013 and has continued to do so in 2014, exceeding expectations in most parts of Europe, the Middle East and South Asia.

**Overall**, our businesses are well on track to attain their long-term strategic goals, with continued focus on our European markets and attractive development regions. While optimism predominates in the industry, the volatility of the markets is always on our minds. This makes business agility more important than ever if we are to realize our vision of becoming the industry leader in our strategically-chosen segments and regions.

Staying ahead of the competition also means providing superior and consistent quality, supporting our customers with innovative ideas and presenting highly customized solutions, wherever we are in the world. Where our Belarusian customer Belaz is concerned, which is one of the world's largest manufacturers of specialist vehicles for the global mining industry, this means being able to offer products capable of withstanding the toughest environments, from the extremes of a Siberian winter to the baking heat of an Australian summer. Our high performance, zinc-free Beckry®Prim alkyd primer and Beckry®Lac alkyd finishes, supplied from our factory in Sweden, help Belaz meet these severe challenges and stay successful in the ACE market.

**Sustainable business** Continuing our journey towards more sustainable systems remains a top priority for 2014 and beyond. Our R&D power houses are operating flat out and spare no effort in creating ingenious solutions that balance economic considerations with environmental and social concerns. Such success attracts critical acclaim and official awards too! Beckry®Therm, our solar and thermal control technology, won the British Coatings Federation's Sustainable Innovation Award last year. In 2013 we also published our first Sustainability Report, introducing a company-wide sustainability reporting standard. The feedback we received caused

considerable excitement. Since then, we have taken our work a step further and established a group-wide Sustainability Committee, to actively assist with projects such as the launch of our second report this year. We plan to develop this further over the coming years, in line with our vision of becoming the world's foremost producer of sustainable coatings.

**Future success factors** Having opened sites in Nigeria and Bangladesh in the past two years, we are now adding further to our production footprint by establishing presences in Turkey and Indonesia. We believe this expanded network will give us a competitive edge and create added value for our customers. We cannot predict the future – but we can ensure we are well prepared for tomorrow's challenges as we strive to see 'beyond the surface'.

I hope you enjoy this issue!



Dr. Boris Gorella  
CEO Beckers Group





## Frontpage:

The BELAZ 75710 is the world's largest and heaviest dump truck. It is 20.6 metres long, 8.16 metres high, and 9.87 metres wide and can carry 450 tonnes.

(Photograph front page courtesy of Belarusian Autoworks, Belaz. Used with permission)



### Beckers in Russia

A steady growth path for over three decades.



**Increasingly sustainable coatings for precoated metal**  
It's all about the future.



### Dr. Karsten Eller

Intense research is ongoing.



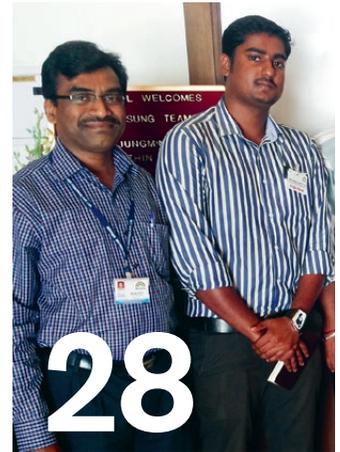
### Low PMT coatings

Multiple benefits for coil coaters.



### In-Mould Coatings inject new ideas

Shorter cycle times and lower manufacturing costs.



### Indian appliance industry offers huge potential

Domestically produced PCM sheets reduce imports.



### Beckers Ecochrome®

A high-quality finishing system.



### From reactive to proactive

Beckers USA awarded ISO 9001.



### Beckers wins Sustainable Innovation Award

A prestigious distinction for Beckry®Therm.

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# Beckers in Russia

Beckers' business relations with Russia go way back. First contact was made as early as 1908, when Beckers received approval from the Russian Ministry of Finance to supply samples of wood polish for a royal furniture exhibition in St Petersburg.

Anneli ERIKSSON



## **Commended certificate from the Ministry of Finance**

*The 1908 International exhibition of the industry of applied arts of furniture, ornamental works and interior decorations in St. Petersburg under the high patronage of Her Majesty the Empress Maria Fjodorovna (Theodorovna) bestowed upon the Company W. Beckers, Stockholm for samples of wood polish.*

## From polish to coil coatings

Given the relatively recent development of the technology, it will come as no surprise that many decades were to pass before Beckers received its first order to supply coil coatings to a major industrial customer in Russia, in the form of Norilsk Nickel. This company started its coil coating line in 1982, with paint supplied from Beckers' facility in Märsta, Sweden. In light of the aggressive nature of the outdoor environment at the Norilsk plant, Beckry®Fluor was the natural choice. It proved a good decision and Norilsk has been coating its products with Beckry®Fluor ever since.

During the latter part of the 1990s, Beckers started to supply Russian electro-engineering group Electroschild in Samara, as well as NLMK (Novolipetsk Steel), one of the country's largest steel companies. When another Russian steel giant, MMK (Magnitogorsk Iron & Steel Works), opened its first coil coating line in 2004, Beckers became a supplier in the same year. We have supplied steel major Severstal since the commissioning of its first coil coating line in 2005.

At the close of the 1970s, Russia's total pre-coated steel production capacity was some 140 000 tons. Today's total capacity is close to 1 500 000 tons, although not yet fully utilized.

Beckers opened its first Moscow office in 2002 with just two members of staff. Today, the Moscow office features functions for technical support, logistics, administration, sales and marketing. All paint intended for the Russian market is produced at Beckers' Märsta plant in Sweden, which also boasts substantial R&D resources.

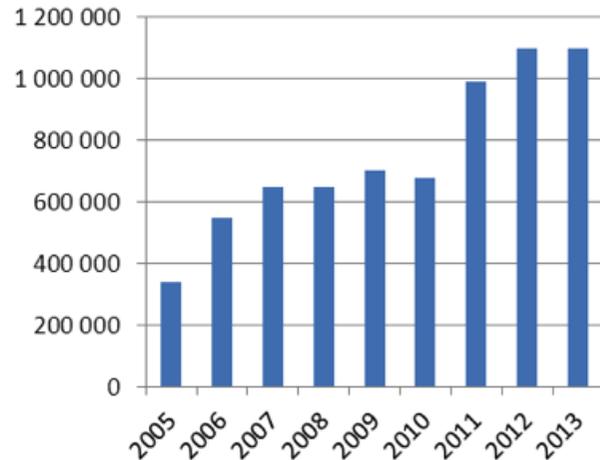
## Russia's coil-coated-steel suppliers

Russia's three major coil coaters – Severstal, MMK and NLMK – represent more than 80% of the production.

**Severstal** is Becker's biggest customer in Russia and one of the largest coil customers globally. The Cherepovets steelworks were founded in 1955, being transformed into the joint-stock company Severstal in 1993. Severstal opened its first coil coating line in 2005 and its second in 2011. Beckers supplied the paint and technical assistance for the start-up of line two. Cherepovets, located to the north of Moscow, is about a one-hour flight (375 km) from the capital. Flights from Vnukovo Airport in Moscow are operated by Severstal's own airline, Severstal Air. ►

VOLUME DEVELOPMENT SINCE 2005:

### Prod of coil coated steel in Russia/CIS



*CIS: Commonwealth of Independent States; consisting of nine former Soviet Republics.*

“Today, the Moscow office features functions for technical support, logistics, administration, sales and marketing”



Start-up of Severstal's second line. Lage Holmberg and Yury Titovets from Beckers, with a Severstal supervisor.

**MMK** (Magnitogorsk Iron & Steel Works) operates two coil coating lines in Magnitogorsk, which lies 1 400 km to the east of Moscow, on the eastern side of the Ural Mountains. The existence of iron deposits in this area was known as early as the 18<sup>th</sup> century and the city was initially established in 1743 as 'the Magnetic Fortress'. The name Magnitogorsk comes from 'the Magnitnaya Mountain', which was almost pure iron. It is easy to understand why the MMK ironworks was established here in the early 1930s. The first coil coating line was opened in 2004, followed by a second in 2009. Beckers is established as a supplier of polyester topcoats. The company also supplies special paint systems, such as Beckery<sup>®</sup>Tex. In recent years, MMK has also established two coil lines in Turkey.

“Beckers received its first order to supply coil coatings to a major customer in Russia, in the form of Norilsk Nickel”

**Norilsk Nickel** is the second most eastern and by far the most northern coil coating line in Russia. In fact, Norilsk – located some 300 km north of the Arctic Circle – is the most northern city in the world, with more than 100 000 inhabitants. There are neither roads nor railways to take you to Norilsk; you must fly or travel by boat to reach the city. Beckers has supplied Norilsk Nickel with Beckery<sup>®</sup>Fluor since 1982 and continues to be the sole paint supplier for coil coatings. Paint supplies sufficient to meet the plant's annual consumption of coil coatings are shipped once a year from the Märsta production unit. There are limits to when deliveries can be made, due to seasonal flooding of the Yenisey River, when the water rises so high that the port has to be closed.

