

Exact!



Hilger u. Kern/Dopag
Metering Technology



2 Roofing
in Africa

3 Viking
shields

4 Global
filters



5 Catching
the sun

6 New products
Events



Seeing is believing

Contact lenses get the hot wax treatment



TECHNO-LENS*

Created in 1976 by a group of opticians in the French speaking Swiss town of Lausanne, Techno-Lens are an independent company who serve the optical profession and who are now one of the largest manufacturers of contact lenses in Europe.

Confronted with an increasingly evolving market, Techno-Lens has pioneered the research and development of new techniques for producing contact lenses, for both the home and international marketplaces.

A key process in the production is the final honing or polishing of the lenses. This operation takes place after each lens has been individually attached to a holder by means of a liquid wax that quickly solidifies.

Traditionally, this has been accomplished by dipping each lens into a bath of hot wax before placing it onto the holder. Before honing can take place, it is vitally important that the lens is

The centring fixture



centred precisely onto the holder. This is achieved by the use of a special fixture.

Metering the hot wax onto the lens holder



This method of applying the wax however, has a number of drawbacks, not the least of which are the problems that can be caused by excessive wax being introduced onto the lens.

This is not only wasteful of the wax, but also creates a potential quality issue, as it is absolutely essential that the wax comes into contact only with the side of the lens that does not require honing.

This is of course not always possible in a manually operated process, and excess wax must always be removed with a solvent, which itself raises health and safety issues.

In order to overcome this problem, Techno-Lens turned to DOPAG to investigate a more efficient method of applying the wax.

DOPAG's answer was to design a semi-automatic system to accurately meter a precise volume of wax on each occasion.

During trials, it was determined that the optimum volume of wax that would firmly hold the lens in place without spillage was 7 cubic millimetres, falling perfectly into the dispensing

range of a DOPAG micro metering valve.

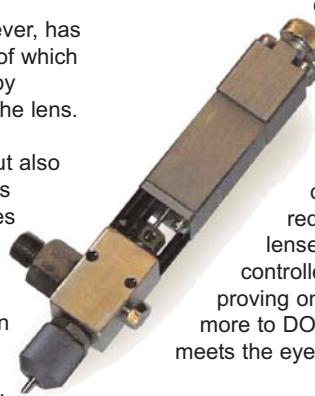
The wax is fed to the metering valve by means of a two litre size pressure feed container, heated to a temperature of 90 degrees Centigrade in order to melt the wax prior to dispensing.

Both the micro metering valve and the flexible hose that connects the pressure feed container to the metering valve, are heated to ensure that the wax is always dispensed at the correct temperature.

All the heating zones are controlled separately for maximum flexibility and accuracy.

The result is the simplification of a process that is of great importance to the quality of the finished products, and one that can justifiably point to a number of benefits.

Not only does the new system help to achieve consistent quality, but it also operates without the need for expensive-to-use cleaning solvents, saving time in the process.



DOPAG Micro Metering valve

By dispensing only the quantity of wax that is required to effectively hold the lenses in place, Techno-Lens has controlled its consumption of wax, proving once more that there is often more to DOPAG metering systems than meets the eye!

A contact lens held in place on the holder

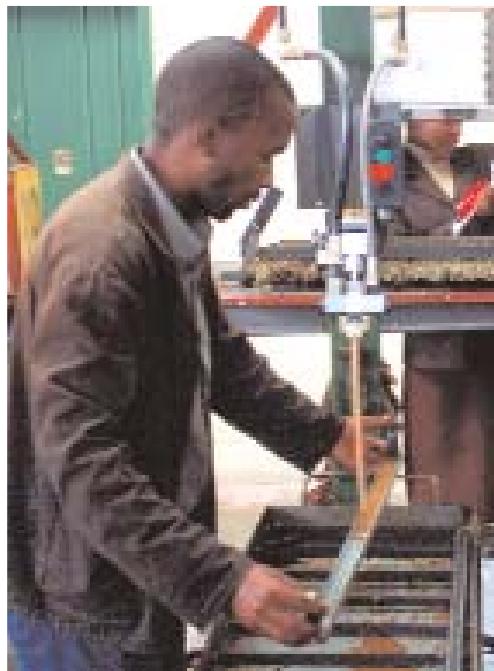




Out of Africa

Africa Roofing

Roofing the African way with DOPAG VARIO-MIX



Mixed material is laid into a "U" section mould

Using natural local materials like reeds, grasses and palm leaves for thatching roofs has been a way of life for centuries in Africa.

Now with the help of DOPAG's South African distributor, Resin Processing Solutions cc., the process for manufacturing thatched roofs belongs squarely in the 21st century.

Africa Roofing started life in 1979 serving the South African market and since then demand has steadily grown throughout the world for their products.

They now export worldwide and are

responsible for many prestige installations in places as diverse as New Zealand, Saudi Arabia, Hawaii and Puerto Rico.

The design of a thatched roof from Africa Roofing consists of many small "tiles" in much the same way as a clay tile roof does, albeit though, somewhat larger in size.

