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High-Gloss Laminates:

Reflecting on Technology

In an exclusive interview, Ralf Michael Gerigk, Plant and Sales Manager, DTS Germany, shares his views on the rise of high-gloss laminates. By Michael Tham

With technological advances in performance and production, high-gloss laminates are moving in to meet growing demand for aesthetics and durability in flooring and furniture. Ralf Michael Gerigk explains how the patented electron beam curing

(EBC) method helps to achieve this.

DTS is a German producer of decorative surfaces for various applications, mainly for the furniture and flooring industry. Its Elesgo brand of laminate surfaces offers high scratch resistance and is formaldehyde free.

Q: What do you see are the trends for high-gloss laminates in the next 12 months?

I believe that the demand for high-gloss laminates will continue to rise, and may even reach 40 percent of the market. One of the reasons is because the technology has improved by leaps and bounds. In the past, high-gloss products were not able to maintain their appearance, as they would scratch easily and lose aesthetic value. Most manufacturers stayed with the lacquer alternative.

The problem with lacquer however, is that it is extremely difficult to maintain the consistency of colour throughout the entire batch of production. It is an even greater challenge to replicate the same colour again six months later. Also, the production process demands clean room conditions – incurring high production costs.

As a classic example, furniture makers had a hard time trying to reproduce the showroom item that caught their customers' attention in the first place. Of course, it isn't as problematic if the product is targeted at the consumer market – one sold to Mr Lim, and another to Ms Lee. In commercial projects, where consistency in appearance is vital however, the issue becomes problematic.

With advances in technology, most laminates today are able to resolve the problem of colour and quality stability.

At DTS, we mix the colours in-house to ensure colour stability. Our customers are assured that they will get the exact same colour from production-to-production.

Q: How are Elesgo laminates different from other products on the market?

Most laminates on the market are made from melamine, manufactured and cured by applying pressure and heat. Our product is 100 percent melamine-

free as acrylic resins are used instead – cured by electronic beams in a matter of milliseconds, allowing for production speeds of 50-150 m/min. The electronic beam approach allows the production of super high-gloss surfaces with a scratch resistance of eight newtons or more – higher even than high pressure laminates (HPL). This characteristic makes the product suitable even for industrial flooring applications, being able to withstand heavy wear, such as walking with sandy shoes.

The energy required to make the product makes up only one percent of the total cost of production as heat is not necessary – this is eight times lower than continuously-pressed melamine-based laminates (CPL). The product is recyclable and does not release toxic gases when burnt. It is also formaldehyde-free, making it a more environmentally friendly product.

Most melamine-based laminates used for heavy wear applications are produced by short-cycle presses and are unable to achieve a high level of reflection. To obtain a super-gloss surface, a special short-cycle press is needed. This is not an economical approach as short-cycle presses have a lower rate of production than continuous presses.



Increasing demand for flooring that is both high-gloss and durable

DTS on the other hand, uses a continuous line, producing from 'roll-to-roll', instead of sheets. This allows surfaces ranging from super-matt to high-gloss to be produced. In addition, super-matt laminates that are soft-to-touch are also manufactured. Resin mixers can also vary the thickness of the laminates to suit various applications. For example, thinner material is produced for ceiling and wall panels, allowing greater flexibility. Thicker laminates are used for flooring and kitchen worktops where a higher wear resistance is needed.

Where are your markets and what are your plans for expansion in the next 12 months?

Our company targets the higher segment of the market, aiming to provide a 'specialist product for a reasonable price'.

Already in North America, South Africa, Saudi Arabia and Europe, we are investigating possibilities in Asia and are seeing the first positive results, especially in China. We expect further developments in these market and are about to enter into ventures for production of wall panelling systems in super-matt and high gloss, interior doors, door frames as well as wardrobe, kitchen and furniture applications.

Using Elesgo requires technical know-how and the right lamination facilities – each is different depending which application you are looking at. Eg: For flooring applications (and certain flooring designs), a certain level of telegraphing in the material is acceptable and UF (urea-formaldehyde) adhesion is generally sufficient. The requirements for furniture applications however, are more stringent in this regard and special adhesion is required.

The most common lamination method is PUR (polyurethane), but not many PUR lines exist in Asia at the moment. Our task therefore lies in finding the



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Executive Insights

right customers who are able to invest in the equipment or who already have the equipment to use our product. This also means that our product is different from the 'run-of-the-mill' laminates, and is targeted at the medium-sized to large furniture makers.

As an estimate, we are looking at about an investment of 150,000 – 200,000 euro for European made equipment. Of course, there are now also production lines made in Asia. These cost less, although they may feature a lower output and are less efficient.

How do you position your product in relation to natural materials such as wood and stone?

In terms of appearance, the product can simulate various designs and colours as well as embossed patterns of natural materials. From a technical point of view, we have performed corresponding scratch tests on both highly polished stone and the Elesgo laminate. While both surfaces yielded nearly similar results, the laminate is not as porous and does not suffer from the problems of water stains, embedded dust, mould or chemical attack. Because of these properties, it is also suitable for laboratory worktops.

Also compared to natural stone and melamine laminates, resin-based laminates have very different heat-transfer properties and feel relatively warmer to touch – more comfortable in cold weather. The product also costs less than actual stone surfaces. It is also used for wet areas such as bathrooms, where instead of wood, a PVC core is used.

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Continuous line production is possible with the electron beam curing method

What is your production capacity?

We employ about 60 people and have a production capacity of 20 million m² per annum. The operation is not labour-intensive. In comparison, a CPL manufacturer requires about 100 or more employees to achieve the same quantity of CPL.

We are currently investing a little over 12 million euro in a new coating line to increase our capacity to 30 million m². The add-on facility will

cover an area of about 15,000 m² and requires 20 additional employees to run the line. The facility is expected to be operational at the end of 2007. In about two years however, we will probably need to reinvest further, in order to meet growing international demand.

Given the benefits that are offered to furniture and flooring, high-gloss laminates look poised for further growth in these industries in Asia. **FDM** ENQUIRY NO. 8801