

SENZ Takes the Market by Storm and Fashions New Umbrella Designs in 3D with SpaceClaim

SENZ was started in 2005 by Gerwin Hoogendoorn who, as an industrial designer, felt there was an opportunity to create the ultimate, storm-proof umbrella. The standard design of umbrellas had not changed in decades and the prior generation of products often fails in high winds and driving rain, turning inside out, or collapsing.

Gerwin and his partners, Gerard Kool and Philip Hess, felt there was a solid market opportunity for SENZ Umbrellas – never anticipating the enormous demand that would result. Based in the Netherlands, SENZ designs the umbrellas and all the components and then works with a manufacturing partner in China – where 95 percent of the world's umbrellas are produced.

While designing and producing umbrellas may seem fairly simple, their lack of rigidity and the subtleties of the manufacturing process mandate rigorous physical, as well as virtual, prototyping.

ABOUT SENZ UMBRELLAS

SENZ Umbrellas was founded in 2005 by Gerwin Hoogendoorn who, as an industrial designer, decided to take on the challenge of creating a better umbrella to withstand driving rain and very high winds. Gerwin was soon joined by partners Gerard Kool and Philip Hess. Since introduction, SENZ has developed three product lines, shipped hundreds of thousands of umbrellas, won numerous design awards, and been selected by totes to be distributed in the U.S.



THE DESIGN CHALLENGE

Enable concept collaboration among designers and make design updates and edits without the complexity of feature-based CAD

Innovation at SENZ never stops. SENZ umbrellas have won many international design awards and the Company now has three models in the market — SENZ Original, SENZ Mini, and SENZ XL. The SENZ umbrellas — unlike standard designs — can withstand winds up to 70 miles per hour. While Gerwin was experienced using SolidWorks as a powerful CAD tool, he realized it is not optimized for conceptual design or collaboration among designers. SENZ outsources the detailed design to their manufacturing partner in China. All the conceptual design work happens at SENZ and the Company needed a solution that would easily enable every team

member designing new models to collaborate and edit prior designs, regardless of who created them. Another requirement was easy integration with the SolidWorks CAD solution in China for rapid prototyping and final detailed design.

"We started without commercial experience, launching SENZ right after our University graduation. We didn't have the expertise to engineer molds ourselves. SpaceClaim® lets us focus on what we're best at — industrial design — and we let our manufacturer partners take care of the rest," says Gerwin Hoogendoorn, Co-Founder, SENZ Umbrellas.

Gerwin and his team take great pride in the esthetics of their umbrellas, so visual representation of designs, while in process, is also important to the overall success of their operation.

SENZ CHOOSES SPACECLAIM TO ENHANCE CONCEPTUAL DESIGN

SENZ is growing rapidly having shipped hundreds of thousands of umbrellas globally and increased their design staff in the Netherlands to close to 20. In fact, their first run of 10,000 umbrellas in 2006 was sold out in nine days. The umbrellas are available worldwide through retail outlets and distributed in the U.S. by totes. Competition remains fierce and Gerwin and his team know the importance of innovation to keep their products in demand.

The design-to-manufacture process SENZ employs starts with conceptual design of specific parts of the umbrella, which are then sent to the outsourcer in China as Initial Graphics Exchange Specification (IGES) files. The manufacturer uses SolidWorks and manufacturing software to create a Computer Numerical Controlled

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(CNC) sample or other rapid prototype of the parts to show the SENZ design team how it will look when it comes out of the mold. The samples are sent back to SENZ where they are assembled to identify any issues or changes that have to be made for the product molds, which can have a lead time up to 45 days.

"For my generation, feature-based CAD is the standard. But SpaceClaim does the job perfectly for the concept phase."
Gerwin Hoogendoorn

SENZ has adopted SpaceClaim's 3D Direct Modeling solutions to create new designs, such as new umbrella handles. The total umbrella can involve hundreds of different parts. All concepts are worked on by every designer and SpaceClaim has enabled easy collaboration and editing of prior detailed designs.

SpaceClaim interoperates with major CAD systems, such as SolidWorks, providing SENZ with a tool that bridges the gap between concept design and final detailed



SENZ offers three sizes of umbrellas, each with their own engineering and design requirements.

designs. Feature-based CAD products are very powerful and perform well for detailed design work. However, they are not appropriate for conceptual design, engineering analysis, and simulation-driven design. SENZ has found SpaceClaim to be very easy to learn and use, cost effective, and very accurate, enabling digital 3D conceptual designs by the whole team and improving innovation and collaboration.

"SpaceClaim is a very good tool for concept design at SENZ because we are not bothered by a history tree. SpaceClaim eliminates errors and creates freedom."
Gerwin Hoogendoorn

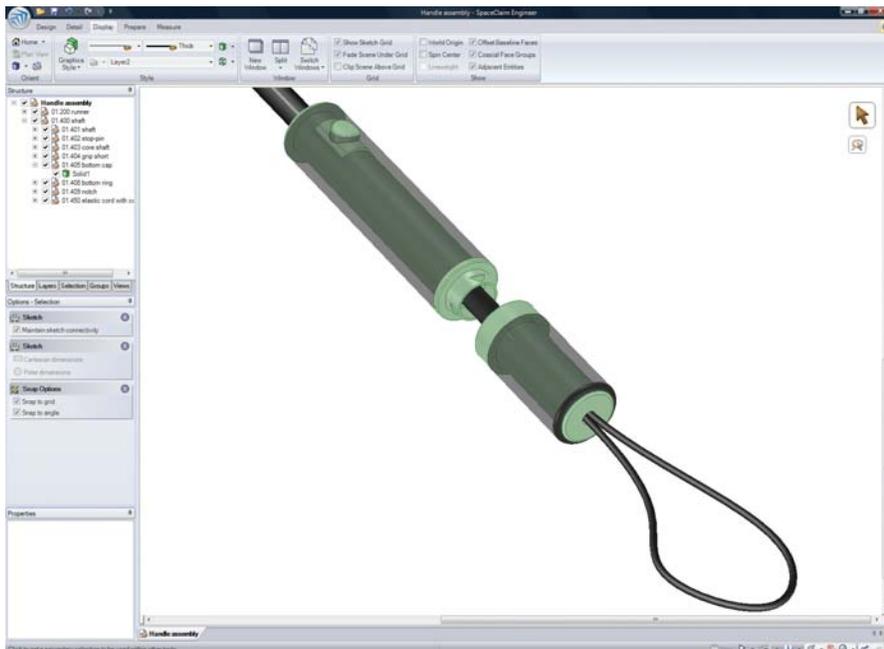
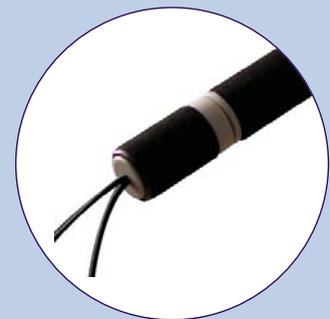
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Gerwin Hoogendoorn
Co-Founder, SENZ Umbrellas



SENZ outsources design-for-manufacturing.

Issues that never appear in the 3D design, such as an emblem marred by the mold, may have a greater bearing on the overall design than manufacturing features such as draft.



SpaceClaim allows SENZ engineers to move their designs forward without being constrained by legacy design intent.



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