



WORLD WIDE WEAVE

A fresh breeze for the heating section

Immediate evaporation thanks to an innovative upper belt by GKD

Profitability in corrugated board production is primarily dependent on plant efficiency, quality and productivity. The significant factors are the costs for paper, glue and energy. Now, with the innovative heating belt CONDUCTO® 3313 by GKD – Gebr. Kufferath AG, a new high-tech generation of upper belts is available. The open mesh construction allows immediate evaporation of steam from the the corrugated board in the heating section. The innovative belt combines this capability, which solves the main challenges in corrugated board production, with optimal properties that remain consistent throughout the complete service life of the belt. The CONDUCTO® 3313 heating belt is not manufacturer-specific and, compared over similar runtimes to conventional market products, it offers substantial savings potential in terms of energy, time and glue consumption. In addition, the special material and mesh construction of polyester, aramide and bronze combines all-round protection against electrostatic discharge with exceptional process efficiency and robustness.

As demand for corrugated board continues to grow steadily, so does the complexity of market requirements. The industry is faced with price pressure, declining lot sizes and increasingly demanding quality expectations towards packaging materials manufactured on modern, integrated production lines. A significant role in the quality and productivity of such plants is played by the heating and traction section. Perfect glueing, fast drying and reliable directional stability are the key success factors here. For over 20 years now



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GKD, the international market and technology leader for technical meshes, headquartered in Dueren in Germany's Rhineland, has been manufacturing and optimising woven metal mesh belts in an exclusive partnership with BHS Corrugated for BHS corrugated board plants. Independent of this collaboration, the process belt specialists have now developed an innovative heating belt that is universally deployable. After years of practical testing in close cooperation with users, the CONDUCTO[®] 3313 is now being launched on the market.

Significantly shorter drying process

The open mesh structure with an air permeability CFM rating of 600 allows immediate escape of the steam, thus significantly shortening the drying process. This, in turn, substantially reduces the expenses for heating energy required. SCHELLING AG in Switzerland and owner Beat M. Schelling have been involved over several years in the various developmental stages of the GKD heating belt. His conclusion regarding the CONDUCTO[®] 3313 belt: "Through a number of measures, we have managed in recent years to reduce the steam pressure in our plant by around 15 percent. The GKD belt has played a major role in this improvement." The consumption rate of glue has also declined, because the glue sets more rapidly thanks to the faster evaporation rate of the steam, as Herbert Breuer, managing director of the company Gissler & Pass GmbH in Juelich confirms: "With about nine percent less heating energy and around five percent less glue, the drying process with the new heating belt is significantly more efficient." The mesh is highly air permeable and, at just eight millimetres is also thinner than other products currently available on the market. So it does not saturate itself with moisture and thus maintains better traction – unlike conventional belts. In first practical applications, up to 20 percent savings on belt drive energy were achieved. Beat M. Schelling estimates the savings on electrical energy for



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his company as "about 15 to 20 percent thanks to the deployment of the new belt and adjustment of the belt drive". At Gissler & Pass, energy consumption has dropped by 17 percent. At the same time, the faster drying of the corrugated board and the lastingly uniform belt characteristics have significantly increased production speed, process reliability and productivity. SCHELLING AG has also noticed the same benefits, as Paolo Froio, technical manager, reports: "Practical experience shows that, especially in the case of the product 'Microwave', a micro-corrugated board, very good flatness is easier to achieve. Using the GKD belt on our plant, we can run production of duplex and heavy grammage combinations about 12 percent faster." The corrugated board comes out of the plant with excellent flatness, so it is immediately ready for stacking and further processing. "This has the advantage," says Herbert Breuer, "that we have fewer semi-finished goods standing idle in the factory." For Beat M. Schelling, "The optimal flatness of the corrugated board ensures generally better overall performance in the further processing stage thanks to higher machine speeds and fewer disruptions during insertion and at the feeder."

High savings potential

The development of the new CONDUCTO[®] 3313 heating belt was based on the polyester mesh belts CONDUCTO[®] 5065 and 2206, both of which are already well-established in numerous other branches of industry. The robust mesh construction that is characteristic of all CONDUCTO[®] belts is specially designed to meet sophisticated thermal and mechanical requirements. Apart from their mechanical stability and tensile strength, these belts also prove themselves in the long term through their excellent cross-stability, optimal flatness and reliable tracking. In addition, woven-in bronze wires in the running direction reliably prevent electrostatic charging. In order to reduce the process-typical wear on the belt in corrugated board production, the wire



