

## PAINTING WOOD

# newsletter

**GORI** INDUSTRY

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




For a wide range of different requirements

## New solutions for interior doors

Teknos now offers two new water borne top-coats for industrial interior door coatings:

**TEKNOCOAT AQUA 2575** is a quick-drying coating for vertical use. The product has very good blocking properties and can be tinted using the TEKNOCOLOR tinting system. Recommended primers include TEKNOCOAT AQUA PRIMER 1866 and TEKNOCOAT AQUA 1875. TEKNOCOAT AQUA 2575 makes an outstanding all-round solution for interior doors which are vertically coated. The product is available immediately as base 1, 2 and 3 in pack sizes of 10 and 20 litres.

**TEKNOCOAT AQUA 2580** is a water borne topcoat which was specifically developed for high-resistance surfaces. Its quick drying time and excellent blocking properties makes it ideal for industrial processes. It returns a very hard and tough surface which meets the most stringent requirements. TEKNOCOAT AQUA 2580 is used in a system with TEKNOCOAT AQUA PRIMER 1866 or TEKNOCOAT AQUA 1875 – both available as factory tinted.

Both newly developed products have already been tested under industrial conditions and have proven themselves in practical use.





### Core range of products for interior use

## The right choice for Teknos customers

Teknos is your ideal partner when it comes to wood for interior use. We have sized up our extensive product lineup and selected a core product range which covers all of the standard requirements. This gives Teknos customers a good overview of preselected products to help them find a suitable coating solution that is available right away. For individual production lines customers can of course rely on the assistance of experienced application engineers.

The core range includes solvent borne, water borne and UV-curing coatings for mouldings, interior doors, kitchens, floors, stairs and furniture. It covers various requirements ranging from fast and cost-effective production to the highest standards in surface quality. The products have proven themselves in practice and constitute the best technology currently available. With these solutions, Teknos customers will always be on the safe side.

The core product range is expressly intended to serve as a preselection. A broad spectrum of additional products will also be available depending on specific requirements and local markets.

The table on next page provides an overview of the core range. We also have a new brochure available before end of March which summarises the most important applications and system recommendations.



