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INDUSTRIAL DESIGN



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CONSCIOUS SKI GLOVE

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ABSTRACT

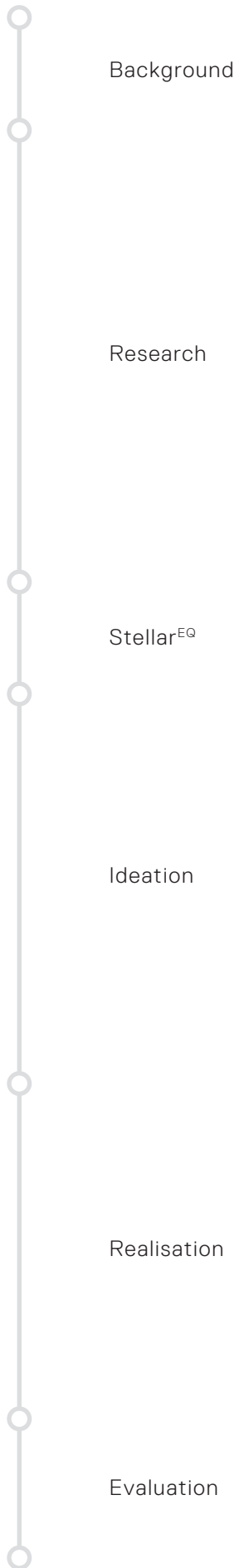
The background or idea of this project came from when I was living in Chamonix, France, for two winter seasons where I skied and climbed. During this time, I saw how much humans really do affect the environment.

This in turn made me want to investigate what sustainability is and how we, as future designers, can influence this subject. The investigation revealed that the key to a more sustainable world is making use of circular economies and long-term thinking.

It is not only the product's material that should be taken into account but also, for example, how it could be made easier for users to take care of, repair and recycle the product. It shows the importance of taking all the different stages of a product's life-time into consideration and to design for user's needs rather than for designers own aspiration or taste.

The conclusion of the sustainability research was then implemented in the project using design methodology to design an alpine pro ski glove for the company Stellar Equipment.

TIMELINE 10 weeks



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THERE IS NO PLAYING WITHOUT THE PLAYGROUND

In the interaction between the skiers and the mountains, the skiers struggle with their own global warming impact. By traveling all over the world, using ski lifts which destroys natural habitats and using unsustainable products the skiers affect this beloved snow-capped environment they wish to preserve.

By the foot of the highest mountain of the Alps, Mont Blanc, lies the town Chamonix. This is where modern mountaineering was born and is still today considered one of the world's most important alpine metropolises.

In February 2020 this photo was taken capturing the condition of glacier *Mer de Glace* located in Chamonix. It has never looked this bad.

Mer de Glace is rapidly melting away. Since 2005 a lot has happened. This magnificent place shows the effect of environmental change and soon we won't be able to ski and play here as we do today.



↑
Glacier *Mer de Glace* located in Chamonix

GOALS

Sports and the outdoors have a special kind of power. The power to fight what holds us back and the power to make us feel connected with nature and one another.

When I am outdoors, using the forces of nature in sports such as sailing and skiing I feel alive and unstoppable. My passion for nature and extreme sports has taken me all over the world. I have sailed in most of Europe, surfed in Costa Rica, climbed in Italy and lived for two years in Chamonix, France in order to ski and climb.

During my two years in Chamonix I understood for the first time how much we humans really affect nature. The glaciers melts away in front of our eyes and the air in the valley has become so bad I each year developed very bad coughs.

When given the opportunity to choose the topic for my bachelor project I was determined to focus on the impact of extreme sports and it's equipment on delicate ecosystems. My goal is to explore how designers can decrease the negative impact of their products on the environment.



1

Gather a greater understanding about sustainability.



2

Investigate how we as designers can influence the sustainability aspects in product design.



3

Apply the findings of sustainability in this project as much as possible.



USER

Alpine pro skier

Alpine pro skiers are people such as mountain guides, freeskiers, ski instructors or others who require a high performance from their equipment.



LOCATION

Backcountry mountains

The backcountry mountains are pure nature far away from civilization. The environment is demanding and the weather conditions can be extreme and change rapidly.

INITIAL BRIEF

”Shift users attitude towards products life cycle, within the sport outdoor industry”



SUSTAINABILITY?

Sustainability is a phenomenally large concept that can only be vaguely defined. In this project, the concept will be defined in the same way that the UN presented the concept in the Brundtland Report in 1987:¹

“Sustainable development is a development that satisfies today’s needs without compromising the ability of future generations to meet their needs.”

This research will explore how this development can take place and what actions we as designers can take to design more sustainable products and in the long run achieve a more sustainable world.

LINEAR ECONOMY

Since the birth of industrialism, we have had a so-called linear economy. An economy where we take from the planet's resources in order to produce, consume and finally throw products in the waste bin, only to end up in landfills or the ocean.²

Could it be that the traditional way of linear economics is approaching its limit? The current system no longer seems to work for the environment and in that case, probably not in the long run for companies and their customers either.

The sustainability provocateur and designer Leyla Acaroglu, like many others, including Victor Papanek in his book "The Green Imperative" advocates a circular economy to achieve sustainability and that the transition from a linear to a circular economy needs to be accelerated.³



Sourcing



Production



Usage

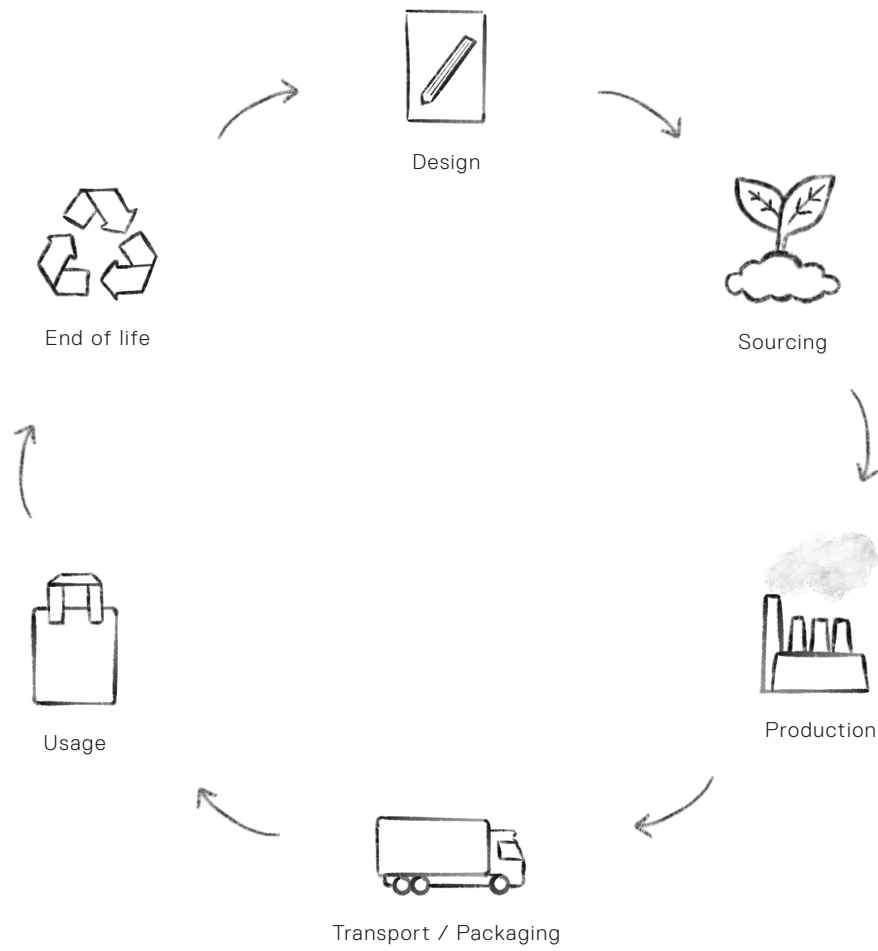


Waste

CIRCULAR ECONOMY

A circular economy promotes minimizing waste and returning products back into the ecosystem or the technical system, where materials and products are recycled back into the loop and eventually becomes new products.⁴

By designing for a circular economy, innovation can take place where we as designers have the opportunity to open up to an economy that can benefit everyone and which uses our planet's resources more reasonably.