**NLMK** (Novolipetsk Steel), the biggest coil coater in Russia, operates three coil coating lines in Lipetsk, 500 km to the southeast of Moscow. The Lipetsk area has a long tradition of mining its iron ore deposits: Peter the Great ordered the construction of an iron foundry in the area as early as 1702. The current NLMK ironworks was originally established in the early 1930s. The first coil coating line was constructed about 1990, the second in 2004 and the third being commissioned in 2010. NLMK also operates a coating line in Strasbourg.



Technical seminar at NLMK 2013.

## Interest in expanding product portfolio

The main product lines in Russia today are major users of Beckry®Pol, Beckry®Prim and Beckry®Coat. The Russian market is, however, opening up to the use of a broader product portfolio. There is keen interest in textured topcoats, leading to orders for Beckry®Tex and Beckry®Duro. Beckry®Fluor has long been supplied to a limited number of customers in Russia, but we are now experiencing increased demand for this top quality product.

Imports of pre-coated steel into Russia are extensive. In 2013, total usage exceeded domestic production by approximately 30%. These imports come from Europe as well Asia.



*Denis Savelyev, Beckers Moscow, at Norilsk Nickel's coating line.*

## A bright future

After more than thirty years of doing business in Russia, Beckers has established a leading position in its niche sector. We are in this exciting market for the long term, determined to play a key role in its development and growth.

At present, Beckers is represented in Russia on the coil coatings market alone. However, the potential for Special Coatings (ACE and Automotive) is considerable. Looking ahead, we expect to see the Beckers brand make inroads in these segments too! ■



*Beckers team together with Norilsk Nickel's technical team, 2014.*

“Beckers’  
business  
relations with  
Russia go way  
back”

# Increasingly sustainable coatings for precoated metal

Chris LOWE



*Biopolymers can be sourced from waste products.*

**What is sustainability?** A dictionary definition of sustain is “to endure”. The same dictionary defines sustainable as “that which conserves an ecological balance by avoiding depletion of natural resources”. But there are more definitions, such as:

*“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”<sup>1</sup>*

*“To be sustainable a company must first make a profit, it must look after its people and it must look after the planet.”<sup>2</sup>*

*“Sustainability involves not mining unnecessarily, not producing CO<sub>2</sub>, not polluting and looking after the population.”<sup>3</sup>*

All three versions have similar themes, although their emphasis varies. Clearly, the second definition reflects commercial priorities: if a company is to have long-term impact, it must obviously stay in business!

**So how can** the coatings industry ensure a more sustainable future? It can start by looking at itself, making a determined effort to reduce energy usage in both the manufacture and transportation of its products. Waste, VOCs and carbon dioxide production can also all be reduced to minimum levels<sup>4</sup>. Paint companies should consider how their products might be sourced more sustainably, reducing reliance on petroleum derivatives by focusing on materials derived from plants (preferably in the form of waste from other processes). Some pigments are derived entirely from waste materials. Titanium dioxide is the most extensively used pigment and, although not always derived from waste materials, titanium dioxide manufacturers are making their processes ever more sustainable.

Coatings can further contribute to sustainability by delivering more sophisticated levels of functionality, helping reduce the energy required to cool or heat buildings, maintain clean surfaces and even absorb the noxious gases emitted by cars, trucks and power plants<sup>5</sup>.

Used extensively in the construction industry, the popularity of pre-coated metal is easily explained. A factory product subject to stringent quality control, it offers consistent performance. It also speeds the erection of building envelopes, is light yet durable and – perhaps best of all – is cost efficient. Furthermore, the base substrate can be easily recycled (both steel and aluminium). But is enough being done to ensure that the paints themselves are more sustainable?

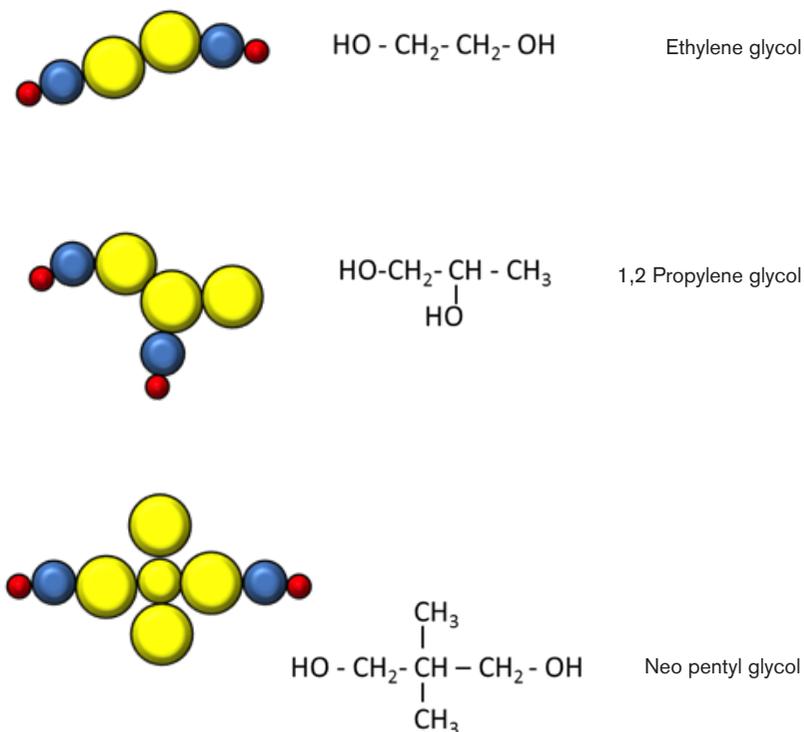
## Availability of bio-sourced raw materials

There is a range of petroleum derived glycols (diols) and diacids that can be reacted together to make the relatively low molecular weight polyesters used for pre-coated metal. Ethylene glycol is a reasonably common glycol, so too its near neighbour 1,2 propylene glycol. One of the most prevalent glycols is neo pentyl glycol (NPG), a molecule with two methyl groups attached to the central carbon atom (*Figure 1*).

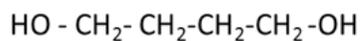
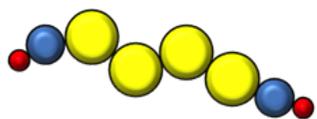
Other glycols that can be used to improve the formability of the final polyester resin are 1,6 hexane diol, 1,4 butane diol and methyl propane diol (*Figure 2*). Resin producers commonly mix two or even more glycols to obtain the right properties. Trifunctional glycols such as tri-methylol propane are used to introduce branching and increased hardness.

One or more of the three phthalic acids are commonly found in polyesters for pre-coated metal, the determining factors being cost and durability. Ortho-phthalic acid (*Figure 3*) is a cost effective aromatic diacid whereas iso-phthalic acid is more expensive but bestows greater durability on the ultimate coating. Terephthalic acid is hard to react in but is used when linear molecules are preferred. The most popular aliphatic acids are adipic and azelic acids although the cycloaliphatic hexa-hydro phthalic anhydride (*Figure 4*) can be found in some more durable resins. ►

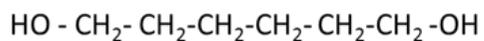
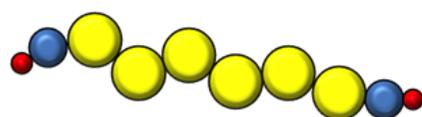
**Figure 1** Various Glycols



**Figure 2** Butane diol and Hexane diol

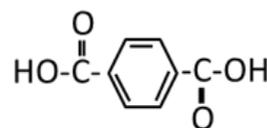
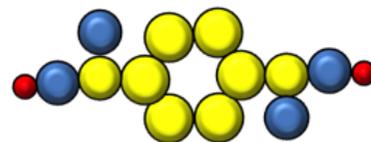


1,4 Butane diol

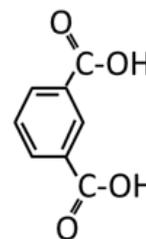
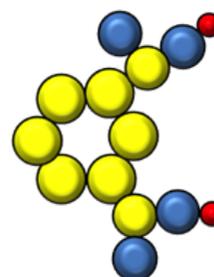


1,6 Hexane diol

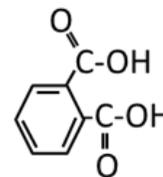
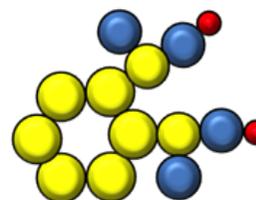
**Figure 3** Various Common Diacids



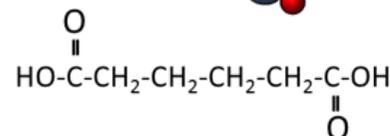
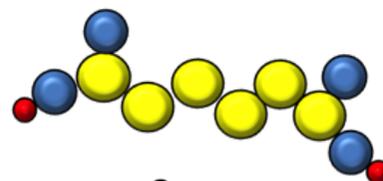
Terephthalic Acid



Isophthalic Acid



Orthophthalic Acid



Adipic Acid

**Epoxy resins** have become the first modern materials to be derived from a sustainable source<sup>6</sup>. Acrylic acid could also be made from glycerol, which is formed when fatty acids are released from fats and oils made by animals and plants. Due to cell toxicity, however, acrylic acid cannot be produced as a direct bio-product<sup>7</sup>. Another chemical that is made from glycerol is 1,3 propan-diol<sup>8</sup>, which can be used in the preparation of polyester resins. An aliphatic acid counterpart to the glycol is succinic acid, which e-coli and other bugs metabolise. There is a pilot plant in Northern France run by Bio Amber<sup>9</sup> which has been set up to produce 2000T per year of succinic acid by a fermentation process that uses sugars as the raw material. Their aim is to produce succinic acid at no greater cost than that currently achieved. 1,4 Butane diol can be made from succinic acid and is thus another raw material that can be bio-sourced.