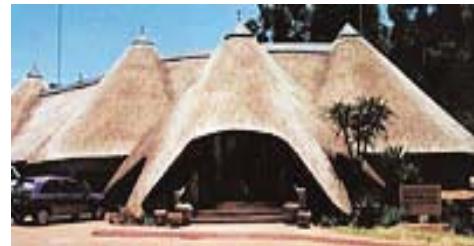
The thatch tiles are produced by bonding reeds or grasses together at one end with a polyurethane elastomer, a flexible two component resin supplied by CH Chemicals.

A metal "U" section channel is used as a temporary mould and when de-moulded, the thatch tile is sufficiently flexible for it to be mounted even onto circular structures such as gazebos and sunshades.

Until recently the elastomer was proportioned, mixed and applied by hand. This method of course can be a time consuming and messy process as well as wasteful of material, particularly with this type of short pot life polyurethane.

With the introduction of a DOPAG VARIO-MIX machine, the material, which is now temperature controlled, is proportioned accurately, homogeneously mixed and easily applied, simply by sliding the "U" section mould underneath a fixed DOPAG twin valve, fitted with a disposable static mixer.

In addition, waste material has been completely eliminated as the machine operates only on demand, benefiting Africa Roofing with material cost savings, a cleaner working environment and an improvement in product quality standards.



Good news indeed, but the introduction of the VARIO-MIX system has also benefited Africa Roofing by allowing them to significantly increase production of their thatched roofing tiles.



DOPAG VARIO-MIX





In the footsteps of the Vikings



Bullet proof panel manufacturer chooses DOPAG ECONO-MIX



A panel mould

The firm of Composhield A/S, based in the ancient Viking town of Hobro has developed and patented a unique ceramic-polymer based lightweight panel concept, capable of resisting extreme dynamic loads from ballistic and blast impacts.

The composite material technology is a lightweight structure which is based on an extremely flexible polymer binder that provides structural integrity.

The active elements in the panels are the disrupter (ceramic front) and the absorber (fibre reinforced polymer composite backing).

To meter, mix and dispense the 2 component polyurethane that forms the absorber element, Composhield chose a DOPAG ECONO-MIX, with



DOPAG ECONO-MIX C



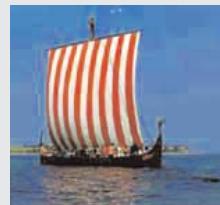
the added facility of colour injection.

The homogenously mixed material is injected into the moulds using a DOPAG twin valve fitted with a disposable static mixer.

Additionally, the ECONO-MIX is equipped with a level control system for the feed tanks, which are also fitted with agitation in order to keep the materials in prime condition.

The result is a panel certified to NATO standards that can be used as armour for military vehicles, vessels, and helicopters as well as body armour, that over the last decade has proven to be the ultimate ballistic protection material.

Just a modern development of the famous shields that were carried by the Vikings centuries ago!



Soft green slopes, forests and the deep blue shining waters of fjords characterise the area of the Danish Kingdom around the town of Hobro in Jutland where Composhield is based.

It is from this landscape that the Vikings set sail as traders as well as marauders and colonisers around twelve centuries ago.

The Fyrkat Viking Fortress in the town of Hobro is one of only four sites of its kind in Denmark and has been reconstructed on its original site.



Bullet proof panel after testing





A breath of fresh air

Madison Filter

International filter manufacturer sticks with DOPAG



Mixed resin being dispensed into the fixture

Madison Filter, with operations in the UK, Germany, South Africa, USA, New Zealand and a global presence in over forty countries, design and manufacture specialist consumable filter media, for the separation of solids from liquids and gases.

In their German facility, located in the town of Salzgitter-Calbecht, Madison Filter GmbH produce compact filter elements from polyester felt, for use with dust extraction systems.

These systems are highly effective in removing both dust particles and poisonous exhaust gases from the atmosphere and contribute directly to a healthier environment.

The polyester felt is available in different qualities and air permeability factors, which are selected according to each area of application.

The filter elements are folded by means of a special fabric forming device into a pleated form which adds structural stability to the finished panels, as well as maximising the surface area of the filter.

The pleated elements are permanently held in place at both ends with either a two component polyurethane or an epoxy resin.

This is achieved by placing the element into a fixture which holds the element in the correct position whilst mixed resin is dispensed into the fixture and allowed to cure, before demoulding takes place.

Following deburring, the filters are then completely ready for installation. The result is a high quality, stable filter panel.

Madison Filter GmbH have been successfully using

DOPAG equipment for dispensing two component resins as part of their manufacturing process for over 15 years, so when the time came to increase their production, it was a sensible option to consider DOPAG again.

Previously, Madison had been using DOPAG ECONO-MIX piston pump type two component metering, mixing and dispensing machines, which still provide satisfactory service today.

However, production requirements have now become more advanced in terms of process security and the degree of automation demanded, which indicated the use of a state-of-the-art gear type metering, mixing and dispensing machine.

A DOPAG ELDO-MIX 301 machine was therefore selected and recently installed in order to satisfy these requirements.

The DOPAG ELDO-MIX 301 machine features individually driven gear pumps, which draw the two components of the resin separately from pressure feed containers.