LIFE CYCLE ASSESSMENT

Life Cycle Assessment often called LCA is a well know method to analyze the full impact of a product or service during it's full lifetime. This includes the source of material, production, transport and packaging, usage and waste management.⁵

Waste and contamination are not accidents that just happen, it is largely the consequences of decisions taken at the design stage. The Ellen MacArthur Foundation believes that around 80% of the environmental impact from products occurs at this stage.⁶

In each of these stages we also have to consider environmental, social and economic factors. All these three complex systems have to work side by side and benefit each other to really achieve sustainability.⁷



SUSTAINABILITY CONCLUSIONS

To be considered sustainable, a product or service should exhibit a reduced environmental impact considered over its entire life-cycle, from the extraction of raw material through to production, transportation, packaging to usage and disposal. It should also provide environmental, social and economic benefits while protecting public health and the environment over that life-cycle.

Sustainability and its development are so large and all-encompassing that I have had to scale the concept down in order to apply the findings in this project.

By defining some requirements in each of the products life-cycle stages the project becomes more relatable to sustainability and easier to go forward with.

DEFINED REQUIREMENTS



Design

- Functions that are based on user needs and experiences
- Easier to disassemble for recycling purposes
- Durability and high quality to extend lifetime of products



Sourcing

- Recycled, natural or renewable material



Production

- Local as much as possible
- Renewable energy as much as possible



Transport / Packaging

- Reduce carbon offset in transport and shipping
- Packaging which promotes circular economy
- Reduce packaging



Usage

- Provide knowledge on how to care for products
- Easy to buy right size
- Total transparency of the products materials
- Possible to change or repair broken / worn out parts



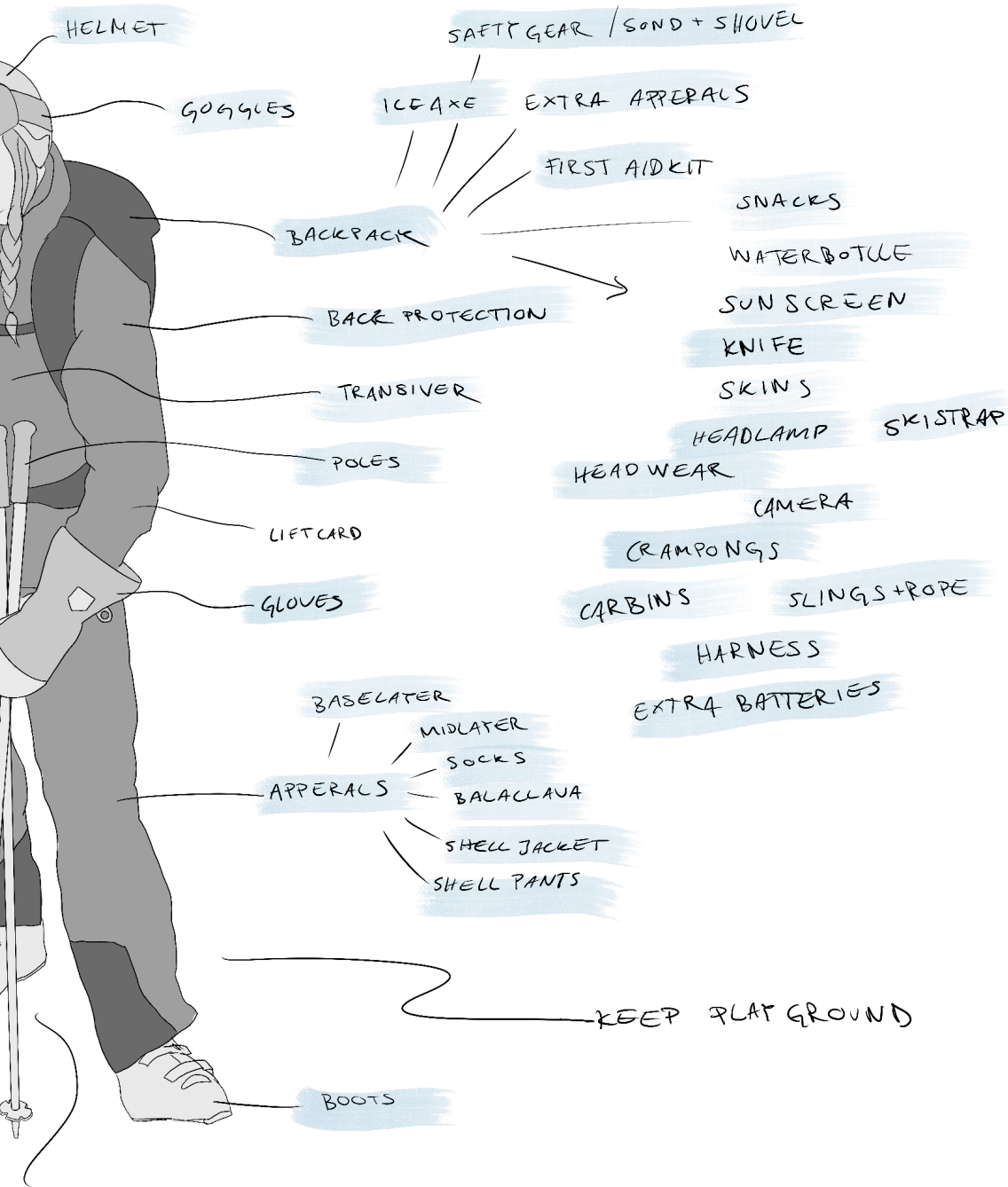
End of life

- Ship back to company for recycling



USER NEEDS

ACCESS TO MATERIAL
↓
WHEN SKIING



CUSTOMIZED

PRODUCTS BEING USED

Conclusion

From the user needs analysis it appeared that the alpine pro skier has a huge amount of products to be able to cope with the long days in the mountains.

The analysis continued gathering all the different equipment the alpine pro skier use during one day, for a better understanding of what's being used.

It was shocking how much it really was and how much money that was put into all the equipments.

Most of the products were neither made out of recycled nor renewable materials.