The adipic acid previously mentioned is prevalent in the field of polyesters. Its manufacture from natural raw materials is not simple though, as it does not appear in nature. One suggested route involves castor oil as a raw material, although recently a more elegant synthetic route has been proposed. Other materials that have been available for some time include furfural, citric acid and lactic acid.

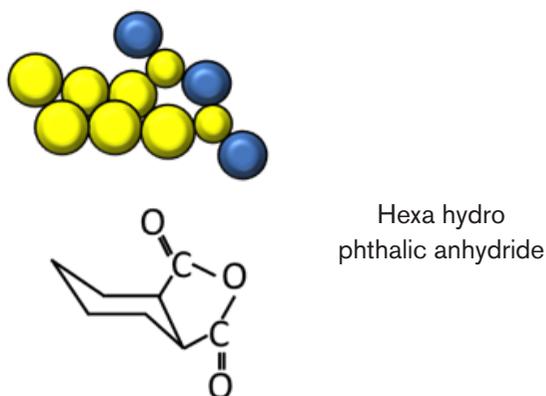
Until recently, the synthesis of phthalic acids from bio-sourced raw materials was a long way off on the horizon. However, the cola companies have been pushing hard for a bio-sourced terephthalate to complement the bio-sourced ethylene glycol that has been used in their partially bio-sourced PET over the past few years. Several companies have proposed routes to bio-sourced phthalic acids, including fermentation, aqueous phase reforming and catalytic fast pyrolysis. The last two pathways produce a mixture of xylenes which are the precursors of the phthalic acids.

Consequently, it has become possible to source di-acids and diols from plants, which means that bio-sourced polyester resins are now available. Although still rarely 100% bio-sourced, especially if they need the presence of a phthalate to achieve the required Tg, the future is bright even for these monomers.

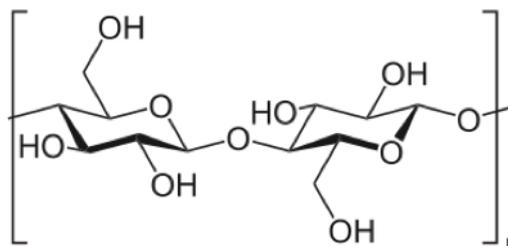
## Feed stocks now and in future

Sugar has long been the bio-feed stock of choice, but there is growing recognition that bio-sourced polymers should, as far as possible, be derived from the waste products of other processes. Straw and saw dust are two examples that immediately spring to mind. The main components of wood are cellulose and lignin. In fact, cellulose is the most common biopolymer, followed by hemicellulose and then lignin. Cellulose itself is a polysaccharide, which means it is made up of many sugar molecules (*Figure 5*). Many companies are now trying to use cellulose as an alternative bio-feed stock to sugar and the range of chemicals mentioned above. ▶

**Figure 4** Hexa hydro phthalic anhydride



**Figure 5** Cellulose



## Bio-sourced crosslinkers

It is all very well using bio-sourced polyesters as the main film-forming resin, but what about the crosslinkers used to ensure the best possible performance? The main crosslinkers used in polyester coil coatings are hexa methoxy methyl melamines. The normal industrial synthesis of these materials uses urea in an endothermic reaction and results in ammonia and carbon dioxide as bi-products. Urea is itself made from ammonia and carbon dioxide and ammonia is one of the gases manufactured on a large scale from atmospheric nitrogen and the hydrogen derived from methane gas. Although urea and other nitrogen-rich products are present in waste streams from human activity and animal husbandry, there are so far no reports about how these resources can be accessed at competitive prices. It therefore seems likely that melamine will be sourced on natural gas and mineral oil for the foreseeable future.

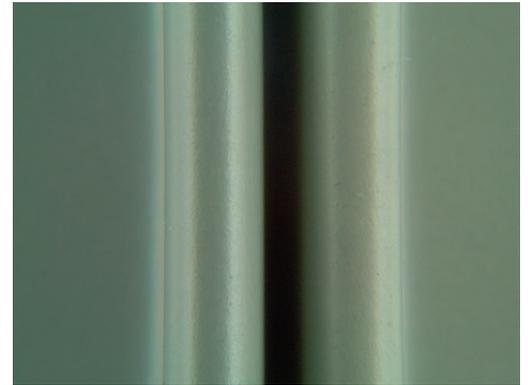
Isocyanate crosslinkers are made from di-amines. Here again, it is difficult to see these molecules being sourced from plants in the near future.

## Costs

Although the stated aims of many of the companies involved in the manufacture of bio-sourced raw materials is to produce price-competitive alternatives to petroleum-based equivalents, synthesizing such materials will inevitably require some radical thinking and perhaps unforeseen challenges. Such materials will not immediately be available in the sort of volumes associated with the commodity chemicals currently used and will therefore be more expensive. To the frustration of the suppliers of bio-based chemicals, sustainability WILL cost. At least it won't cost the earth!

## What is currently available?

Beckers is in the process of introducing a range of coatings based on bio-sourced



**Figure 6:**  
2.5T Bend on Backing Coats Bio Based RHS.

polyesters which should eventually cover the entire spectrum of mechanical and durable properties. Understandably, we have started with systems that are subject to less stringent demands, intending to gradually expand the range to include more durable or formable coatings.

Last year, a collection of 'interior quality' products was introduced, including a liner, a primer and a backer. The systems are melamine cross-linked polyesters based on a resin with a 100% bio-content. The mechanical performances of the cured coatings applied to chromate-free pre-treated HDG are shown in *Table 1*. A photograph of the backing coats' T-Bend performance is shown in *Figure 6*.

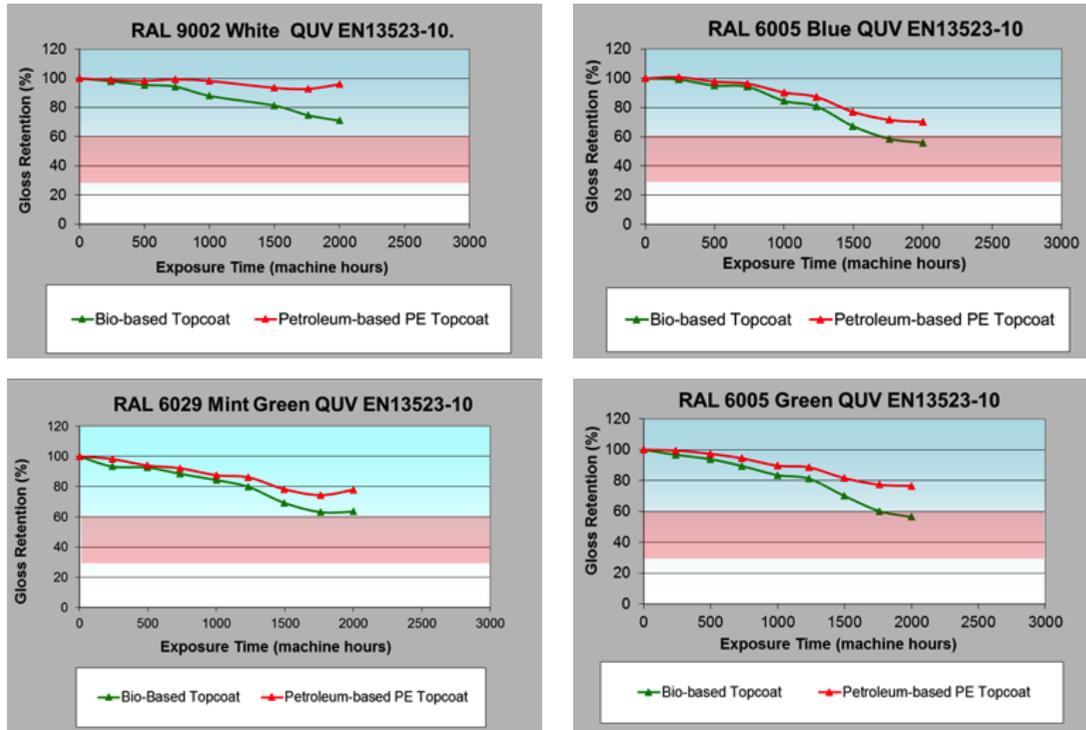
Early this year, an 'exterior quality' topcoat and suitable primer were offered to the market. The resin used was not completely bio-based because aromatic acids were necessary to achieve hardness and outdoor durability performance. The result was a topcoat that has a bio-content of more than 25%, based on the dried film. Based on gloss-and-colour-retention changes caused by the effects of weathering on a range of colours exposed for 2 000 hours in UV-A cabinets, it is clear that the coatings can be classified as R<sub>UV2</sub> quality (>30% gloss retention). Changes in gloss retention, with exposure time, are presented in *Figure 7* for red and blue paints. The mechanical properties of five colours are presented in *Table 2*.