PW1501EN-02

Application	Requirements	Type	System*
Mouldings	Fast drying, high speed, high volume, economical, fast cure (UV)	One pack WB	Primer: TEKNOCOAT AQUA PRIMER 1866, TEKNOCOAT AQUA PRIMER 1867, AQUAFILLER 1100, TEKNOCOAT AQUA 1875 Sealer: TEKNOCOAT AQUA SEALER 2700 Topcoat opaque: TEKNOCOAT AQUA 2550, TEKNOCOAT AQUA 2575 Topcoat clear: TEKNOCLEAR AQUA 1332, TEKNOCOAT AQUA 2550
		Stain	Stain: TEKNOSTAIN 1992, TEKNOSTAIN 1996
		UV	Sealer: TEKNOLUX AQUA 1429 Topcoat opaque: TEKNOLUX AQUA 1728 Topcoat clear: TEKNOLUX AQUA 1429
		100% UV	Sealer: UVILUX 1493 Topcoat opaque: UVILUX 6790 Topcoat clear: UVILUX 1490
Interior doors	Fast drying, fast lines, horizontal or vertical application, good blocking resistance, fast cure (UV)	One pack WB	Primer: TEKNOCOAT AQUA PRIMER 1866, TEKNOCOAT AQUA 1875 Sealer: AQUAFILLER 2800 Topcoat opaque: TEKNOCOAT AQUA 2575, AQUACOAT 2650 Topcoat clear: TEKNOCOAT AQUA 1330, TEKNOCLEAR AQUA 1332, TEKNOCOAT AQUA 1878
		UV	Sealer: TEKNOLUX AQUA 1429 Topcoat opaque: TEKNOLUX AQUA 1728, TEKNOLUX AQUA 1429 Topcoat clear: TEKNOLUX AQUA 1429
		100% UV	Primer: UVILUX 1754 Sealer: UVILUX 1456, UVILUX 1493 Topcoat opaque: UVILUX1745, UVILUX 6790 Topcoat clear: UVILUX 1453, UVILUX 1490, UVILUX 6450
Furniture	High end filling and sanding propositions, knot sealing, wide gloss level, high chemical resistance, fast cure (UV)	One pack WB	Primer: TEKNOCOAT AQUA PRIMER 1866, AQUAFILLER 2800, TEKNOCOAT AQUA 1875 Sealer: TEKNOCOAT AQUA SEALER 2700, TEKNOCOAT AQUA 1330, AQUAFILLER 2800 Topcoat opaque: TEKNOCOAT AQUA 2575, TEKNOCOAT AQUA 1878, AQUACOAT 2650 Topcoat clear: TEKNOCOAT AQUA 1330, TEKNOCLEAR AQUA 1332, TEKNOCLEAR AQUA 1333
		Stain	Stain: TEKNOSTAIN 1992, TEKNOSTAIN 1996
		UV	Sealer: TEKNOLUX AQUA 1429 Topcoat opaque: TEKNOLUX AQUA 1728, TEKNOLUX AQUA 1429 Topcoat clear: TEKNOLUX AQUA 1429
		100% UV	Primer: UVILUX 1754, UVILUX 1760 Sealer: UVILUX SEALER 1455, UVILUX 1456, UVILUX 1493 Topcoat opaque: UVILUX1745, UVILUX 6790 Topcoat clear: UVILUX 1453, UVILUX 1490, UVILUX 6450
Kitchen	High end filling, sanding and edge propositions, wide gloss level, high chemical resistance, fast cure (UV)	One pack WB	Primer: AQUAFILLER 2800, TEKNOCOAT AQUA 1875
		Stain	Stain: TEKNOSTAIN 1992, TEKNOSTAIN 1996
		UV	Sealer: TEKNOLUX AQUA 1429 Topcoat opaque: TEKNOLUX AQUA 1728 Topcoat clear: TEKNOLUX AQUA 1429
		100% UV	Primer: UVILUX 1754 Sealer: UVILUX SEALER 1455, UVILUX 1456, UVILUX 1493 Topcoat opaque: UVILUX1745, UVILUX 6790 Topcoat clear: UVILUX 1453, UVILUX 1490, UVILUX 6450
Stairs	High wear and good mechanical resistance, good filling, knot sealing, fast cure (UV)	One pack WB	Topcoat clear: TEKNOCOAT AQUA 1879
		UV	Sealer: TEKNOLUX AQUA 1429 Topcoat opaque: TEKNOLUX AQUA 1728 Topcoat clear: TEKNOLUX AQUA 1429
		100% UV	Sealer: UVILUX SEALER 1455, UVILUX 1456, UVILUX 1493, UVILUX FILLER 2410, UVILUX SEALER 2420
Floors	Wood and PVC, high wear and good mechanical resistance, good filling, fast cure (UV)	One pack WB	Topcoat clear: TEKNOCOAT AQUA 1878, TEKNOCOAT AQUA 1879
		Stain	Stain: TEKNOSTAIN 1992, TEKNOSTAIN 1996
		100% UV	Sealer: UVILUX 1456, UVILUX FILLER 2410, UVILUX SEALER 2420 Topcoat clear: TEKNOLUX AQUA 1420, UVILUX 6450

\*These are standard product recommendation for coating systems - there might be other recommendations, depending on requirements and production environment.



## Coating in practice

### Wood for interior use

The simplest things are often responsible for faulty coatings. Here are some important aspects you should keep in mind when coating interior products:

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#### **Cracks in the surface (with water borne coatings)**

Cause: The drying process took place too quickly. This is usually due to insufficient air humidity or excessive air circulation in the work environment.