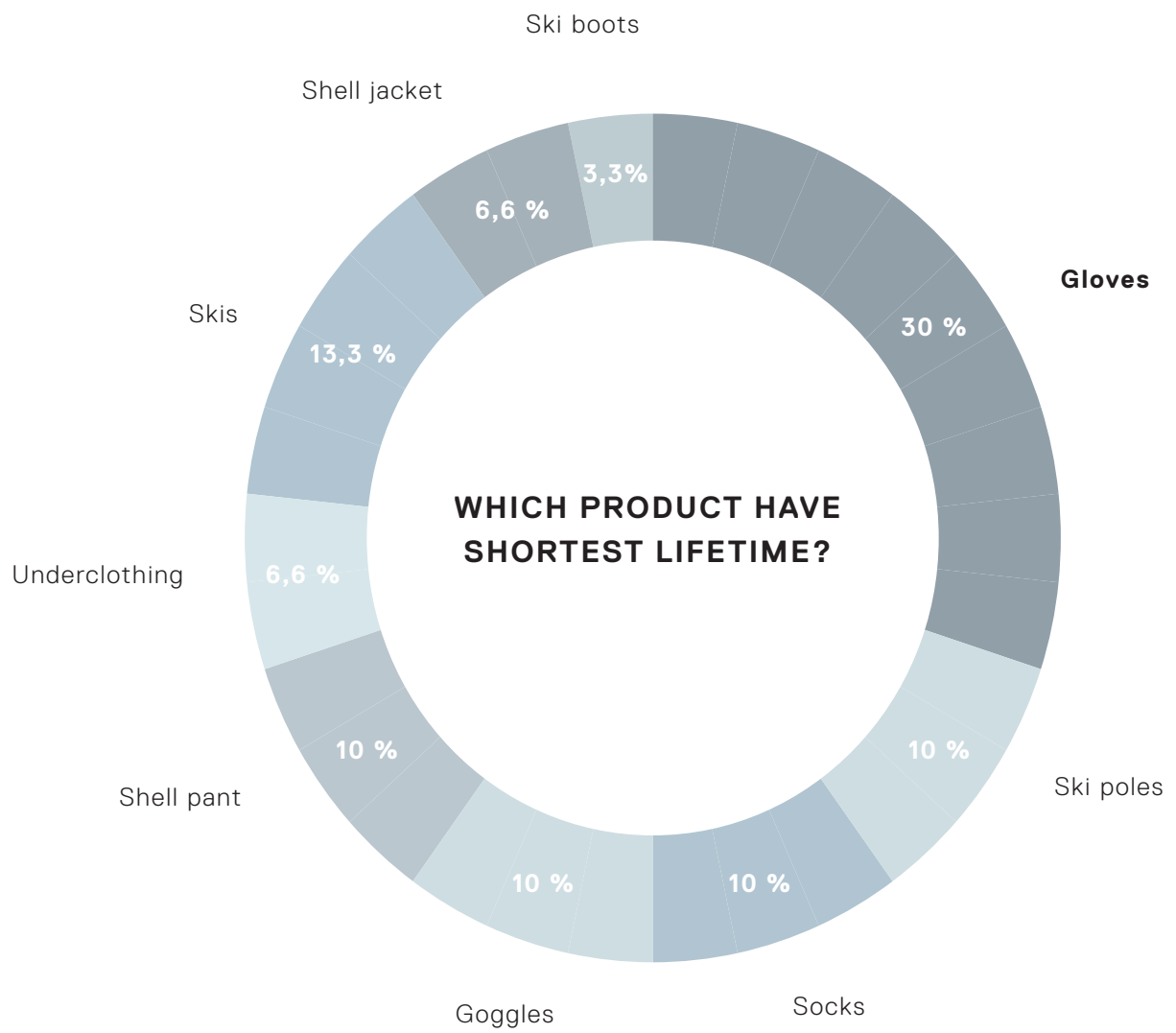


SURVEY

30 answers

A survey was done to understand which one of the alpine pro skier products had shortest lifetime in relation to how fast they wear out and are replaced with a new one.

30 % of the participants answered the gloves.



FINAL BRIEF

”Increase the sustainability
and the life-time of an alpine
pro skier glove designed for
Stellar Equipment”



INTERVIEWS

Interviews with two alpine pro skiers was done about what they think about sustainability, what requirements they have for a ski glove and what difficulties they have with existing gloves on the market.

Conclusions

The interviews showed that sustainability is important for both of the alpine pro skiers. They think about their own consumption but they experience that it can be hard to understand what's the most sustainable option when buying products. Both said it has become more easy the recent years because of the eco certifications a lot of brands have. But this is also being used in marketing to reach new target groups and to promote consumption.

The interviews also showed that ski gloves wear out faster if you don't take care of them properly. The wear also appears especially in the lower hand palm and on the outside of the index finger. The most important function in a ski glove the alpine pro skiers use is the fit and it must be perfect. Some kind of snow lock and the gloves should be easy to dry.



Johanna Stålnacke - mountainguide

- Sustainability is about preserving the environment and how we consume products but it is also a security matter for us guides working in the mountains.
- Today products have lighter weight because the market is asking for it but also means that products break more frequently.
- Skigloves wear out when carrying things like skis, snapping the boots, rope handling and holding ski poles.
- The critical areas that wear out is outside of the index finger and the palm.
- Care the leather with balm increase the lifetime.
- Important functions is the fit, fingers not too long, snow lock, innerglove in wool.



Jesper Petersson - professional skier

- Sustainability is durable products with high functionality. Products that can be used over several years. Many products are thrown away without a reason, which is sad.
- You see more eco certifications in many sport products in recent years which is good but at the same time it feels like a marketing trick to sell more and attract new target groups.
- Skigloves should be easy to dry, protect your hands from nature elements, durable, have hand-leashes so you don't lose them and the fit must be perfect so it is easy to work with them.
- The biggest wear of the glove is that I don't take care of them properly. I dry them over a hot radiator which causes the leather to dry out faster as an example.
- Reinforcement in the right places, outside the index finger, lower part of the palm and the area between thumb and index finger.

WHY IS THE GLOVE IMPORTANT?

An alpine pro skier is often out in the mountains from early morning to evening. This means it is critical the equipment they bring with them is performing as it should.

An alpine pro skier is during the day often physically pushing themselves very hard to reach mountain tops. When touring uphill the body gets warm and sweaty and on the top it is often windy and gets cold fast.

When the body gets cold the normal thing the body does is to rush the blood to vital organs, such as heart and brain. This means it is the hands and feet that gets cold first.⁸

If an alpine pro skier get cold hands in the middle of nowhere in the mountains, hours away from civilisation it can be life-threatening. The skier won't be able to work with the safety equipment such as avalanche probe, transceiver or shovel if an accident occurs. With cold hands the skier won't be able to handle the rope or iceaxe and the situation can become extremely critical very fast.



Touring



Ascent



Rope



Skating



Day of use

The analysis of the gloves used during one day showed the user often uses different gloves depending on weather conditions, environment and type of activity. It is established that the user often brings a pair of extra gloves in the backpack.

Climbing



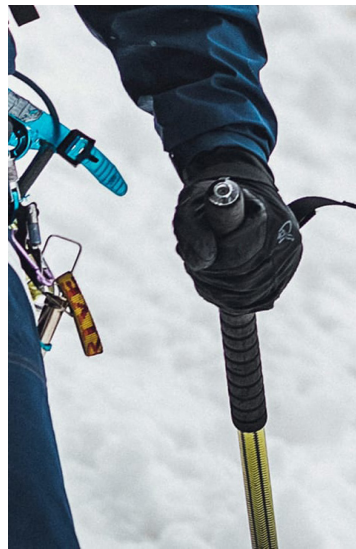
Carry skis



Rope / Weather

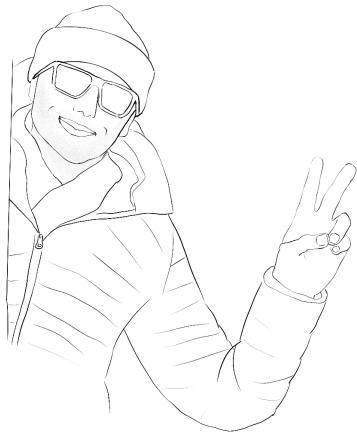


Holding pole



Day of wear

When and how the wear of the gloves appears have been analyzed during own observations, interviews and the previous survey.



