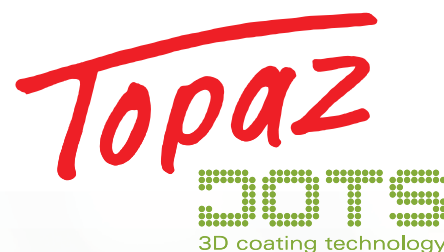




Trans-Textil and Covestro team up with PUMA in the Champions League



Topaz DOTS and INSQIN® technology in the latest premium soccer shoe: The evoPOWER Vigor

PUMA is unveiling its latest-generation “evoPOWER Vigor” soccer shoes in a global campaign in early 2017. The water-borne textile coating that gives the shoe its unique, three-dimensional look, reminiscent of snake skin, was developed and implemented by technology partners Trans-Textil and Covestro. Their focus was on innovative functionality for competitive and team sports, design, high technical standards and eco-friendly materials.

Topaz DOTS coating technology from Trans-Textil defines the look of this latest-generation footwear collection. Covestro’s INSQIN®, an offer of sustainable waterborne polyurethane (PU) technology development, created the three-dimensional, colored, polyurethane rhombuses shoe upper material that covers the “evoPOWER Vigor” on the instep and the outstep. PUMA calls this feature “Accufoam 3D” and its purpose is to increase accuracy and ball control. The additional cushioning for hard passes, together with the stretchable base textile, improves the feeling of contact with the ball and offers greater comfort based on the barefoot principle, for optimal freedom of movement, power and precision in all weather conditions.

German partnership for design and ergonomics



In close cooperation with the PUMA design team, Trans-Textil and Covestro developed both the sustainable, waterborne coating formulation and the textile processing technology. In addition to the unique look of the shoes, the partners focused on the functional properties for top-level team sports

and the suitability of the concept in a textile manufacturing process on a highly elastic base material (3D spacer fabric and lining). Thanks to their years of experience in the shoe market, the German partners also were able to adapt the multi-layer design to the demands of further processing in shoe



manufacturing. The tight schedule, from implementing the partial 3D coating technology and shoe manufacturing, all the way to the sales campaign, required closely coordinated processes between the individual partners. Trans-Textil GmbH benefited from its high flexibility in an international supply chain.

Topaz DOTS coating: versatile technology

For this new development, Trans-Textil drew on its many years of experience in the field of textile coating and a highly qualified team of specialists in applications technology, laboratory analysis and production. Topaz DOTS coating technology already is used successfully as a spacer system in premium firefighting clothing and in VAP® lightweight construction (under a joint patent with AIRBUS). Adapting the basic formulations together with Covestro and combining them with Trans-Textil's processing technology results in a broad portfolio of technical properties and design options for partial or full-surface coating. For example, coloring, patterns, wear and temperature resistance, waterproofness and breathability can be defined as required.

INSQIN®: waterborne PU coatings for design, functionality and sustainability

As part of the Topaz ELEMENTS concept, Trans-Textil and Covestro developed the new coating for PUMA to be an eco-friendly, waterborne product, thus fulfilling the high ecological standards of one of the world's leading sporting goods brands, based in Herzogenaurach, Germany. The coating material is made with INSQIN®,

Covestro's waterborne PU technology which has been used on a wide range of fashion and sports products, including synthetic materials for shoe upper, garment and bag, beathable outdoor garments and PU inks for textile printing. Waterborne PU chemicals can be processed without solvents, improving workplace safety, eliminating risks of environmental pollution and consuming up to 95 % less water and 50 % less energy at manufacturing sites.

Textile developments for the future

Soccer player Olivier Giroud was one of the first to test the new shoe. Borussia Dortmund, Arsenal London and selected teams on the international level also put the evoPOWER Vigor to the test in secret trials. The innovative team of PUMA, Trans-Textil and Covestro is already preparing its next highlight: The concept is to be expanded with new textile technologies to reflect the high level of diversity typical of this team sport.



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