# Fluorescent Colors Offer More Than Meets The Eye

Many companies seek to develop products that have a "warm and fuzzy" feeling. Rolf Bender takes this one step further by developing products that positively glow. One focus of Bender's work is fluorescence, and his expertise in product design and materials formulation is yielding innovative applications and concepts across a range of markets.

Through his company, Depro Design & Production GmbH, in Troisdorf, Germany, Bender has been applying his knowledge of fluorescence to products ranging from novelties and signage to packaging, security, and safety. He is a firm believer in the concept that fluorescent plastics can be used to not only differentiate products and drive sales, but enhance the performance of many parts by increasing their visibility or giving them a unique look.

In safety devices, for example, Bender sees a huge market for fluorescent plastics in such areas as traffic signs and highway guardrails, where their ability to glow in the dark or be seen through fog and rain would provide the benefit of enhanced visibility to motorists. Fluorescent colors have, of course, made inroads here, notably in safety gear worn by road workers, but he sees much more potential. Bender also believes that release handles molded of fluorescent plastics and installed in car trunks could be used by children to free themselves if accidentally trapped.

Security cards are another market. Here, he says fluorescence can be used to prevent counterfeiting. By exposing a card to UV light, fluorescent patterns can be raised that would confirm its genuineness and make it virtually impossible to counterfeit.

He has even developed a concept whereby a fluorescent beverage bottle can be used to block light and keep a soft drink cool. Bender declines to reveal details, saying he is in negotiations to supply the technology to a major beverage company.

**Industrial designer** Rolf Bender sees a huge market for fluorescent plastics.

In a more common application, Bender points to signage as a key market for fluorescence. Fluorescent signs, he contends, illuminated by a "black light" or even the sun, can replace neon with few, if any, tradeoffs in eye appeal. They would, moreover, be easier to fabricate and handle, and would offer cost-savings.

Bender not only designs products, but formulates his own fluorescent materials, which he develops from a number of sources. These include minerals and stones, byproducts from wine production, vegetables, and silkworms, as well as conventional pigments. Depro offers a line of colors called Plastilight, which can be supplied as pellets or as rods, tubing, shapes, or "strings," the last being similar to the glow-in-the-dark novelties sold at sporting events and concerts. Fourteen colors are standard, and custom colors are an option.

Among applications for Depro's fluorescent resins is the "Viva Comet," a molded German music award; an ornament on the roof of Caesar's Magical Empire in Las Vegas; and various toys and novelty items.

He works with all types of plastics, and says there are no restrictions in resin use when it comes to fluorescence.

Bender has been involved with product design for almost 40 years. He began as a wood modeler, and has been working with plastics for the past 30 years. Apart from his work with fluorescent colors, he has designed mainstream plastics products like bath fittings and various types of packaging.

One notable development was a bowling pin that replaces wood. The pin is blow molded of polypropylene and has a foam core. Certified for use in the U.S., Bender claims it duplicates the center of gravity of a wood pin and even the sound it makes when hit by a bowling ball.

Bender also played a role in the design of the Australian dollar, reportedly the first currency bill made entirely of plastics, though he declines to reveal details.

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