



# Seal of Connoisseur

**Twenty years ago, the Textile and Research Institute in Denkendorf in Baden-Württemberg developed a seal of quality for which researchers are still using living cells to test how well-tolerated textiles really are on our skin: the FKT seal.**

The 20-year anniversary is also known as the thorny wedding anniversary - or porcelain wedding anniversary. It seems that after two decades the cemented relationship is either fragile or sound. Both characteristics that speak for a special sensibility. How fitting, since the FKT seal is also celebrating its 20th anniversary in the market these days. Back in 1994, the initial spark for such a quality check came from the knitting industry, which at the time had a real image problem. The industry did not want to live with a headline like 'poison in the cupboard' and went on the offensive. At the German Institutes of Textile and Fiber Research in Denkendorf (DITF), the field of biomedicine had long since established itself. Even before the turn of the millennium, the focus there was on determining biocompatibility - in other words, how biocompatible substances are, from biomaterials to implants. While the knitting industry had a problem, a solution was waiting in Denkendorf, which eventually grew into an association with special qualities - the Förderverein Körperverträgliche Textilien e.V. (FKT).

## More than 10,000 textiles

Together with the University Hospital in Heidelberg, the biocompatibility tests for the textiles of the future matured, while the test procedures themselves were put through their paces to determine whether their statements were reliable and repeatable - they were. Pure science. "Back then, we started not to look for certain substances in textiles, but to test the effect of a fabric on skin cells. This was a decisive difference to the existing OEKO-TEX seal, which still pays particular attention to the ingredients today. We then looked to see whether a T-shirt would trigger any reaction on the skin or not," explains Prof. Dr. Heinrich Planck, the father of the seal. Together with Prof. Dr. Michael Doser, head of the biomedical engineering department at the DITF, he finally brought the test seal to market maturity. In the meantime, well over 10,000 textiles have been tested. By the way, the first test object was baby clothes.

## Failed

For the tests, the textiles are placed on a gel, pressed in and left there for a typical wearing time. If there are unbound and possibly harmful chemicals in the textile, these migrate into the gel which simulates the skin. The aqueous phase is then extracted from the gel and tested. The skin cells used in this process are extremely sensitive. If only the slightest traces of harmful substances are present, they suffer. "You can then see from the vitality parameters that substances have been dissolved from the textile which can damage the human cells," explains Doser. Especially in the initial phase of the tests 20 years ago, textiles regularly failed. The fact that textiles fail the test has not changed to this day, but the number of problem textiles has. It has dropped significantly. In other words: Our textiles are now really healthier for the skin. At that time, the outfitters, in other words those

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companies that optimize clothing for sale, focused primarily on bright colors, a good grip and easy washability. This was often at the expense of health. This is where the industry has developed, thanks in part to the FKT seal. To be fair, however, it must be added that there is a growing awareness of quality textiles in sustainable production processes throughout Germany. Citizens are more attentive and rightly want to know what is in the textiles they wear on their skin, but also where they come from. In this respect, the seal came at the right time and has created a decisive turnaround for a healthier approach to textiles. This is one side of the coin.

### **Sales argument vs. price**

The other is that it is still too expensive for many textile companies to carry out such tests. While the healthy textile is also a genuine sales argument, the desire for the cheap shirt rules simultaneously. At the same time, the short production and sales cycles of modern clothing hardly allow such elaborate tests. This is why particularly durable products have become established for the high-quality FKT seal. For example, the Austrian terry goods manufacturer Vossen has been relying on the seal from Denkendorf, 700 kilometers away, for many years: "There is no shortage of seals in the industry - from meaningful to completely fake. But we want quality that confirms quality. Ultimately, there is no getting around a certain certification today, not only in the textile sector. So we take the best one," explains Dipl. Ing. Werner Blohmann, managing director of Vossen GmbH.

### **Dewy testing**

Companies from India, Turkey and Malaysia are also active within FKT to have their products tested. While non-iron shirts from Germany still regularly fail because the additives for easy ironing are simply problematic - however practical they may be.

The seal is valid for one year, after which individual products are randomly tested again. The effort is high, the significance too. Numerous laboratory staff from biology and chemistry are implementing what the researchers developed 20 years ago. Adapted several times over the years and always kept up to date with the latest technology, the FKT seal proves today, as it did then, that the compatibility of a textile is measurable. Whether this measurement is taken in the wallet or in the body is a matter for everyone to decide for themselves.

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BU: Preparation of textile samples with skin simulating gel (Photo FKTe.V.)



BU: Biocompatibility test in the laboratory (Photo FKTe.V.)



BU: Prof. Dr. Michael Doser (head of biomedical engineering at the DITF) and Prof. Dr. Heinrich Planck (founding father of the seal) (Photo FKTe.V.)