INTERVIEW NR.3

Mikael Abrahamsson aspirant mountain guide

Mikael lives in Chamonix and is under training to become a mountain guide. We had a quick interview and he sent me pictures of his ski gloves he uses.

Analysing these gloves together with the interview with Mikael made it possible to map more exactly where the wear occurs on the gloves.

Another finding from this analysis was the reverse seams appears to be more durable in this type of gloves.



Visible seam



Reverse seam



MAPPING CRITICAL AREAS

To summarize the wear of the gloves some mapping was done on the hand to show where the critical areas occurs.

This mapping became the basis for continued work.



TAKING APART A GLOVE

With no knowledge about sewing or patterns I had to disassemble a glove to better understand patterns and how the construction is made.

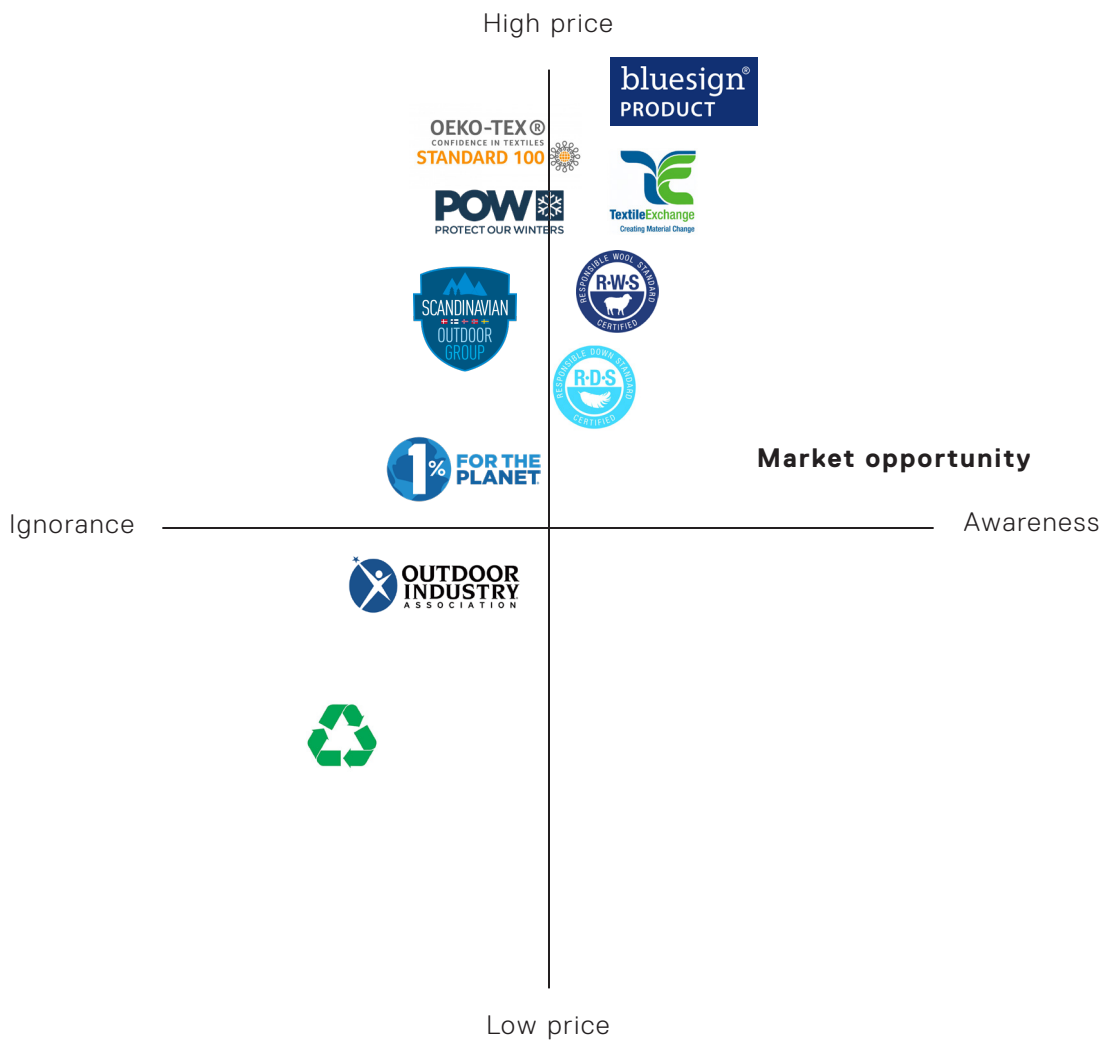
This made it easier for me understanding both the 2D and 3D visualization of a glove.



MARKET ANALYSIS

I analysed existing gloves on the market and how their prices relate to the aspect of sustainability.

The higher price the more awareness and third part certifications there was. I believe the third part certifications can make it easier for the buyers to choose the more sustainable option when buying a product but at the same time many companies use these certifications as a marketing trick to sell more and attract a new target group. So in some ways the certifications are good and in another it could be bad.



FUNCTION ANALYSIS

Main function

- Protect hands

Necessary function

- Fit hands
- Easy to dry
- Hand Leash
- Easy to buy right size
- Recycled, natural or renewable material
- Provide knowledge on how to care for the gloves
- Durability and high quality to extend lifetime of the gloves

Desirable functions

- Possible to change / repair broken or worn out parts
- Local production and sourcing of material
- Renewable energy in production
- As few different materials as possible
- System to ship back to Stellar^{EQ} for recycling
- Total transparency of the glove materials on Stellar^{EQ} website



STELLAR EQUIPMENT

This project is in collaboration with Stellar Equipment where the CEO, designer and founder Fredrik Dahl has supported and been giving feedback throughout the process. The gloves to be designed should fit into Stellars existing product line which means the market and target group are the same as theirs for the gloves to be designed.

The brand

Stellar^{EQ} create purposeful and sustainable product lines for the long-term, not temporary collections. Every product they create, down to the very last detail, is part of a technical layering system, finely tuned to perform during demanding physical activities in shifting alpine conditions.

Stellar^{EQ} believe that the best you can do for the environment (and yourself) is to buy as few products as possible. Buy less but better.

Stellar^{EQ} factories hold the highest standard in regards to quality, as well as environmental certificates and workforce ethics.



Values

- Stellar^{EQ} only sell through their own meta channels, that is, in their web shop or their own showrooms. This means they can have full control of the products, maintain a genuine and true dialogue with their customers, and they decide for themselves what factories, materials, products and colours they want to work with.
- Stellar^{EQ} only change a product if they find an even better material, or come up with an improved design. They never chase trends or collections.
- By cutting out the middlemen Stellar^{EQ} can sell great technical outdoor products at a good price.

Target group

Stellar^{EQ} design and produce world class technical outdoor equipment for themselves, and for anyone else who loves to spend their time in the mountains.

