

DESIGNING A SAFE AND COMFORTABLE SUPER-PEDELEC FOR SPAAC MOTORIZED BICYCLES

Bridging the gap between
Speed-Pedelec and motorcycles

spaac s7

The Dutch market has been seeing an growing interest in electric bicycles in recent years. While the trend was propelled by elderly wishing to use a bicycle longer, the e-bike market has shown the potential to loose its stigma and expand to people of other age-groups. The urban commuter as a target group demands for a faster and more attractive type of electric bicycle: from Pedelec (<25 km/h) to Speed-Pedelec (<45 km/h) to a bicycle that can keep up with other motorized vehicles: the **Super-Pedelec** (over 45km/h).

Spaac, a young Dutch company that designs, produces and sells motorized bicycles with a unique timeless appearance based on early 1900s motorcycles, wants to explore the possibilities to add a Super-Pedelec to their product line. The

Spaac S7 is able to reach speeds up to 70 km/h which requires a re-evaluation of comfort and safety measures. While Super-Pedelects are not allowed on Dutch roads yet, this thesis dives into the possible future of Super-Pedelects and how their comfort and safety are assured and increased compared to the current pedelecs.

The final design for the Spaac S7 achieved this by revising the frame (stiffness, seating position), suspension, road holding, ergonomics, visibility and power.



Piet de Vries
Designing a safe and comfortable Super-Pedelec
29/08/2018
Integrated Product Design

Committee Dr. ir. Sacha Silvester
ir. Sebastiaan van den Elshout
Company Spaac motorized bicycles
Jurrit Hollands & Jos Ramselaar

spaac
MOTORIZED BICYCLES

TU Delft