There is a growing demand for products that can be classified as more sustainable.

Bio-derived coatings can be considered as such and Beckers is committed to increasing both the bio content and overall paint performance over the coming years, to ensure that they will be considered for point scoring under

the BREEAM scheme. Caravan designers and Domestic Appliance OEMs are also asking for products that help them achieve greater levels of sustainability and we are, as always, willing to help. ▶

**Figure 7** Percentage Gloss Retention for Biobased R<sub>UV2</sub> Class Polyester melamine coatings.



**Table 1:** Mechanical Performance of Bio Based Backer compared to Standard.

Test	Standard	Std Backer	Bio Backer
Total Dry Film thickness	EN13523-1	12 microns	8 microns
Gloss (60° head)	EN13523-2	34%	41%
Pencil Hardness	EN13523-4	H min	F-H min
Reverse Impact 9 Joule	EN13523-5	No crack / No removal	No crack / No removal
Cupping Test (7 mm Draw)	EN13523-6	No crack / No removal	No crack / No removal
T-Bend (No Cracking)	EN13523-7	2.5T No cracking	2.5T No cracking
T-Bend (No Removal)	EN10169-2.6.1.5	1.5T No removal	2.0T No removal
Solvent Resistance	EN13523-11	100+ MEK rubs	100+ MEK rubs

**Table 2:** Physico-mechanical Tests on Bio-Based R<sub>UV</sub>2 Topcoats.

Category	Top Coat	Colour	T-Bend Adhesion	T-Bend Flexibility	Erichsen Slow Draw	Reverse Impact	MEK Rubs	Pencil Hardness	Coin Hardness
			(EN 13524-7)	(EN 13523-6)	(EN 13523-5)	(EN 13523-11)	(EN 13523-4)	In house test	
Standard PE	LTD12-02-003	White	T1.5	T1.5	NTPO	NTPO	100+	H	STD
Bio-based PE	LTD10-04-14	White	T0.5	T1.0	NTPO	NTPO	100+	H	Softer
Standard PE	LTD12-02-021	Brown	T0.5	T1.5	NTPO	NTPO	100+	H	STD
Bio-based PE	LTD10-04-05	Brown	T0	T1.0	NTPO	NTPO	100+	H	Softer
Standard PE	80656-030	Red	T1.0	T1.5	NTPO	NTPO	100+	H	STD
Bio-based PE	LTD10-04-09	Red	T0.5	T1.0	NTPO	NTPO	100+	H	Softer
Standard PE	80656-031	Blue	T0.5	T1.5	NTPO	NTPO	100+	H	STD
Bio-based PE	LTD10-04-06	Blue	T0	T1.0	NTPO	NTPO	100+	H	Softer
Standard PE	80656-032	Dark Green	T1.0	T1.5	NTPO	NTPO	100+	H	STD
Bio-based PE	LTD10-04-07	Dark Green	T0	T1.0	NTPO	NTPO	100+	H	Softer
Standard PE	80656-033	Light Green	T1.0	T1.5	NTPO	NTPO	100+	H	STD
Bio-based PE	LTD10-04-08	Light Green	T0	T0.5	NTPO	NTPO	100+	H	Softer

## References

- 1 World Commission on Environment and Development (WCED), Our common future; Oxford (also known as the Brundtland Report): Oxford University Press, 1987 p. 43.
- 2 ECCA definition.
- 3 The Natural Step.
- 4 2012 Sustainability report of Becker Group.
- 5 Functional Coatings.
- 6 Krafft P, Gilbeau P, Gosselin B and Claessens S, Process for producing epoxy resins. EP 1 775 278 A1 (2007).
- 7 Davies M.K. and Lensbouer J., RadTech Report, 23, Issue 1 2014.
- 8 Dupont Tata and Lyle Bio Products Company Inc, www.duponttateandlyle.com
- 9 BioAmber Inc. www.bio-amber.com

# Dear Readers!

In this latest edition of Beckers Magazine, we continue to address the topic of sustainability. As well as having just published its second Sustainability Report and announced some of its Corporate Social Responsibility initiatives, Beckers has received the Sustainable Innovation Award from the British Coatings Federation for its Beckry®Therm solar and thermal control technology. But this is far from the only example where our research is promoting the development of more sustainable products.

**Bio-based coil coatings** are the subject of intense research and we are proud to present new products that are partially or wholly-based on bio-based resins and/or solvents. Energy savings continue to be a priority and we have launched a new class of Low PMT coatings which enables curing ovens on coil coating lines to be operated at temperatures some 40–50 °C lower than before. This technology has a dramatic impact on a coating line's overall energy consumption, offering total energy savings of some 30%.

In addition to articles on coil coatings, this issue also features coatings for agricultural, construction and earthmoving equipment, as well as for domestic appliances. I hope you will enjoy this overview of Beckers' activities.

On a personal note, we have recently experienced a major change in personnel terms, with the retirement of Bengt Ingman. Among his many other roles within the company, he has done a fantastic job in editing the past two editions of Beckers Magazine. After some 40 years in coil coatings, he is a walking encyclopaedia on

the topic. He has witnessed Beckers' activities in the coil segment expand from 3 000 tons in 1975 to today's 20 000 tons in Sweden alone, and over 100 000 tons worldwide.

Over the decades, Bengt has held many positions in Beckers. Starting as a Laboratory Manager in 1975, he moved on to become Technical Manager, General Manager, Export Manager, Technical Coordinator and finally Technical Director. In his various roles he has been all over the world, providing support to our customers. He has also held numerous positions in ECCA, CEPE and other associations, so many of you may well have had a chance to meet him personally. I have only known Bengt for three years, but quickly learned to appreciate his vast store of knowledge. He will be sorely missed: it will be very difficult to replace him!

Your COO,  
Dr. Karsten Eller



# Low PMT coatings – a step towards sustainability

*Kong Chin CHEW*

When asked to name their most wished-for technical improvement in coil coatings, both the coil coating community and Beckers' own technical staff often respond “a lower paint curing temperature” – commonly referred to as PMT (Peak Metal Temperature). This is hardly surprising, given the fact that a reduction in PMT is normally equated with less energy being needed to heat the curing ovens, resulting in lower energy costs for coil coaters.



*Staff from Beckers Shanghai, Beckers' Long Term Development Lab Asia and Huadong Steel at a line trial of the low PMT system.*

## **Benefits of a low PMT system**

Apart from possible energy savings due to its fast curing nature, a low PMT system can also be cured at standard PMT but at higher line speeds. This increases productivity on lines that are capable of going faster than current speeds but have been limited by low oven efficiencies. A low PMT system also offers additional benefits, such as a less demanding strip quenching process, the extended service life of some coating line components (e.g. ovens, rollers and so on) and the possibility of using paints with pigments that are unstable at conventional curing temperatures.

Demand from coil coaters for increasingly sustainable products and processes is growing. The multiple benefits that a low PMT system offers will go a long way towards achieving greater sustainability.

## The Beckers low PMT polyester system

The system has been developed to be curable at significantly lower PMT than standard systems, which typically cure at 224–232 °C. Low PMT primers can be cured at 170–190 °C, while the topcoats and backcoats are curable at 180–200 °C. Apart from oven temperature settings, there is no requirement for line modification or any change in other line parameters.

Handling and application of the paints can be carried out in a similar way to conventional polyester paints. The only difference to be aware of is the faster increase in viscosity upon storage. This should come as no surprise, given its more reactive nature, but it is important to note that this does not result in poorer performance. A good inventory system should ensure that paints are not left in the warehouse for longer than necessary.

**Products mentioned in the article are marketed as:**  
 Beckry®Pol LC, Beckry®Prim LC and Beckry®Coat LC

	Standard System	Low PMT System
<b>Topcoat PMT, °C</b>	232	188
<b>Primer PMT, °C</b>	224	177
<b>Gloss (60°)</b>	90	92
<b>Pencil hardness (Faber Castell)</b>	H	H
<b>MEK double rubs</b>	> 500	> 500
<b>T-bend</b>	0T NTO, 0T NC	0T NTO, 0.5T NC
<b>Slow draw adhesion (6mm)</b>	NTO	NTO
<b>Boiling water (2 hours)</b>	NTO	NTO
<b>Reverse impact (10 Joule)</b>	NTO, NC	NTO, SC

**Table 1.** Comparison of properties between a standard and a low PMT polyester system in white colour.

*DFT: Topcoat 18µm, primer 5µm.  
 NTO = no tape off, NC = no crack, SC = slight crack.*

## Coating performance

**Table 1** compares the properties of a standard polyester system with a low PMT system. The PMT used for the new system is about 40–50 °C lower. In general, all properties are comparable between the two systems. Pencil hardness and MEK resistance are maintained, as well as adhesion after indentation and adhesion after immersion in boiling water for two hours. A slight reduction in flexibility is observable, with the T-bend showing no cracking at 0.5T, while on 10J reverse impact slight cracking is observed.

