

External protection pads for motorcycle race suits

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Damen Leathers is a company which designs and produces motorcycle protective gear for tour-, race- and professional purpose. For the race suits of Damen a new design of the external shoulder pad is made. The current protection pad is a standard pad which they purchased from an Italian manufacturer. However, because multiple competitors use the same pads and because the design is considered outdated, Damen wants to use a unique, distinctive pad.

It is essential to ensure and substantiate the five pillars for a good design process:

1. Safety: i.e. user protection
2. Ergonomics: i.e. user comfort
3. Aesthetics: i.e. user appeal
4. Marketing: i.e. brand representation
5. Production: i.e. Feasibility estimate

The feasibility could not be fully researched, because of the timeframe of this assignment and became merely a suggestion.

The main question for this assignment is:

How can safety, quality and sportiness be suggested in the design of external motorcycle protection pads?

A product-function analysis is done find out what the exact functions of the pad are and what are the stakeholders for each function. Also research is done into the kinds of motorcycle protective gear and more specifically what kind of protection pads exist for motorcycle gear.

The target group for this assignment is deemed to be sporty riders. Only the gear that sporty riders wear is suited with external protection pads.

The current pads of Damen do not meet the demands and wishes of them anymore. Research is done to determine why these pads do not work and what can be improved. Damen mentioned that the design is considered outdated. This is proven to be due to the abundance of features. Besides that, a phenomenon called 'vertical illusion' ensure that the pads do not look aerodynamical and therefore clash with the sporty look of the suits of Damen.

Market research is done to find out what the competition uses and where Damen could fit and excel. Also is found out what production methods could be sufficient and a recommendation is done that injection moulding using PU is the most appropriate.

To answer the main research question an analysis is done into the concepts of safety, quality and sportiness. Safety appears to consist out of two things. Suggesting the technical safety has to be achieved in a different way than ensuring the perception of safety. Quality is a difficult to capture

concept. Quality can be suggested by visually influencing the volume, texture, symmetry and image of the brand. Sportiness is can clearly be visually represented. A sporty appearance can be achieved by using bright colours, high contrast and a combination of sharp edges and smooth curves.

An interview is done with 32 people from inside the target group to find out what they consider to look safe, sporty and aesthetically appealing in a shoulder pad. This resulted in multiple characteristics that are used for the sketches in the design phase.

The design phase consisted out of two parts. The first part is the design for the shape of the shoulder pad. Two co-design workshops are done to find out what the demands and wishes of Damen are. The first co-design workshop was to present the characteristics that followed from the research and analysis phases and to learn what their view is about this. From all previous founding the characteristics were collected and for each category of characteristics sketches are mad and later tested during the second co-design workshop. From this workshop three concepts are made.

The second part of the design phase was about the graphical representation on the pad. This design had to represent Damen and not loose the design choices for the outside of the pad. Multiple designs are made and suggested to Damen. The design that deemed to represent Damen best is combined with the design from the first design stage to form the finished design.