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#### **Parts painted white have blue edges**

Cause: The coatings is not viscous enough

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#### **Porous surface**

Potential causes:

- The coating selected is not suited to the substrate
- The spray nozzle is too large
- Not enough coatings was applied

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#### **Orange skin**

Typical causes:

- The spray nozzle is too large
- The surface did not have enough time to evaporate before drying
- The substrate had not been sanded smoothly enough before being coated

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#### **Excessive atomisation during vertical door spraying**

Potential causes:

- Insufficient air humidity in the spray booth
- Insufficient paint application



TEKNOS: STAND F01:30

**Teknos at  
the Scandinavian Coating fair  
19.-21.05.2015**

## The entire spectrum of industrial coating

Striking design surfaces, corrosion protection, fire protection or antimicrobial emulsion paint – there is hardly a coating requirement which Teknos does not have a solution for. All of these subjects will be covered at the Scandinavian Coating fair in Gothenburg, Sweden.

Teknos will be presenting its extensive range of industrial coating solutions for metal, wood, mineral and plastic surfaces (stand F01:30). Teknos is now appearing for the third time at Scandinavian Coating (after 2011 and 2013) and will be presenting its solutions to designers, engineers and purchasers from the entire Scandinavian region. We look forward to meeting you!

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



Case study: Tvilum (DK)

## Sophisticated furniture surfaces

Danish manufacturer Tvilum ships around eight million pieces of furniture all over the world each year. Founded in 1962 and based in Fårvang (near Aarhus), the company ranks among the world's most prominent manufacturers of ready-to-assemble furniture. The extensive product range covers flat-packed furniture for living rooms, bedrooms and children's rooms, as well as offices, kitchens and bathrooms. Tvilum focuses on quality and attractive design at various price points.

Tvilum operates on an international level with representatives, sales partners and distribution centres all over the world and sells its products through the classic furniture retail business as well as via online dealers. The

company also ships directly to end customers upon request. 1,250 boxes of Tvilum furniture are shipped worldwide every hour – that makes roughly 10 million a year!

Tvilum manufactures its products exclusively at its four plants in Denmark. State-of-the-art production lines and 50 years of experience in manufacturing flat-packed furniture enable the company to produce at competitive prices in its home country. Moreover, the company focuses on developing and optimising its production and design so that it can meet international standards and the needs of end customers at all times.

### 100% UV protection with UVILUX

Tvilum has relied on Teknos coatings since 2012. "We were looking for a new supplier when we wanted to launch a new production line for high-gloss surfaces," explains Tvilum purchasing director Karl Aage Jørgensen. "This not only called for good products, but also for a supplier with the experience and technical expertise to support a process like that. And

that's exactly what we found with Teknos."

And Teknos has been Tvilum's main supplier ever since. The high-gloss coating makes use of a 100% UV-curing system with UVILUX sealer, UVILUX primer and UVILUX topcoat with a gloss level of 90. Tvilum uses the system with rollers instead of the usual spray method – a special requirement which was met thanks to Teknos technical support. The coating meets the most demanding international standards, such as requirements for chemical resistance.

Cabinet doors in particular receive a high-gloss finish using this system, usually with an opaque coating in white, black or various trendy colours. For edges and interiors, Tvilum uses a matte coating with a gloss level of 20. The company also relies on Teknos when it comes to finishes with conventional gloss levels. "We are currently launching an additional production line at a different plant here in Denmark where we will also be using Teknos coatings continuously for a normal, more matte finish," Karl Aage Jørgensen confirms. This means that more and more customers all over the world can look forward to furniture with finishes from Teknos.

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





## Case study: Wooden bridges from Versowood

# Beautiful, durable and ecological

Impressive wooden bridges soar to lofty heights in the Finnish landscape and across Finland's highways, yet only small numbers are built each year. Versowood has tackled this challenge and will launch a wooden standard bridge design in the near future. The new concept enables the use of ready-made structural solutions and the cost-effective implementation of wooden bridges.