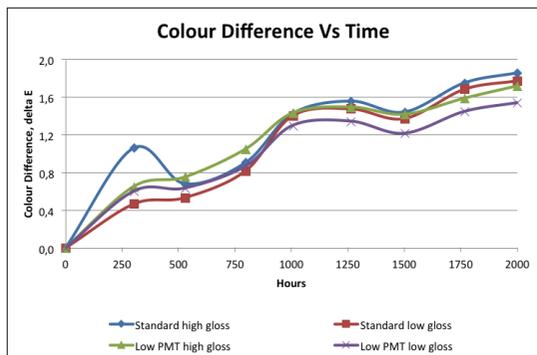
The low PMT system's corrosion resistance also appears to be comparable to that of the standard polyester system, as in **Table 2**, which shows the results after 750 hours' exposure in a salt spray chamber. No blisters are found on the flat or formed areas, while the creep at scribe, side edge and bottom edge are comparable to, or better, than with the standard polyester system. ▶



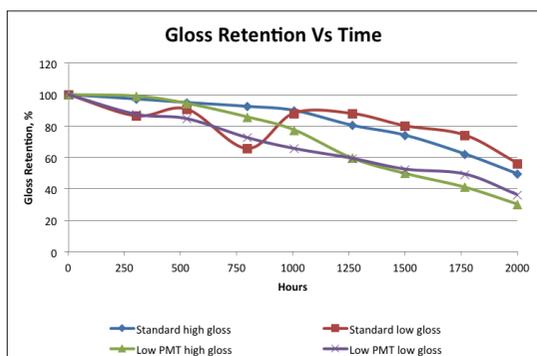
*Unexposed line panels from lab and line trials.*

**Table 2.** 750 Hours salt-spray test comparison (ASTM B117). Ratings for blisters and corrosion follow ASTM D714 and ASTM D1654 respectively.

Test duration	After 750 hours						
Evaluation area	Flat area	Formed area		Scribe	Side edge	Bottom edge	
	Blister				Corrosion		
Test sample	Frequency	Size	Frequency	Size	Mean Creepage	Mean Creepage	Mean Creepage
Standard System	No	10	No	10	6	5	7
Low PMT System	No	10	No	10	9	7	8



**Figure 1a.** Colour retention after 2000h QUV-A.



**Figure 1b.** Gloss retention after 2000h QUV-A.

**Humidity resistance** is also comparable to the standard system where, after a 1000 hour Cleveland condensation test, no blister or corrosion was observed on the panels.

The weathering results make interesting reading. After 2000 hours in the QUV-A chamber, the low PMT system shows good colour retention, comparable to the standard system. However, its gloss retention is noticeably poorer (see **Figure 1**). This is observed for both high and low gloss systems.

After 21 months of outdoor exposure in Kuala Lumpur (KL), a site with a tropical climate (hot and humid, plenty of sunshine) and a relatively high level of industrial pollution (i.e. high dirt pick-up), the performance between the two systems shows the reverse of the QUV-A observations. While colour retention remains comparable, gloss retention is now noticeably better with the low PMT system (see **Figure 2**).

The differences between the QUV-A and KL outdoor exposure results have also been observed with systems in blue, green and red colours to varying extents after 18 months. This serves as an important reminder that we should not be overly dependent on results from QUV-A tests.

The low PMT system has now undergone four customer line trials and all the results have shown high comparability with standard systems in terms of properties and performance. Outdoor weathering performance is being monitored and these panels are now being exposed at various sites including Florida, South Africa and Bohus Malmö.

## Energy savings

A recent trial employed ECCA's Continuous Coil Coating Modelling software to determine the potential energy savings offered by using a low PMT system (see **Figure 3**). The potential savings were calculated for a line featuring a solvent incinerator. The simulation indicated a reduction in energy consumption of about 28% when using the low PMT system, compared to the standard coating system.

Interestingly, a line trial of the low PMT system at a coil coating customer in China has also revealed energy savings of some 30%, matching well with the savings calculated using the ECCA software. These energy savings were obtained from a trial run lasting seven hours on a line with an incinerator, at a sustained operating temperature of 760 °C.

This result is of considerable significance, in light of the fact that it is commonly assumed in the industry that the potential energy savings would be minimal or non-existent on coating lines featuring an incinerator. It is hoped that future trials will shed still more light on the energy savings potential offered by a low PMT system.

## Sustainable development

The development of a low PMT system marks yet another important step in Beckers' commitment to innovation in coil coating products. It aligns nicely with the company's vision of sustainability, making a concrete contribution towards a more sustainable future for the industry and the environment as a whole. ■

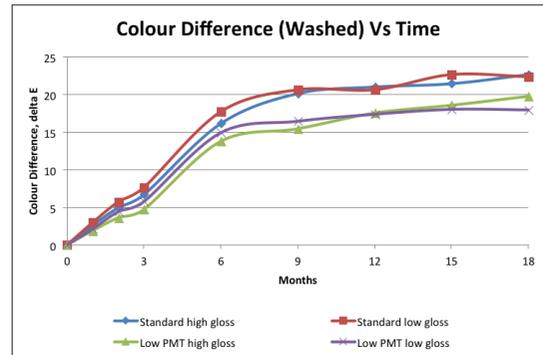
Paint System	Primer Oven PMT, °C	Topcoat Oven PMT, °C	Gas Usage per Annum, kwh	Energy Saving per Annum, kWh
Std. PMT System	224	232	17,608,228	4,861,078 (28%)
Low PMT System	177	188	12,747,150	

Substrate & Paint	Details
Line Speed	150 m/min
Substrate	HDG, Gauge: 0.5mm, Width: 1200mm
Top and Back Primer	Polyester primer, DFT: 5µm
Backcoat	Polyester backcoat, DFT: 5µm
Topcoat	Polyester topcoat, DFT: 15µm
Incinerator Temp.	720°C

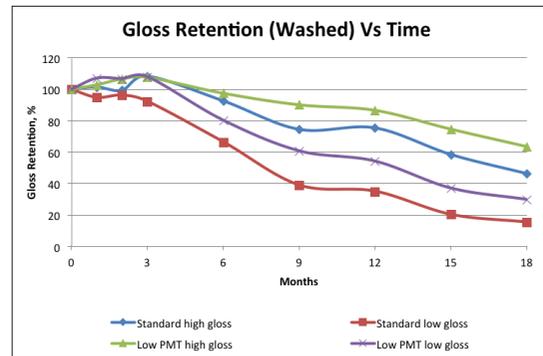
### Parameters and assumptions:

- Painted coil production: 160,000 ton/year
- Production hour: 3,850 hours
- 10 coils per batch with no scrap coils.
- Assumes no downtime during production run (eg. due to colour change, machine breakdown, etc)

**Figure 3.** Energy usage simulation using ECCA's Continuous Coil Coating Modelling software.



**Figure 2a.** Colour retention (washed) after 18 months in Kuala Lumpur.



**Figure 2b.** Gloss retention (washed) after 18 months in Kuala Lumpur.



Visual checking station.

# Successful premiere at CHEAA conference

Emily WU

**As a member** of CHEAA (China Household Electrical Appliance Association), Beckers' participation in last October's Technical Conference marked the company's first involvement in such an event in China.

The CHEAA, founded in 1988, has over 400 members, including well-known brands like Bosch/Siemens, Haier and Electrolux. It is the main national communication platform for the domestic appliance industry.

The CHEAA Technical Conference, an annual event that has been successfully organized since 2001, is attended mainly by senior technical specialists, academics and engineers from the appliance industry, focusing on the latest technology and innovations. Active exhibitors include major local appliance producers such as Haier and Midea, as well as international suppliers or partners such as Alstom and Henkel.

The Beckers stand provided a broad presentation of the company and product range, featuring a comprehensive selection of advertising materials, samples, posters and a continuous presentation loop on a monitor. The latest functional products – such as wrinkle coats, thermo-sensitive paints and mica-based colours – attracted particular attention from visitors. Beckers' sales, technical and marketing personnel were on hand to answer customers' enquiries.

