

PRESS INFORMATION

Reinventing the wheel – robust, recyclable e-cargo bikes

Requirements on the materials used are just as varied as the possible uses of the bike. The award-winning e-cargo bike from the Mocci brand utilizes the numerous advantages of high quality, hardwearing injection-molded components. By using EMS' high-performance polymers for all structural components, CO₂ emissions and the number of components are significantly reduced. At the same time, regular maintenance intervals are no longer necessary and recyclability of the product guaranteed. The result is an overall product that is both sustainable and economical.

Innovative and stable design

The demands made of urban e-cargo bikes are high: They must be able to transport people and loads safely and comfortably. EMS high-performance polymers make it possible to develop structural components satisfying these high requirements with regard to robustness and durability. They provide a wide range of design and surface options that are not only functional, but also aesthetically pleasing. This flexibility opens up new possibilities in product design and makes a decisive contribution towards uniqueness of the e-cargo bike. The entire frame, front and rear rims, fork and seat post are made of EMS high-performance polymers.

EMS as development partner

Thanks to close cooperation between our application department center engineers and customers' development teams, the development process was significantly optimized. Functional integration allowed the total number of components to be greatly reduced, resulting in leaner and more efficient production. The components require no post-processing and can be transferred directly to final assembly without any additional painting steps. The result is a highly attractive manufacturing process that not only meets increased demand, but is also economically convincing.

Sustainability through quality

This product design sets new standards with regard to sustainability. Compared to conventional aluminum frames, 65% less CO₂ is emitted during the manufacture of an injection-molded frame using our high-performance polymers. Use of Grilon and Grivory grades make it possible to produce lightweight yet robust components, minimizing both energy consumption and environmental impact. The high-performance polymer materials, especially modified for the customer, are UV-resistant and therefore ideal for outdoor use. They are also inherently rust-proof and extremely hard-wearing, which drastically reduces maintenance intervals. Broken spokes, for example, are a thing of the past, resulting in less downtime and lower operating costs for end users. At the end of their service life, EMS high-performance polymers are fully recyclable, extending the life cycle of the components and contributing to a circular economy. For the customer, this results in an impressive overall recycling rate of 95%.

Summary

The success of this project is the result of close cooperation between innovative customers who challenge existing concepts, and future-oriented system solutions from EMS. The resulting savings in cost, energy, weight and resources offer the customer significant added value.





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