Versowood Group is Finland's largest private wood-processing group. In addition to upgraded wood products, the company manufactures glued laminated timber, wooden packaging, and energy products. The company has around a dozen production facilities in Finland, which process

approximately 1.3 million cubic metres of timber annually.

### Lots of experience with wooden bridges

Wooden bridges are a part of earth and road construction, which also involves structures such as electrical pylons and noise barriers. The company began producing the principal construction material for wooden bridges, glued pine timber, as early as 1972, and roughly 50 wooden bridges for vehicles and pedestrians are built from the material each year. Exports account for approximately one half of the company's production. Versowood markets and sells wooden bridges to clients such as cities, municipalities, private road owners, and traffic agencies.



Harri Mäenpää,  
Project Sales Manager at Versowood

The company produces several types of wooden bridges, with variations in the supporting structures. The most common type is the girder bridge, which is supported by its own height-to-length ratio. Another common type is the arched bridge, supported by glued laminated timber in the shape of an arch. Such bridges can reach a span of up to 100 metres.

Newer wooden bridge technology is represented by composite wood-concrete bridges and transversely prestressed bridges, in which the bridge's longitudinal glued timber beams have been compressed into a single slab by steel elements drilled transversely through the wood.



PW1501EN-06



### Good reasons for wood

“As a structure, a wooden bridge is a comprehensive concept,” says Harri Mäenpää, Project Sales Manager at Versowood. “However, the common perception of wooden bridges is something different; they are seen as decorative, unique landmarks, which are expensive to build. In actual fact, even a structure with just a wooden frame is counted as a wooden bridge. This can be hidden under a concrete shell, for example. The most important characteristic of a wooden bridge is not beauty – a wooden bridge has a smaller carbon footprint compared to concrete, and is made of lighter material that is easier to assemble and modify,” says Harri Mäenpää.

Even though wooden bridges have been built in Finland for millennia, their industrial manufacture remains a niche industry. Until recently, the situation has been similar in all public wood construction.

“Most of all, the low production volumes have been caused by attitudes towards wood construction,” Harri Mäenpää continues. “Design offices frequently consider wood construction to be tricky, since the availability of off-the-shelf solutions has been limited. Wood has also been overshadowed by concrete and steel in the construction-industry training”.

### Blueprint for engineering offices

But the future appears brighter; Versowood has developed two standard bridge models for vehicles and pedestrians each. A standard bridge model always provides engineer-



ing offices with ready models and structural solutions, which facilitate and expedite the design of the wooden bridge. From the contractor’s perspective, the benefits of standard bridges include lower manufacturing costs and factory-assembled elements.

The European code that entered into force in 2010 instituted new regulations for the structures of wooden bridges, and the type bridges comply with these. For example, bridges built for heavy vehicles must withstand a load of 76,000 kg. The service life of bridges also varies between countries, due to factors such as the impregnating agents used. In Finland, wood is impregnated with creosote and salt, which provide effective protection.

### Treated with Teknos products

In the field of surface treatment, Versowood

has long relied on the high-quality products of Teknos, which are perfect for the surface treatment of salt-impregnated wood. NORDICA EKO 3330-03 topcoat combined with AQUATOP 2920 alkyd acrylic paint or varnish provides long-lasting protection against the weather for wooden bridges. Opaque paints are currently favoured in surface treatment, since they last longer than transparent coatings.

The next few years will tell whether more durable and beautiful wooden bridges will rise in the parks and cities and along the highways of Finland.

[www.versowood.fi](http://www.versowood.fi)



Centria University of Applied Sciences

## Expertise on surface handling

Centria University of Applied Sciences, located in Central Finland, is a multidisciplinary centre of excellence, serving its immediate region. Under the steering of this educational establishment, the Centria R&D unit offers expert services to businesses and communities representing a variety of fields. The principal goal of the R&D unit is to work in partnership with its customers, developing their products, entrepreneurship and business, and aiding them in their international outreach effort.