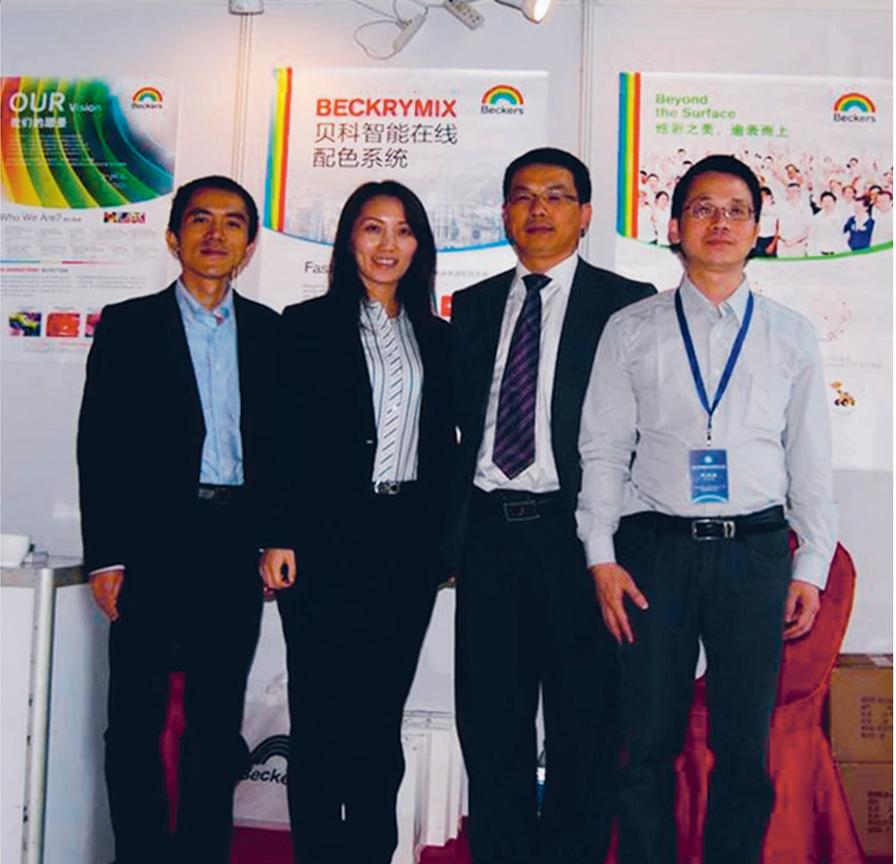
In light of the keen interest demonstrated by end-users, Beckers China is planning regular participation in this conference in future. As well as promoting and building the Beckers brand name in the Chinese appliance industry, it is hoped this will also generate key feedback from appliance producers concerning future trends and technologies, further strengthening the company's technical expertise. ■



Snapshots from the CHEAA Conference.



### 贝科工业涂料(上海)有限公司 Becker Industrial Coatings (Shanghai) Ltd.



# Mining-vehicle giant chooses better finish



One of the world's largest manufacturers of specialist vehicles for the global mining industry, producing an impressive third of the world's heavy dumper trucks, Belarusian Autoworks (BELAZ) was established in 1948 in Zhodino, near Minsk.

*Paul THOMAS*

**C**urrently in the midst of a five-year product development and modernisation program, the company plans to secure its reputation for having the most complete range of earthmoving and mining trucks in the world.

In September 2013, BELAZ established a new world record with its launch of a 450-tonne-capacity dump truck. The BELAZ 75710 offers a 25% greater payload than the largest capacity trucks currently in use today, thanks to a number of innovations such as twin-axle steering, it retains a similar footprint. This giant machine is powered by two 16-cylinder diesel engines, each generating 2 300 horsepower, giving the 75710 a top speed of 65 kph. The truck is now being field-tested at the Bachatsky open-pit coal mine in Siberia, recognised as having some of the harshest mining conditions in the world

BELAZ products are used in some of the toughest environments, featuring temperatures ranging from the -50 °C of a Siberian winter to the +50 °C of an Australian summer. The coatings used on these vehicles must not only withstand these extreme temperatures: they must offer excellent abrasion and corrosion resistance. From its Märsta plant in Sweden,

Beckers has supplied BELAZ with high performance, zinc-free Beckry®Prim alkyd primer and Beckry®Lac alkyd finishes in the company's trademark yellow, white and blue colours for several years now. As well as satisfying BELAZ' stringent field-performance requirements, these coatings are also formulated for exceptional user-friendliness in the painting process.

Historically, BELAZ' main customer base has been the Commonwealth of Independent States (CIS). More and more of its products are being sold outside the CIS. As part of its product development program, BELAZ is reviewing its painting processes and coating specifications, with a view to increasing the quality and durability of paint finishes on its vehicles. The company is now introducing Beckry®Prim two-pack epoxy primer and Beckry®Dur two-pack polyurethane into its painting processes.

These coatings have an established track record in the global ACE market, ensuring increased colour and gloss retention compared with the alkyd products BELAZ has used for many years. As an added benefit, the switch to two-component products will substantially reduce BELAZ' emissions of volatile organic compounds – by no less than 30%! ■



# In-Mould Coatings inject new ideas

Beckers' history of supplying Beckry<sup>®</sup>Mold In-Mould Coatings (IMCs) to moulders of plastic components dates way back, to its pioneering of these products in Europe.

*Paul THOMAS & Marc SALIG*

**IMCs are mainly** used as primers on moulded parts for the automotive, truck and ACE markets. We have now developed a new range of topcoats which can be applied in the moulding process, enabling parts to be moulded, primed and topcoated in a single process.

## SMC – benefits and challenges

Sheet Moulding Compound (SMC) is widely used for the production of plastic components. This comprises a mixture of unsaturated polyester resin, pigments, inert fillers and various additives supplied in the form of a sheet reinforced with glass fibre and, increasingly, carbon fibre. This compound is used in compression moulding at pressures of between 60 and 100 bar and is cured in the press at temperatures between 130°C and 160°C. It is a highly versatile material. Formulations can be adjusted to suit a diverse range of applications. Large and complex shapes can be produced with very short cycle times. The compression moulding process has a very low scrap rate, produces parts with a good surface finish and is highly automated, leading to low process costs.

SMC development has mainly been driven by the automotive and truck markets. Compared to steel, SMC offers designers much greater freedom and flexibility. More complex designs are easier to produce in a single process, leading to shorter process times and lower tooling costs (typically 40% lower than for steel stamping). In addition, SMC is 35% lighter than steel, does not corrode and has more resistance to minor dents. The third largest technique for the production of polymer composite parts, SMC is now used to produce a wide variety of non-structural parts for the truck, ACE and automotive industries. These include truck fronts, car boots and

bonnets, tractor hood sheets, cab roofs and so on.

SMC does have one major drawback, however. It is extremely difficult to achieve a class A surface (equivalent to unpainted steel). SMC mouldings can suffer from several cosmetic defects which require repair before painting. These defects can involve:

- porosity in the moulding, which can lead to bubbles being trapped in the paint finish,
- exposure of the reinforcing fibres or
- stress marks in complex mouldings.

To repair defects, the first step is to apply filler, which is allowed to dry and then sanded down. Primer is then applied by spraying and cured in an oven. This dramatically increases processing costs. Beckry® Mold IMCs achieve the same results in one-and-the-same moulding process.

## Save time and money

Beckry® Mold IMCs are similar in chemistry to SMC products. They are injected into the mould at high pressure after the SMC has been pressed into shape and partially cured. The coated moulding is then reheated to complete the cure of the SMC and the coating. Typically, Beckry® Mold is applied in film thicknesses of up to 200 microns.

As the chemistry is similar to that of the SMC substrate, Beckry® Mold coatings exhibit excellent adhesion and do not affect the excellent mechanical properties of the moulding. Coated mouldings have a Class A surface and can be topcoated with no further surface preparation.

Beckry® Mold is available in a range of colours and also as a conductive primer. Having a conductive surface



enables moulded plastic parts to be fitted to the metal car body and the entire assembly can then be painted using electrostatic equipment.

## In-mould topcoats

Until now, in-mould coating has been used only when applying a primer to moulded parts. Topcoats have then been applied on traditional spray lines, increasing overall process cycle time and costs.

Beckers has been working with several customers to develop topcoats that can be applied during the moulding process. This has resulted in the development of two radically innovative product lines.

Beckry® Mold 1000 is designed to be injected into the mould under high pressure, like a traditional in-mould primer. Compared with a standard primer, however, it features much improved flow and gloss while also exhibiting much greater UV resistance.

The second product, Beckry® Dur 1000, is a solvent-free, two-component polyurethane coating. Designed to be sprayed into the mould before the SMC sheet is pressed and cured, it exhibits superb gloss and UV resistance.

Both these innovative IMCs enable complete finishing of SMC mouldings with much shorter cycle times and lower manufacturing costs compared with a more traditional process. ■

# Indian appliance industry offers huge potential

Since the introduction of coil-coating technology in India in 1989, the domestic industry has enjoyed dramatic and exciting growth. In its 25th anniversary year, though still relatively young, the Indian coil-coating industry can proudly celebrate its track record of steady growth, consistent innovation and total commitment to customers' needs.

*Umesh VISHWAKARMA & Anuradha VERMA*

**S**ince entering the Indian market, Beckers has focused primarily on the roofing and cladding industry. The extremes of heat and humidity associated with the Indian climate pose numerous challenges, but these have been tackled and resolved in close cooperation with customers. Specially formulated to meet the demanding conditions of the Indian subcontinent, Beckers coil coatings have established an enviable reputation among roofing and cladding manufacturers throughout the region.

## Thinking ahead

Determined to build on this reputation, the Berger Becker\* team are now looking to serve other segments of the Indian market. To ensure that Beckers continues to deliver what customers want and to deliver innovations that will help expand their own market potential, we listen carefully to what they say. We have been canvassing the market for feedback, asking customers, end-users and suppliers to

tell us what they would like us to focus on in the coming years. The response has been convincingly unanimous: greater product differentiation and the further development of additional market segments.

