

## DH Product Design

Strength and Versatility for Lighting Design Using KYDEX® 110

### The Company

A graduate of Goldsmiths College, University of London, David Henrichs knew early in his career that he wanted to design for a mass market. Today his company, DH product design, is based in London, UK and in Munich, Germany and specialises in sculptured lighting and light objects. His innovative lamp designs, which have been featured in *Vogue* magazine, combine geometric and natural forms to create a look that is modern yet organic.



For Henrichs, one of the keys to designing for the mass market is *simplicity* — one component made from one material using one process — and a perfect example is his ‘3Star’ lampshade.

### The Challenge

Finding a plastic material that has the right physical properties and is also cost-effective in small quantities was a major challenge in bringing the ‘3Star’ to market. While there was no shortage of research materials and resources, it was difficult to find good technical information about sheet polymer products. When Henrichs tried to get data sheets or speak with engineers at manufacturing companies, he got only limited advice.

Another difficulty was the initial target of producing about 2,000 lampshades per year — a quantity too large for DH product design to make in house, but small in terms of mass production. Initial research showed polymers to be expensive and required large orders by many of the companies that produce them. Polycarbonates, too, were only available in large quantities.

### The Solution

When Henrichs attended the In-Store Show in London in 2006 and 2007, he connected with Ronn Cort, International Business Manager for KYDEX, LLC, which manufactures KYDEX® thermoplastic sheet. “It was clear that KYDEX understands a designer’s perspective and the need for us to work with and learn about a material,” according to Henrichs.

“Ronn offered to send me samples so I could experiment with the KYDEX® sheet and see how it would work with my design and different cutting technologies,” he said. “For example, if a material is too soft, the corners won’t hold their shape; if it’s too rigid, pieces might break off.”

Manufactured by KYDEX in its ISO 9001:2000 and ISO 14001 certified facilities in the United States, KYDEX® sheet is available in specialised grades to meet specific requirements for a wide range of demanding applications. For the ‘3Star’ lampshade design, Henrichs eventually chose KYDEX® 110 metallic sheet for the advantages it offers him:

- KYDEX® 110 provides a unique combination of formability and breakage resistance, for a durable end product. It can be shaped and cut through a variety of methods — allowing for ergonomic design with no sacrifice to the strength of the end product.
- Among the most rigid thermoforming materials, KYDEX® 110 has a modulus of elasticity of 2,450 MPa (356,000 psi). “It has the perfect rigidity combined with flexibility, so it can be shaped without breaking,” said Henrichs.
- KYDEX® 110 does not contain plasticisers/UV stabilisers — compounds that help to soften plastic but eventually leach out and leave the material susceptible to brittleness and breakage.
- Fire-rated KYDEX® 110 meets regulatory requirements for fire retardancy, satisfying compliance standards around the world.

#### KYDEX, LLC

ISO 9001 and 14001 Certified

#### Customer Service

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### The Solution

- KYDEX® products are available in a wide selection of standard colours, textures, and patterns, as well as custom colours. The standard colour that Henrichs chose, Lemon Star, was perfect for the '3Star' lampshade. "It's a beautiful material that works well with energy saving light bulbs, producing a lovely yellow translucency," he said.
- Durable KYDEX® sheet is also resistant to scratching, cracking, discolouration, and other surface damage — enabling products to withstand the test of time and use.
- KYDEX's ability and willingness to do small manufacturing runs economically make it an ideal choice for companies such as DH product design. "KYDEX was the only company in the polymer industry that would deal in a truly helpful way with this type of small-scale project and take the time to understand my needs," according to Henrichs.
- All KYDEX® thermoplastic sheet products are 100% recyclable and produced with a regard for safety, health, and environmental protection — a plus for green designers like Henrichs.

### The Results

Working with the KYDEX® 110, Henrichs was able to prototype the '3Star' design at his company and then hand it off to a plastics cutting company for fabrication. Today the '3Star' lampshade is available online as well as through DH product design, and it is drawing rave reviews.

While the shades are currently produced using an oscillating knife, Henrichs is investigating laser cutting to improve the ability to make small curves — and again, KYDEX® 110 offers an advantage: While some hard polymers burn when subjected to laser cutting, that is not the case with KYDEX® products.

Henrichs will also be using KYDEX® sheet for his upcoming '4Star' design. "I hope to continue to use KYDEX many times," he said. "It's a brilliant product and a great company."

For more information about KYDEX® 110 or the application developed for DH product design, please contact Ronn Cort, International Business Manager, at +1.570.387.6997 x584 or by email at [cort.ronn@kydex.com](mailto:cort.ronn@kydex.com).



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