Centria's R&D unit makes use of the latest technological applications, well suited for the handling of wood and various surfaces and similar purposes. Using our services, enterprises can tap into the know-how of a large number of experts, as well as benefit from the facilities of our well-equipped laboratory. "Our provision of services to enterprises began in the mid 90's, when we recognised the need of local businesses for research and project services. When water borne surface-handling products started gaining

greater market share at the turn of the millennium, our wood technology unit began to offer enterprises representing this field research services for surface handling processes," says development engineer Elisa Saarela. Teknos has participated in research projects involving surface handling processes from the very beginning.

### Expertise on surface handling processes

Among the services that Centria's R&D unit offers to customers in the surface handling business, the most popular are surveys of surface handling lines (in the investment phase), test runs and optimisation of lines' settings. This service provision has improved the efficiency of surface handling lines, made them more environmentally friendly and enhanced safety at work. Other services include provision of apprenticeship training to office staff working in the surface handling business, product testing and identification of problems encountered in surface handling. Such services will be extended to cover outdoor field tests.

The wood technology laboratory of the R&D unit has the capacity of testing, by itself, the surface handling process and measuring the hardness of a paint coating. An industrial-scale surface handling line, with a length of several dozens of metres, meets the modern requirements. "The functions of this line include spraying units for both low and high viscosity products, a nozzle oven complete with an IR radiation drying equipment, a

flash off cooling unit and mercury and gallium lamps, intended for UV hardening of products. The design of the line allows air flow, temperature, humidity and line speed to be adjusted, according to the customer's requirements," says development engineer Hanna Parikka.

### Customised services for Teknos's needs

Centria's R&D department has carried out several product tests for Teknos, the most important of which is the stacking test. This test seeks to find out the propensity of paint coatings that have undergone an industrial surface handling to stick to each other when placed under weight. The coatings that have been tested include for example NORDICA EKO 3330 (for cladding). The results of stacking tests have lent valuable aid to the planning of our customers' surface handling process.

The test currently in progress involves the measurement of water absorption by various paint coating combinations, more specifically, measuring the absorption of water trickling from outside through the paint coating. This tests aims at finding the best possible surface handling combination for cladding, to be used under varying weather conditions. Performed in standard conditions by a neutral party, such tests ensure that Teknos customers will benefit from top-quality products, real-time technical service and comprehensive surface handling solutions.

[www.centria.fi](http://www.centria.fi)





### Case study metal coating

# Comfortable train travel thanks to Teknos coatings

Distances in Finland are long, so the Finnish railway operator VR offers its customers comfortable travel in state-of-the-art carriages. The new double-decker DuettoPlus carriage has been developed specifically for this purpose. It offers a modern restaurant and a versatile multifunctional area with rotating seats and a meeting room. 26 cars are to be supplied by the beginning of 2015, the first

of which have already been running since January of last year. They are being used in InterCity long-distance trains, such as those on the 600 km route from Helsinki to Oulu.

#### Long-term partnership

The DuettoPlus is the result of five years of development work. It is manufactured by the Finnish company Transtech Oy. The coating

is the product of years of teamwork between VR, Transtech and Teknos. "Major advancements in coatings for railway carriages have been made over the past few decades," explains Joel Lindström, who is in charge of VR's fleet of vehicles. "Successful research work has enabled us to reduce VOC emissions with high-solid polyurethane coatings to a minimum."



Teknos industrial coatings are used for all coated surfaces in the new DuettoPlus. The products used include TEKNOPLAST PRIMER 7, TEKNOPOX FILLER 2112, TEKNODUR COMBI 3560 and TEKNODUR 0290. The bogie of the DuettoPlus is coated with TEKNOZINC 90 SE and TEKNODUR COMBI 3560.

[www.vrgroup.fi](http://www.vrgroup.fi)  
[www.transtech.fi](http://www.transtech.fi)