## Key growth sector

Some two years ago, Berger Becker conducted a brainstorming session to determine which industrial sectors offered the greatest potential for the launch of innovative new coil coating products. Sectors considered included 'green' building construction, prefabricated buildings, the automotive sector and many more. The team also discussed the need to ensure a solid presence in all segments of each sector. Ultimately, one sector stood out in terms of growth potential, genuine thirst for creative design solutions and a willingness to resolve the challenges associated with installing the latest coating technology: the domestic appliance sector.

\*Berger Becker Coatings Pvt. Ltd is a joint venture between Beckers and Berger Paints (India) Ltd.

## An India of change

Fuelled by the growing disposable income of an Indian population that already exceeds one billion people, not to mention the combined impact of rapid urbanization, accelerating environmental change, improved living standards and a move from traditional collective living to the more compartmentalized life of the nuclear family, the Indian appliance industry is booming as it taps into a largely unexploited market.

Taking the refrigerator segment as an example, Indian import-export statistics clearly highlight the true potential for indigenously produced precoated metal sheet. Top appliance manufacturers such as LG and Samsung, the two most dominant global players, also top the league in this sector in India too. For years, they have been importing PCM (Pre-Coated Metal) sheet for their appliance production lines in India.

By 2012, the major Indian coil coaters were looking to expand their range of value-added products in various segments. The domestic appliance sector offered a particularly attractive option. Rather than importing PCM sheets for the Indian appliance industry – as before – they could be produced domestically. India's coil coaters had the spare capacity and Berger Becker could provide the coatings expertise.

## Domestic production for greater efficiency

Cooperating with a number of key Indian coil coaters, Berger Becker turned its attention to product development within the appliance segment, with a view to developing high-end PCM for the domestic market.

As anticipated, penetrating this market sector was quite a challenge. However, with technological backing from



*In close cooperation, a team from Samsung visits Berger Becker's site in Goa.*

Beckers in Europe and Asia and the local support of coaters in India, the Berger Becker Coatings team was able to resolve the many challenges involved, finally gaining entry to this potentially huge market sector.

Some crucial product development is now being handled by Berger Becker Coatings itself and we are cooperating closely with India's coaters and major manufacturers such as Samsung, LG, Whirlpool, Haier and Panasonic. Other appliance manufacturers such as Videocon, Godrej and IFB are starting to replace powder coated products with PCM sheets and have approached Berger Becker Coatings concerning future cooperation.

## Imports down, profits up

The excellent performance demonstrated by the new range of value-added products for the domestic appliance sector has led to an almost 40% reduction in imported PCM. In cooperation with India's coaters, Berger Becker hopes to see PCM imports

eventually reduced by a further 40%. Mr. Rajesh Mehrotra, Managing Director of Berger Becker Coatings, is justifiably pleased about recent developments: "The appliance sector is very exciting and challenging. Teaming up with world giants like Samsung, LG, Whirlpool, Haier, Panasonic, IFB and other multinationals marks a key stage in the development of the company. Our success derives from a determination to become the 'one-stop solution' for appliance surface finishes."

## Dedicated support

To ensure that the PCM coatings produced for the Indian appliance sector fully comply with the stringent requirements of OEMs, Berger Becker has appointed a special Appliance Team, dedicated exclusively to meeting the highly specific needs of appliance manufacturers, in close cooperation with domestic coaters. Berger Becker Coatings is determined to contribute to the successful expansion of Indian industry. ■

# Beckers' Ecochrome<sup>®</sup>

Metallic mirror look – cleaner yet more cost efficient compared to other surface treatments

*Cornelia GREKO*



Beckers' creativity driven business unit Consumer Design Finishes (CDF), brings Ecochrome<sup>®</sup> to the Lifestyle Appliances market.

**An outstandingly** successful innovation, Ecochrome<sup>®</sup> enables many designers and customers to realize their dreams. The clean, mirror-like finish creates a dynamic surface that changes in tune with the surrounding environment.

## Saves time and money

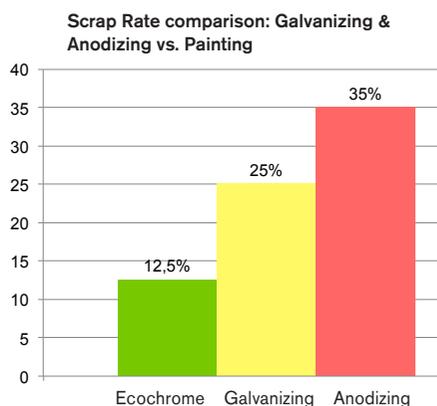
Ecochrome<sup>®</sup> offers numerous benefits, foremost being the fact that it is fully sprayable. This simplifies the finishing process compared to other surface-decoration technologies, such as vacuum metallization and chrome plating.

Currently, the metallizing process is complex and

demands a high amount of handling during the process. Ecochrome<sup>®</sup> reduces the labour requirement, since the final look of chrome or metal like finish can be achieved within one handling cycle. Surface-decoration companies that lack costly in-house metallization processes now have a competitive high-quality alternative.

The yield rates for metallization in the industry are very low when compared to the consistent performance of a well-adjusted paint line, which also offers the benefits of a higher yield and less scrap. Furthermore, a conventional paint cycle has far less environmental impact than anodizing and metal plating. Anodizing employs quite high amounts of chrome, while the metal plating process consumes a considerable amount of energy and chemicals, both posing significant environment challenges.

Ecochrome<sup>®</sup> already enjoys an established reputation for consistent performance as a high-quality finishing system for high-volume manufacturing, as in the appliance and automotive industries. It offers an equally attractive and efficient alternative for small-batch production runs too.



### Looks great – and feels good too!

Most importantly, of course, Ecochrome® looks great! And when it comes to the range of colours, surfaces (gloss levels and tactility) and substrate options (from plastics to metal and even composites, which can be either 2 or 3 dimensional), our customers are spoiled for choice. Ecochrome® offers designers unsurpassed flexibility as they seek to create sophisticated new products. The subtlety of an Ecochrome® finish imparts a diffuse haziness to the mirrored surface – helping diminish the prominence of unsightly fingerprints and dazzling reflections.

Good looking, cost efficient and with reduced environmental impact – it was only a matter of time before Ecochrome's qualities attracted the attention of the Lifestyle Appliances industry.

Dyson, a technology company and one of CDF's key customers, worked with the Beckers team to develop a finish and colour to fit its range plan. With support from the Dyson team this Beckers innovation quickly became a success and moved into mass production. Today it is used on vacuum cleaners, cordless devices, blade-less fans and hand dryers.

It not only looks good, it feels good too – thanks to the innovative Anodized Touch-and-Feel paint effect. It flatters plastic surfaces by creating a raw and dry yet smooth and silky finish that is eye catching as well as pleasant to touch. Looks like real aluminium and is available in a wide range of colours.

### Fashion statement

Many of today's consumer electronics aspire to be much more than just practical solutions to domestic needs:



The Dyson AM05 Fan for heating as well as cooling presented at the global trade show IFA 2013.

they are fashion statements, designed to express a specific lifestyle.

Responding to market needs, CDF publishes a two-year global trend forecast for the consumer electronics market, in which it presents 30 colours and special effects. This initiative, that has been on-going for almost 10 years, has proved extremely popular with existing and prospective customers.

In addition to the continued publication of these two-year forecasts, Beckers is also offering a complementary Global Lifestyle Appliance Collection, designed to cater to specific market needs. As well as Beckers' signature metallic-effect systems such as Ecochrome® and Anodized Touch-and-Feel, the Global Lifestyle Appliance Collection includes mono coats, coil coatings and flex touch finishes. ■



Picture showing Dyson DC52 vacuum cleaner with combined Ecochrome® and Anodized Touch- and-Feel.

# From reactive to proactive

Transformation from family firm to full integration with the operations of a global business involves dramatic change, demanding challenges and great flexibility. Having recently experienced such change, Beckers USA has completed the process by seeking and securing ISO certification, bringing its operations fully in line with the rest of the Beckers Group.

Lisa GAJEWSKI

**In these challenging** economic times, staying ahead of the competition means even more than providing superior and consistent quality, service and value for money – customers want independent confirmation too. Certification in compliance with the internationally recognized ISO 9001 standard provides irrefutable proof of compliance with the most stringent global requirements. Beckers’

site in Chicago was awarded ISO 9001:2008 certification on February 2, 2014.

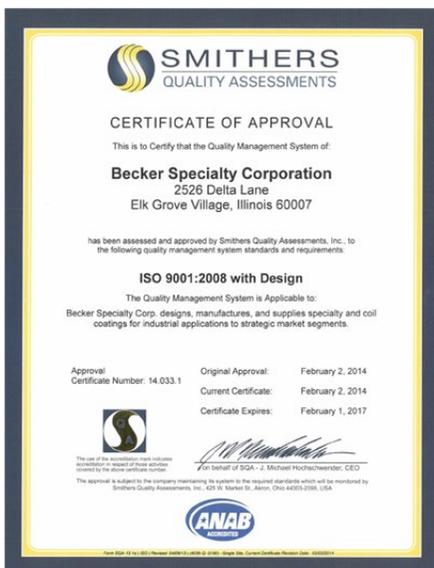
ISO certification is not awarded lightly: the entire process stretched over more than a year. Following the initial audit in November 2013, two minor adjustments had to be made to assure full and final conformance with the standard’s stringent criteria. Once brought to our attention, they were quickly implemented and are now in place.