The gear pumps then proportion the two components at the specified pre-selected mixing ratio before being fed separately under pressure to a hand held twin "snuffer" dispensing valve where they are homogeneously mixed and dispensed into the mould.

The dispensing valve is fitted with a disposable plastic static mixer, which is an inexpensive and convenient device that eliminates the need for costly and environmentally unfriendly flushing solvents.

Commented Madison Filters Production Manager, Mr. Heiko Brinkmann, "We need to process one tonne of polyurethane and/or



Production Manager, Mr. Heiko Brinkmann - another happy customer!

epoxy resin every month for this part of our filter production, so it is most important that we use reliable equipment. Not only has DOPAG equipment proved to be reliable, but also the support, service and maintenance work provided by Hilger and Kern has been excellent."



Finished filters



DOPAG ELDO-MIX 301

Tales from the Vienna Woods

Austrian integrator automates solar panel production



Close to Austria's capital city of Vienna lies the ancient market town of St. Andrä-Wördern, located in the district of Tulln, on the edge of the Vienna Woods.

Once a fortified hill-top settlement in the bronze age, today the town

VISCO-MIX P200-30 proportioning mechanism



is the headquarters of a major electro-mechanical systems integrator, EEP-Maschinenbau GmbH, who utilise the very latest technologies in control engineering in order that they can offer their customers the optimum

A completed bank of solar panels



in custom designed automation solutions.

One such recent project involved the automated production of photovoltaic generator solar energy panels.

During manufacture, it is necessary to seal the panels against the ingress of water during use. For this purpose, a two component silicone sealant called Elastosil SG500, supplied by Wacker was chosen as the most appropriate product for this type of application.

The system designed by EEP involved applying the sealant to the panels by means of a six axis robot arm, onto which was mounted a DOPAG twin dispensing valve fitted with a static mixer.

The two components are proportioned at a ratio of 10:1 by volume and fed to the robot arm by a VISCO-MIX P200-30 metering and mixing machine.

The use of the VISCO-MIX P200-30 ensures that close control can be exercised over the flow rate of the mixed material, which is of course an important element in determining the exact width of the bead laid onto the panel.

The VISCO-MIX P200-30 is particularly suitable for sealing and bonding applications where a continuous supply of viscous media is required.

The base component is fed directly from standard open topped 200 litre sized drums, whilst the hardener is fed from smaller, 25 litre sized pails.

Both the base and the hardener components remain separate after proportioning, until they reach the static mixing system, where they are homogeneously mixed before being dispensed.

The system completely eliminates waste due to the precise control of the dispensing operation, which makes the VISCO-MIX H200 the ideal machine for use with automated assembly operations.

DOPAG VISCO-MIX P200-30



Squeezing the silicone joint during assembly



Automatically applying the silicone bead with a robot arm



Exhibition News



Structural Bonding Intl.



The Hilger u. Kern / DOPAG group will be exhibiting at the **Structural Bonding International** exhibition which will be held in Essen, Germany, between 12th of September and 17th of September 2005.

If you plan to visit the fair, don't forget to come take a look at our latest products. You can talk to us on stand number **40E** in **Hall 4**.

You can be sure of a very warm welcome.



Composites Show update



The JEC Composites show, which was held at Paris Expo between the 5th and 7th April, is the largest composites show in the world. Around 900 exhibitors, which included processors, raw material producers, machine manufacturers and service providers, converged on Paris to display their latest products to this expanding market.

Already widely used for processing two component resins in the composites market, the DOPAG VARIO-MIX metering and mixing system continued to be the centre of attention. However, making its debut at JEC was the newly launched ELDO-MIX 001 entry level gear type two component metering and mixing machine, which generated a considerable amount of interest amongst visitors.

Commented Florent Vercasson, Marketing Manager at DOPAG France, "This show cannot be ignored by anyone involved in the composites industry and is an excellent venue for contacts to be made between material manufacturers, machine manufacturers and end users. These meetings allow us to take stock of the latest technologies and to exchange important information relating to our customers needs and future innovations."



Hilger u. Kern / Dopag Metering Technology

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New Spray Valve



Measuring only 150 mm long and 20 mm square in section, the new DOPAG SPRAY VALVE ID1 has been specifically designed for applying small quantities of light viscosity materials in a closely controlled spray pattern.

Extremely useful for such applications as applying adhesive primers to fixed glass in vehicles prior to the direct glazing process, or spraying light coatings of lubricants onto component parts, the shape and small size of the SPRAY VALVE lends itself to manifold mounting with the ability to create a bank of a number of valves in a small space.

The spray pattern has the facility for very fine adjustment, whilst the wetted parts are constructed from stain and acid proofed materials, making this valve exceptionally versatile in its potential applications.



See us at



If you are in the South of England on 15th September, why not come along to the Botleigh Grange Hotel in Southampton, where Dopag (UK) Ltd will be participating in the Fastening News Live! Roadshow.

Admission, refreshments and parking are all free and you can catch up with the latest advances in all forms of industrial fastening, including of course, adhesive dispensing.

For directions to the Botleigh Grange Hotel and for more information about the Roadshow, visit the Fastening News web site at: www.fasteningnews.net

We look forward to meeting you there.