Price model

Sales are made directly from Stellar^{EQ}, directly to the user, without any middlemen. This means they can sell premium products at a fair price. Stellar^{EQ} have estimated they are limiting product transports by up to two thirds by using this price model. They also offset the carbon costs for all shipping, including transports to the buyers.

Bestselling products

The Stellar Shell Jacket and the Ultralight Down Jacket is Stellar^{EQ} bestselling products in their product range. The jackets have looked exactly the same since 2015, when the company was created.

STELLAR^{EQ} BESTSELLING PRODUCTS



STELLAR^{EQ} FORM LANGUAGE

Stellar's form language has sharp and clean lines and cuts which is easy to understand. It feels well thought through and the details are few but more obvious. Nothing feels like it is left to chance, all design is clearly chosen for its purpose. The logo of Stellar^{EQ} is always apparent.

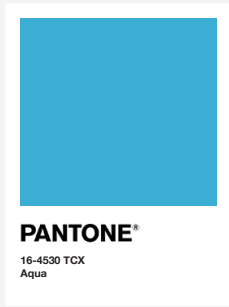


STELLAR^{EQ} COLOURS

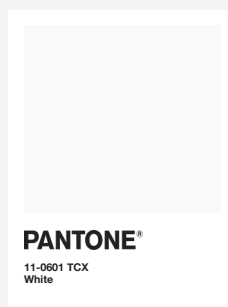
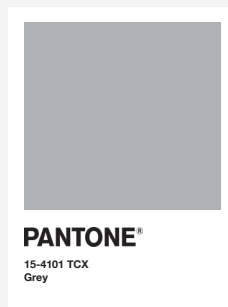
Stellar^{EQ} have a range of 12 colours that they never change. In relation to the environmental issue, this is more sustainable because it is easier to repair products after some years if the colours match and is still in production.

An analysis of which colours are more photosensitive was done during this project to get a better understanding of how the colours can be used more sustainable.

More sensitive



More resistant



Neutral



THE STELLAR^{EQ} GLOVE SYSTEM

Stellars idea and the whole DNA of the brand is all products they create, down to the last detail, is part of a technical layering system, finely tuned to perform during demanding physical activities in shifting alpine conditions.

In this project it seemed obvious the concept should follow this layering principle.

The concept became a family of three different gloves, in which each one of them can be used separately but mostly together.

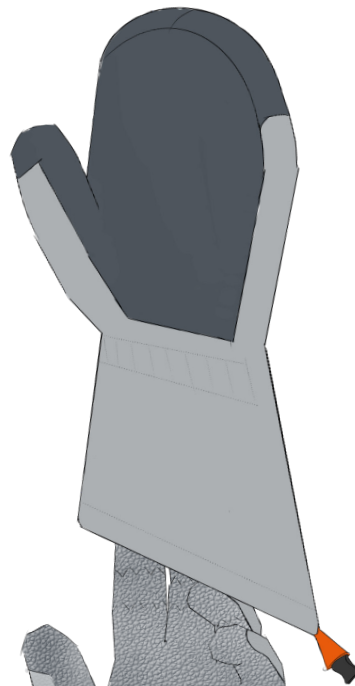
The idea is that you can replace one at a time for extending the lifetime of the glove when wearing them together.

It also makes it easier to recycle the gloves when the materials are reduced as much as possible.

The care and cleaning of the gloves in user perspective would be easier if each glove was made of one main material as well.

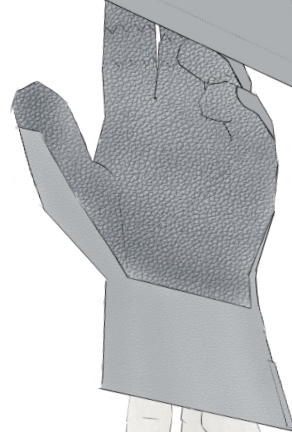
Shell

Extra protection / weather-resistant



Base

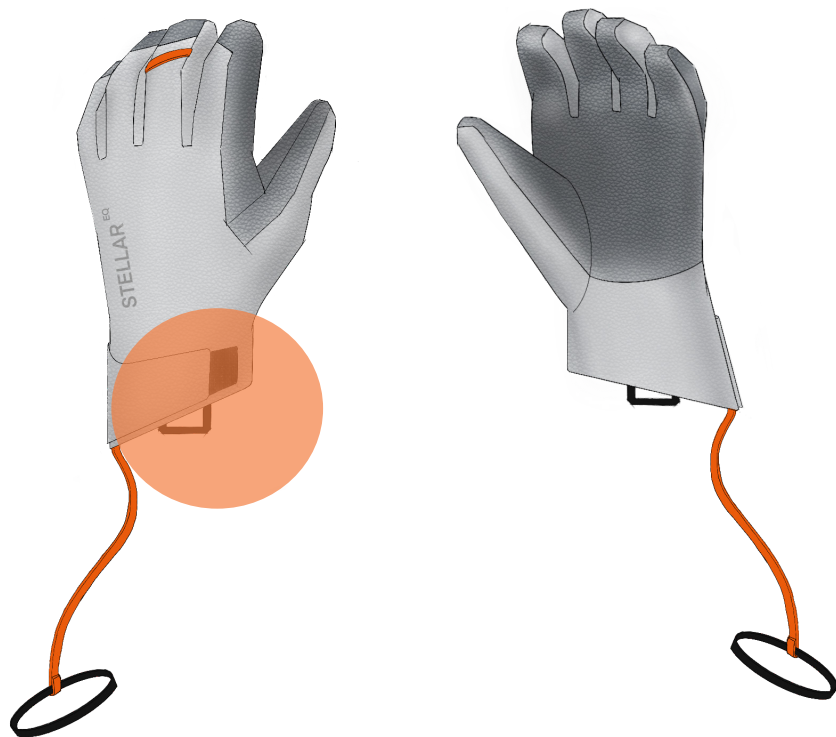
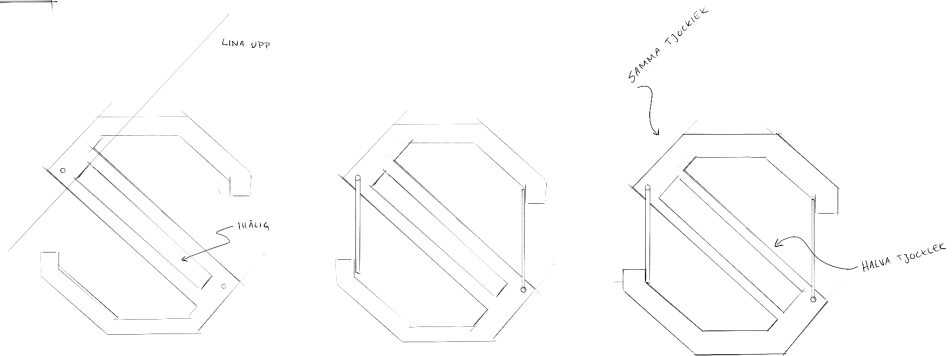
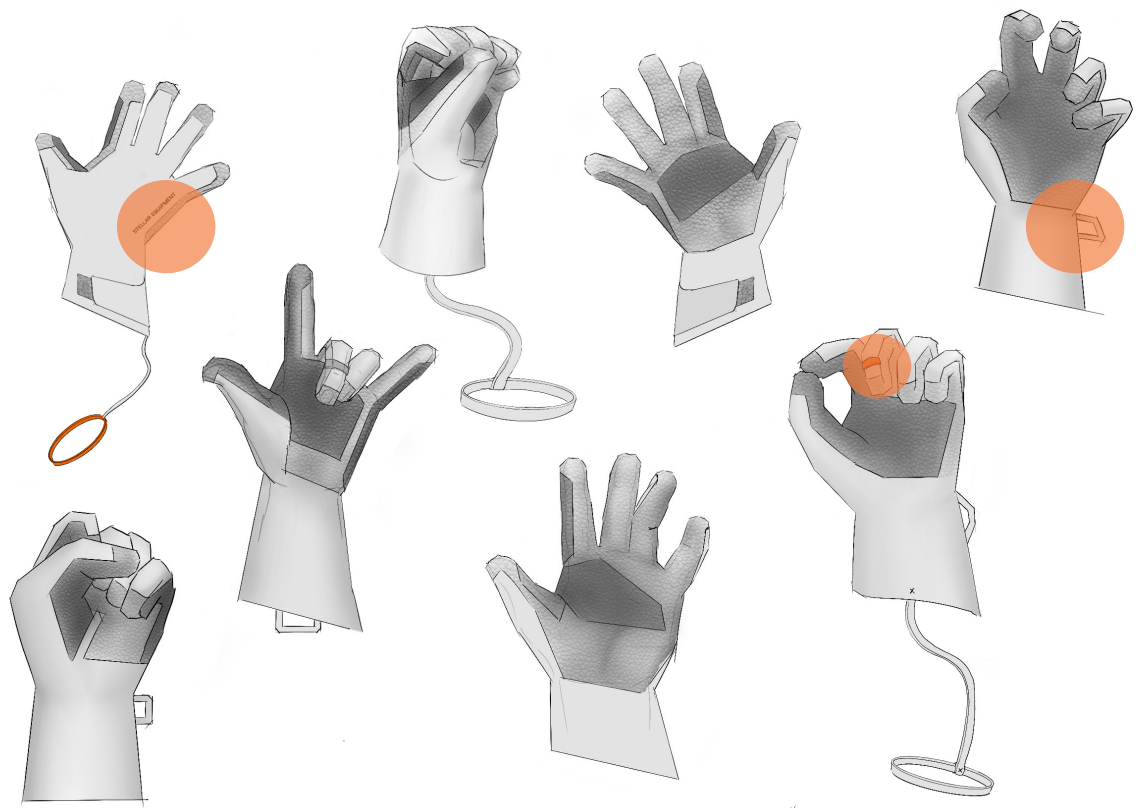
Durable / protect the hand



