# TIC PROTECTION

Project Deliverable F: Prototype 2

Intro. to Product Dev. and Mgmt. for Engineers

GNG 2101 A02


**Group A6**

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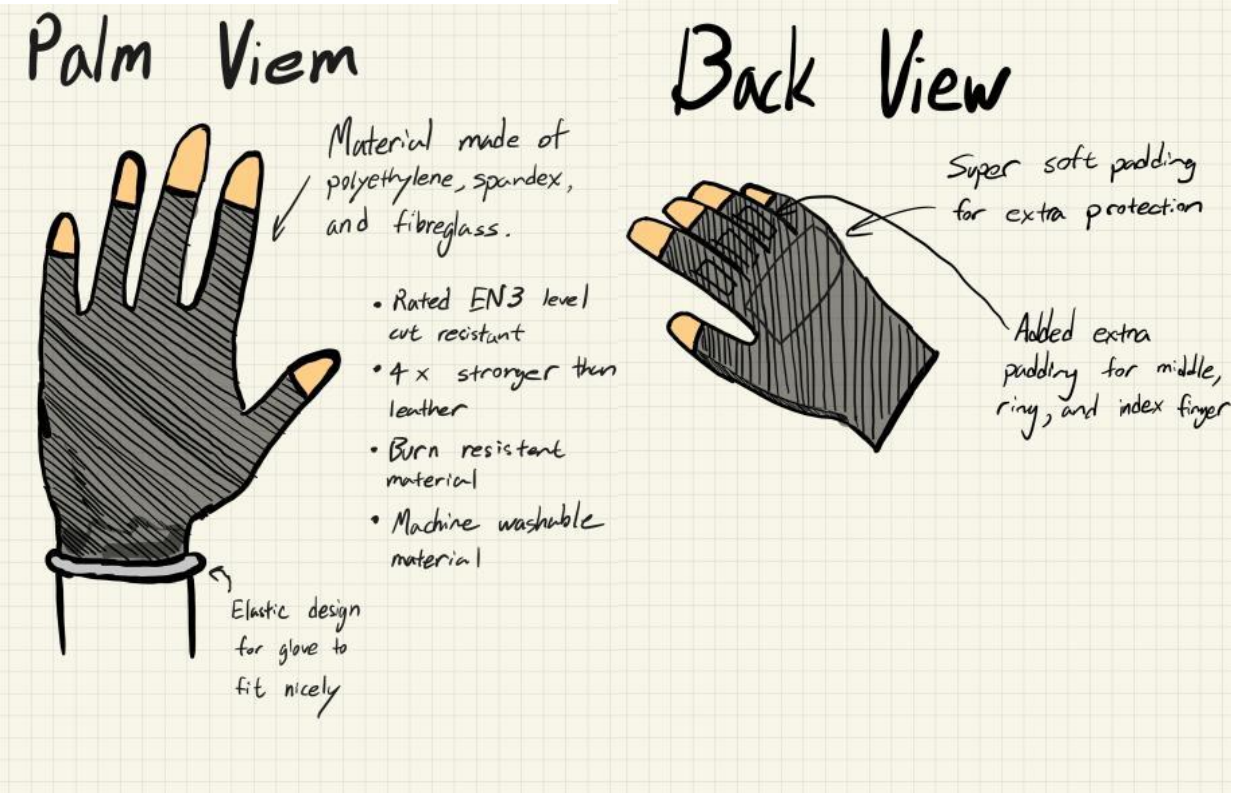
1. Summarize the client feedback that you received during your third client meeting for your first product prototype and clearly state what needs to be changed or improved in your design. State what needed to be changed based on the feedback, not what was actually changed.

Our client Madi was overall satisfied with the progression of our design and only had a few minor feedback on the design of our prototype. She stated that the second knuckle of the ring and middle finger needed extra padding to protect her from damages and injuries. Our team was not aware of this and only thought the middle finger needed protection. Our client also stated that the fingertips needed to be elastic and tight instead of a loose feeling. Furthermore, we asked whether she would like a grey/black color scheme for the final glove, which she approved. In conclusion, our group is developing the project in a timely manner and the client is overall happy with our progress.

2. Based on the feedback, develop a second prototype (or more) which will help you on your way to creating your final product.

3. Document your latest prototype(s) using as many sketches/diagrams/pictures as required and explain the purpose and function of your prototype(s).




Our second prototype used a new material that was more cut resistant and more breathable, as well as polyurethane foam instead of memory foam for the padding on the knuckles. The polyurethane foam has a high density, a temperature range up to 180 C and a thickness of ½". The thickness was doubled for the first knuckles for added protection. We also changed the location of the padding to better protect the knuckles.
The goal of this prototype was to really focus on quality padding to improve the blunt force protection from prototype 1. Also including some of the aesthetics that the client wanted, a more uniform color and material was chosen. As with prototype 1, having a durable and comfortable glove was another main focus for this second prototype.

4. Carry out prototype testing, analyze and evaluate performance compared to the target specifications developed in Project Deliverable B and document all your testing results and prototype specifications. Present your testing in an organized, tabular format that shows expected versus actual results (i.e. compare your measured prototype specifications to your original target specifications by including both in a similar table to the one your developed for Project Deliverable B).

| **Function** | **Expected** | **Actual** |
|---|---|---|
| Heat Resistance | >100C | Around 100C, more testing will be done to ensure the palm area is properly protected. |

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| | | The team is also looking into different materials to be added to the palm area for the final prototype. |
| Blunt Force Protection | >800N | Huge improvements from first prototype. Hitting different objects with different pressures feels very safe and protected. Must test with client for final feedback regarding safety level. |
| Durability in washing | Machine Washable | Held up through the wash without losing integrity of design/fit. |
| Fit of the glove | Up to client | No feedback from client yet. Although the glove was worn for a long period to test comfort and movement. The glove was slightly rigid due to the density of the foam added. Modifications will be included in the final prototype. |
| Cut Resistance | Index 2 | The material has a high resistance to both abrasions and punctures. EN3 level cut resistance. Used a carrot with sharp object to test resistance to cut, passed test. |

# Project Plan Update