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thickness of the monofilaments in the CONDUCTO® 3311 belt was increased – depending on the specific plant – to a diameter of 4.6 or 5.5 millimetres, and a two-ply weave was selected. In the next stage, GKD strengthened the wear resistance of the polyester in the warp using its own development of a polyester-aramide filament system – with different weaves on the product and inner sides. In this way, CONDUCTO® 3313 compensates on the product side for the higher abrasion over the heating section through a significantly tighter weave with the polyester-aramide filament. Additional reinforcement of the belt edges also helps to ensure long service life. Paolo Froio is optimistic about this aspect of the new belt: "The CONDUCTO® 3313 belt represents a giant leap in terms of long-term reliability. The way things look at the moment, for the first time we'll be able to process a complete annual volume with the belt." GKD uses special thermal treatment to prevent the belt from shrinking. Thanks to its stable construction, which compensates for its light weight (3.05 kg/m²) in comparison to conventional belts, the CONDUCTO® 3313 upper belt guarantees consistent pressure and thus optimal contact between the corrugated board and the heating plate – even in latest-generation, high-performance production plants. A further advantage over conventional belts currently on the market: the CONDUCTO® 3313 is designed for easy and even automated belt cleaning per high-pressure cleaners. This prevents damage to the corrugated board through partial accumulations of glue. The hook seam is covered on the product side of the belt and is therefore non-marking. It is not covered on the inner side. The purchase price of the innovative CONDUCTO® 3313 upper belt also sets new standards: customers can expect substantial savings for comparable run times. This is possible because of the reduced amount of material used and the special production method. For this reason, the overall conclusion drawn by Herbert Breuer at Gissler & Pass is extremely positive: "The results of the development phase that, together with GKD, we have been pressing



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ahead with for years indicate distinct advantages for the production of corrugated board using the new heating belt."

Worldwide service from a single source

Installing or changing the belt is not a complicated process and is made even easier by GKD's belt feeder. For made-to-measure designs and local customer service, the team of experts at GKD's business unit WEAVE IN MOTION are ready to respond worldwide, around the clock and every day of the year. Decades of accumulated know-how in corrugated board production and extensive consulting competence, also in GKD's subsidiaries on five continents, are a guarantee for customers all over the world that they have a reliable solutions partner at their side. Currently, development is in progress of traction belts and drum covers, so GKD will soon be in a position to equip the heating and traction section from a single source.

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GKD – GEBR. KUFFERATH AG

The owner-run technical weaver GKD – GEBR. KUFFERATH AG is the global market leader for metal and plastic woven solutions. Under the umbrella of GKD – WORLD WIDE WEAVE the company combines four independent business units: SOLID WEAVE (industrial meshes), WEAVE IN MOTION (process belt meshes), CREATIVE WEAVE (architectural meshes) and COMPACT FILTRATION (compact filter systems). With its seven plants – including the headquarters in Germany and other facilities in the US, Great Britain, South Africa, China, India and Chile – as well as its branches in France, Spain, Dubai, Qatar and worldwide representatives, GKD is never far from its customers.



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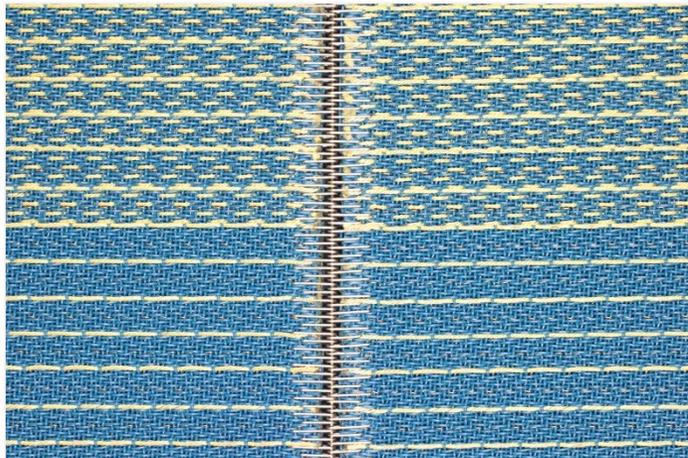
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A fresh breeze for the heating section: Immediate evaporation thanks to an innovative upper belt by GKD

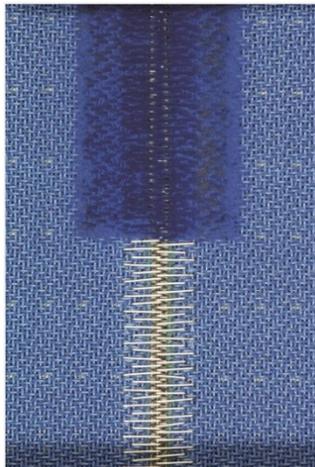


Picture 1-2: GKD strengthened the wear resistance of the polyester in the warp using its own development of a polyester-aramide filament system with different weaves on the product and inner sides.

Picture 1-3 © GKD

Picture 4 © Gissler & Pass

Picture 5 © SCHELLING



Picture 3: The hook seam is covered on the product side of the belt and is therefore non-marking.



Picture 4: With the new upper belt by GKD, the drying process at Gissler & Pass is significantly more efficient.



Picture 5: The optimal flatness of the corrugated board ensures generally better overall performance in the further processing stage at SCHELLING AG.

We will be happy to send you the desired images in printable resolution by e-mail.

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