Liner

Warmth / keep right temperature

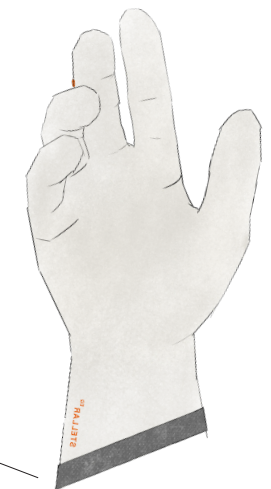
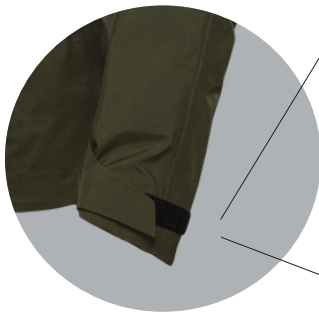
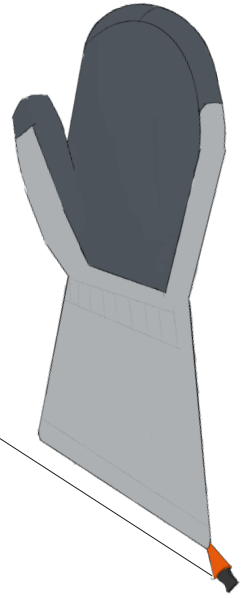
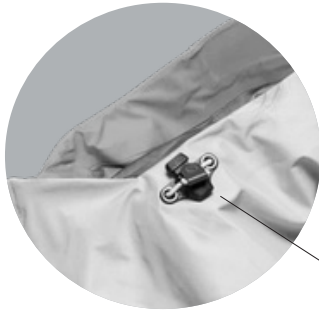




USING EXISTING PARTS?

By using parts of Stellar^{EQ} already existing production, production time and energy can be saved. It would also be fewer article numbers for Stellar^{EQ} to keep track of.

After talking to Fredrik Dahl at Stellar^{EQ} who has supervised me during the project I decided not to continue with this idea. This is because it could be hard to make it work in reality in this industry.





Mockups

A paper mockup scale 1:1 was done to better visualize the glove in 3D.

A leather prototype started to take form during one day in the sewing workshop.



COVID-19

Unfortunately the Covid-19 pandemic took place during this project and the workshops in the school closed. At this time in the project I had just got the licence for the sewing workshop and started with prototypes.

I had to make a decision on how to continue with the project regarding this situation. The most logical solution I saw was to take the chance of developing my computer program skills and do everything digitally.

New 3D program

Until now I had only used Autodesk Fusion 360 in earlier projects. This program is not optimal for this type of organic shapes or textile textures.

I therefore found a 3D program called CLO which is created for textile products, where you work in a 2D window, creating the patterns and sewing the patterns together in a 3D window.



↑
Early stage of the base glove in the CLO program

COLOURS

For the gloves to fit into the product line of Stellar^{EQ} the colour range being used is the same as theirs.

The choice of colors is based on previous analysis in the design process. The reason why two of the colours are from the more photosensitive group is due to studies shows if users feels connected with a product they will more likely take better care for it, which will increase the lifetime. Stellar^{EQ} is a colourful brand and put down lot of time in matching their products. This is something the target group seems to really appreciate. Another reason is bright colours are popping more and will give better visibility in the snow if the gloves happen to be dropped.



Blue - used on top of the glove



Olive green - used on top of the glove



Dark grey - used in the handpalm, which makes dirt not as visible and for the shell gloves