Appointed to implement and oversee the company’s ISO 9001 program, Elizabeth Ridl really had her work cut out for her. The company was in the midst of some fairly significant personnel changes, as well as being involved in developing a new management team: quite a learning curve for Elizabeth, as well as everyone else. Although she could certainly have done with more help herself, she ploughed resolutely ahead, eventually getting everyone aboard, helping her fellow workers appreciate that change can be exciting, highly positive and definitely lead to a brighter future.

Here are some of Elizabeth’s responses to our questions in a recent interview:

## What was the greatest challenge?

The dramatic transformation in terms of corporate culture – in combination with the decision to transfer production from Canada to the US. Having recently experienced somewhat turbulent times, our employees were understandably skeptical about the prospect of yet more change. Some probably hoped the whole idea of certification would simply fade away. To ensure that people understood the crucial importance of introducing ISO 9001 in all aspects of our operations, I needed the backing of top management – which I got. This led to the establishment of consistent procedures, documentation and product testing. Initial skepticism was gradually replaced by cautious enthusiasm, some employees going one step further, actively contributing suggestions as to how we might further improve what we do and how we do it.





Going clockwise, Elizabeth Ridl, Aleksander Sasim, Issam Baydoun, Ray Muffler, Eric Wu and auditors Stephanie Zoller and John Cook.

## How was ISO 9001 implemented?

The ISO system was implemented in stages. The concept was first presented to senior management to clarify what was planned and why. The second stage involved documenting the procedures to be implemented and, as needed, formulating additional procedures to meet company-specific requirements. In some cases, supplementary guidelines for implementing procedures had to be produced if new aspects were featured. All such changes or additions were subjected to a thorough approval process, ensuring that those affected were kept well informed of what was going on and any planned changes. Once the necessary procedures had been determined, we had to ensure that everyone received appropriate training on procedures and guidelines that affected their day-to-day activities or job responsibilities. It has been a steep learning curve for everyone and we are continuing to refine our procedures, to make them as effective and efficient as possible.

After documenting all procedures and completion of training, internal and external audits were conducted. These noted a number of areas for further

improvement, resulting in the upgrade of several procedures. Other areas of potential improvement were highlighted by KPI (Key Performance Indicator) tracking and a management review of the entire system.

## What are the benefits of ISO 9001 certification?

There are many benefits in becoming ISO certified. ISO approval assures customers that we maintain high and consistent standards and, hopefully, helps secure more business in the future, from current and new customers. Many companies seek the peace of mind imparted by ISO certification, knowing that certified vendors have procedures in place that ensure consistency of supply and quality in the products and/or services they provide.

As a company, compliance with the ISO 9001: 2008 standard will encourage consistent improvement within the company and promote enhanced product quality. This will in turn increase customer satisfaction – the main goal of any effective quality-management system. We shall implement corrective and preventive measures with a view to achieving continuous improvements,

slashing customer complaints and boosting customer satisfaction. Many companies tend to a reactive rather than proactive approach. They prefer to fix things on the fly, rather than addressing the root cause to prevent the same thing happening again. Beckers USA prefers proactive!

By posting and implementing KPIs, we are able to describe, understand and communicate our processes throughout the company. This will lead to a more professional corporate culture and enhanced staff morale. What is expected and how far we achieve it comes as no surprise to anyone.

Tracking and sharing KPIs ensures management and employees stay focused on what is important. This helps improve efficiency, reduce waste and save money. Failure to track important items makes it impossible to know where your strengths lie and where improvements may be needed.

Tracking performance also helps achieve and sustain a reputation for superior quality. The ISO 9001 standard is globally respected.

The next audit is scheduled for October 2014. Our congratulations to Elizabeth Ridl for all her hard work in securing ISO 9001 certification for Beckers USA. ■



Elizabeth Ridl.



# Corporate Social Responsibility (CSR) initiatives

*Cornelia HUBER*

**As a globally operating company,** we are committed to social engagement and the communities in which we do business. Many employees at our sites around the world are directly involved in their neighbouring communities and are making a real difference through local initiatives. In Poland and South Africa, for example, colleagues help local children by organizing donations. Beckers Poland supported the “Our Children Foundation” last year, which focuses on the development, upbringing and education of children in need in Poland. Through involvement with two local charities – Doulos Ministries and The Boake Family Home – co-workers in South Africa are improving the lives of orphaned children who are suffering from HIV.

“The commitment to local communities reflects our values-based culture and further strengthens the team

spirit within the company. Giving back is also part of our responsibility as a global organization,” states Karsten Eller, Chief Operating Officer.

Another example comes from Beckers India, where our staff at the Goa office has been actively involved in social activities since 2010. These activities have included the establishment of a temporary medical camp to provide information and assistance, a rainwater harvesting project to optimize water use and donations of equipment to numerous schools in the area. The items donated, designed to meet practical needs, ranged from microscopes and aqua-guard water purifiers to tables, chairs, games and books. These are truly meaningful donations that make a real difference to life in these rural schools, which often lack the means to purchase even the bare necessities, such as furniture and school books. ■

# Beckers wins Sustainable Innovation Award

**Last November** Beckers Group was awarded the prestigious British Coatings Federation's "Sustainable Innovation Award" for its Beckry®Therm solar and thermal control technology.

This was particularly gratifying for us as we are committed to produce sustainable systems and products, not to mention the entry was in fierce competition with a record of entries with many interesting innovations for sustainability within the coatings industry.

Beckry®Therm system for exteriors uses a combination of special primers, pigmentation, and durable binders to deliver high reflectivity and high emissivity, together with an interior

coating that delivers thermal shielding and helps minimise both heat gain and heat loss within the building envelope. The total system contributes to sustainability and economic gains by decreasing cooling and heating requirements. ■

"We liked the clear and compelling commercial target coupled with an equally powerful sustainability impact"

**Dr. Phil Gamlen, juror**



*James Maxted, head of the team developing Beckry®Therm, at the Award Dinner.*

**E**stablished in 2000, Beckers Poland started to deliver coatings from its present Tarnow site in 2006. Early this year, Beckers Poland completed the production of its ten thousandth batch. Appropriately, this was an order for one of Beckers' largest customers, ArcelorMittal. To mark the occasion, Beckers Poland presented ArcelorMittal with a very special paint drum, stuffed with tasty treats. To celebrate the occasion with their customer, a group of colleagues from Beckers Poland followed the drum to the ArcelorMittal Poland site at Świętochłowice. The 'opening ceremony' proved a really 'sweet treat' for all concerned! ■

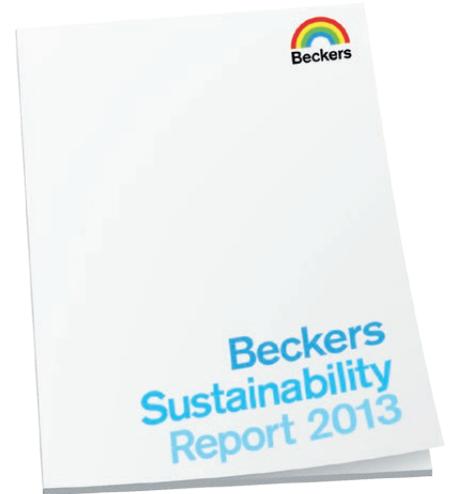
## Beckers Poland celebrates batch 10 000!



# Beckers Sustainability Report 2013

Our new Sustainability Report can be found on [www.beckers-group.com](http://www.beckers-group.com)

The paint market in general demand coatings that increase the sustainability value of their own products. In our Sustainability Report you can learn how we focus on sustainability both in research and in operations.



## Beckry® Roll showcased in new brochure

Roller shutters help contribute to sustainable living by reducing energy consumption, as well as offering extra security and comfort. The new Beckry® Roll brochure provides visual inspiration and practical advice for increased functionality and aesthetic appeal.

High abrasion resistant Beckry® Roll coil coating systems are the ideal solution for roller shutters and garage doors.

Featuring both mono-coat and multi-coat systems, the Beckry® Roll range includes special wood-effect finishes, thermo-reflective outdoor finishes and low emissivity indoor paints.

The broad Beckry® Roll palette of colours enables architects and property developers to add a new aesthetic dimension when designing residential and commercial buildings.



**Interested in having your own copy of our new brochure? Please email to:** [annika.bergman@beckers-group.com](mailto:annika.bergman@beckers-group.com)

# ShanDong KeRui Steel Company Ltd and Beckers sign Strategic Cooperation Agreement



*The signing ceremony: At the forefront Mrs Yu General Manager and owner of Kerui and Beckers Group's Dr. Christian Kober President Greater China.*

**Kerui was founded** in 2003 and is today one of the best known private coil coaters in China. Situated in Boxing, a county hosting many steel companies, the company operates 18 production lines, including 5 coil coating lines and 1 printed coil coating line, with an annual capacity of approximately 850 000 tonnes of coated coil.

A discussion between the two companies started in 2013 and was crowned by the signing ceremony on May 8, 2014.



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