Light grey - used in the liners



White - used on top of the glove



Yellow - used on top of the glove



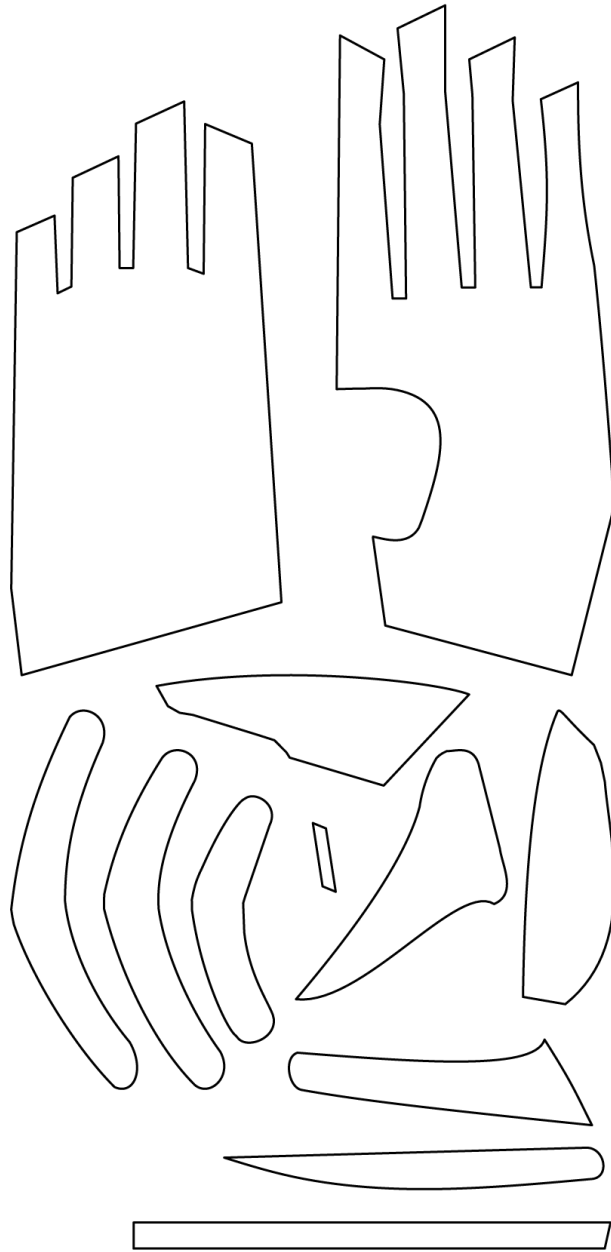
Orange - indicates parts with special function



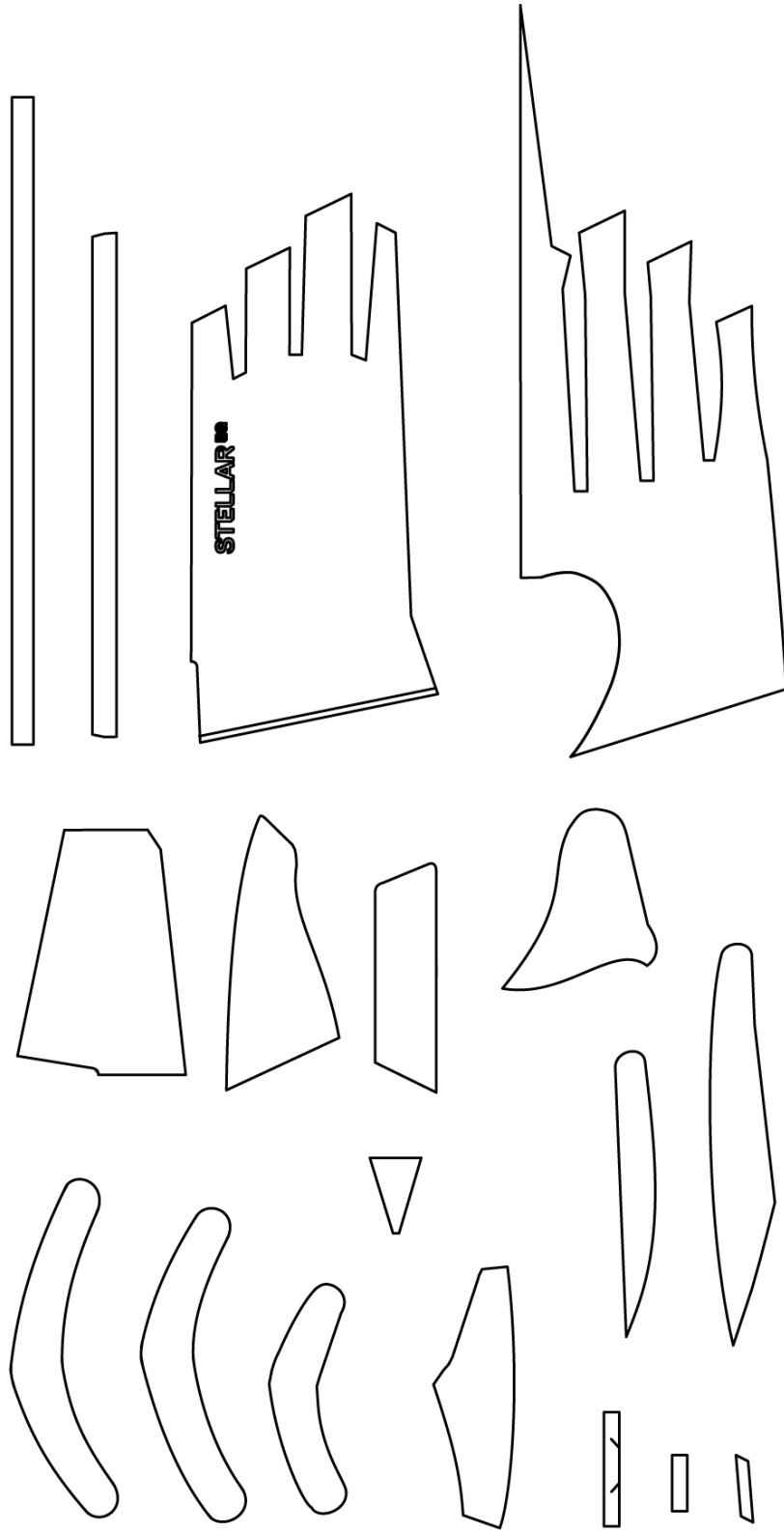
PATTERNS

Panterns for the liner, base and shell glove was created in the 2D window of the CLO program.

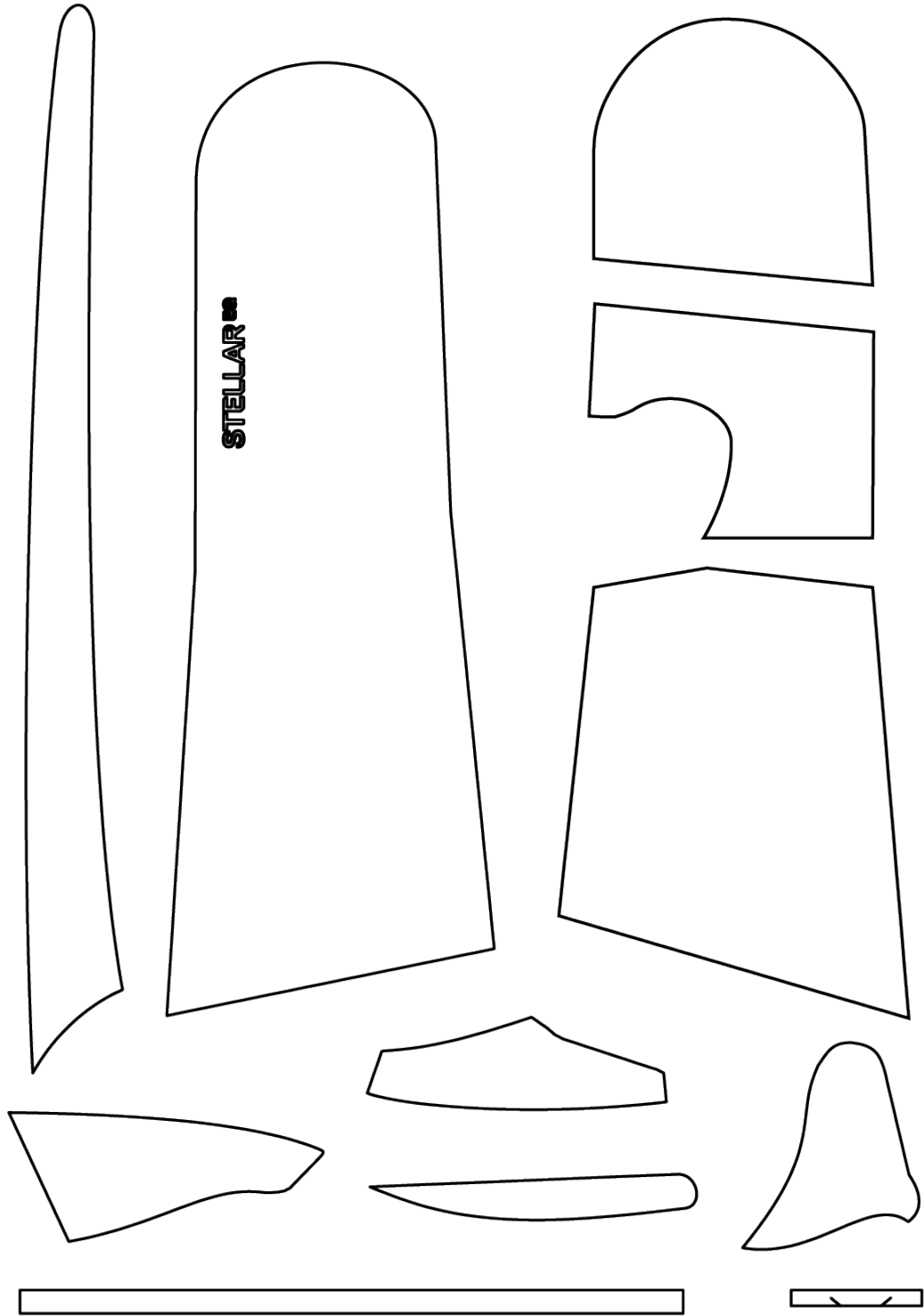
The size and measurments of the patterns are made after a medium sized male hand.



LINER



BASE



SHELL

LEATHER BALM STICKERS

Because caring for products is important for sustainability I illustrated some different versions of stickers for a leather balm jar, since the material in mind for the gloves is leather.



THE STELLAR^{EQ} GLOVE SYSTEM

The Stellar^{EQ} Glove System consists of three different gloves. They are designed to be worn together as a family but can be worn separately as well. Ideally the systems are bought together all three and after time replaced one by one when needed. So the user don't need to buy a completely new glove.

Shell - The shell gloves are waterproof with taped seams and stretchy 3-layer breathable fabric. Cover the liner, base or other gloves to add total weather protection. The shell gloves are ideal for the alpine pro skier in cold, mixed conditions. They seal out the elements while the alpine pro skier belay, are located on a windy cold mountain top or just want's that extra protection.

Base - The base gloves are entirely made out of goat leather for durability and with the right care the gloves can become a favorite for many years. Used together with the detachable wool lining gloves to add warmth. The base gloves are made for pro skiers everyday use in the mountains.

Liner - The liner gloves are made out of Swedish wool to keep the hand temperature just right for the alpine pro skier. Use the liners when touring uphill and add the base leather gloves when skiing down for perfect comfort. When the liners wears out replace it with a new one and keep the base and shell gloves to be more sustainable.



SHELL



BASE



LINER

LINER GLOVE MATERIALS

Renewable

Swedish wool - Natural 100 % wool

Sweden's sheep produce over 1000 tonnes of wool every year, but most just gets thrown away.⁹ Wool is an antibacterial material which means the user doesn't have to wash it as often and therefore saves both water and energy. By using the Swedish wool in the liners a waste becomes a resource. There are many benefits such as good animal welfare and reduced carbon footprint.

Recycled

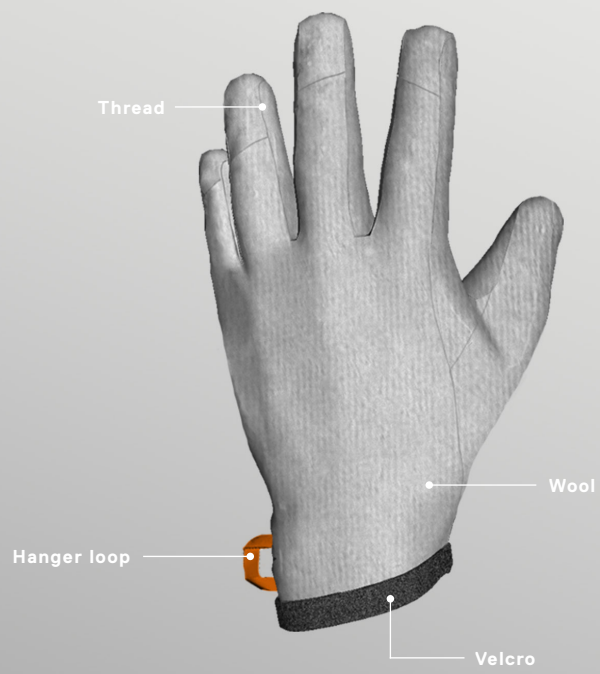
Hanger loop - Econyl®

ECONYL® regenerated nylon is a product that can help close the loop. Made from waste, it's infinitely recyclable and can unleash many possibilities for makers, creators and consumers. It's all part of the ECONYL® brand vision to make the world a better place by pioneering closed loop regeneration processes and delivering sustainable products.¹⁰

Thread - Recycled polyamide sewing thread

Made from recycled fishing nets and textile waste. Dyed with compostable dyes, abrasion-resistant, strength and colour fastness properties. Manufactured by AMAAN group for sustainable products.¹¹

Velcro - Econyl®



BASE GLOVE MATERIALS

Natural

Goat leather 0,7 mm - Colored vegetable tanned
Leather is a natural and living material, a by-product of the food industry and one of the oldest clothing materials available. The great characteristics of leather is durability, easy to take care of and the material shapes according to the users hands and therefore gives a good fit. The Nötnappa (as it is called in Swedish) is a durable type of leather with good impregnation quality. When dyed the colours gets bright. The leather is saturated with fat to better withstand moisture.

Goat leather 1,1 mm - Colored vegetable tanned
Today, 90 % of the leather that is manufactured is still considered chrome tanned. But the chrome in the leather can cause allergies. And if the leather is burned after it is thrown in the garbage bin, it can be oxidized and converted into hexavalent chromium, a very toxic substance that is carcinogenic and stored in the body.¹² It is why the vegetable tanned production is chosen. Vegetable tanned is when tree bark is used instead of chrome, it takes longer time but it is the more sustainable option when using leather as material.

Hanger loop 1 - Goat leather 0,7 mm

Recycled

Hanger loops - Econyl®
ECONYL® regenerated nylon is a product that can help close the loop. Made from waste, it's infinitely recyclable and can unleash many possibilities for makers, creators and consumers. It's all part of the ECONYL® brand vision to make the world a better place by pioneering closed loop regeneration processes and delivering sustainable products.

Hand leash - Econyl®
Elastic hand leashes.

Velcro - Econyl®

Thread - Recycled polyamide sewing thread
Made from recycled fishing nets and textile waste. Dyed with compostable dyes, abrasion-resistant, strength and colour fastness properties. Manufactured by AMAAN group for sustainable products.



SHELL GLOVE MATERIALS

Renewable

Cord stopper - Bioplastic

Bioplastics made out of sugarcane are 100 % renewable, recyclable and more sustainable than petroleum-based plastics.¹³ The gloves are quality products with a long life time and therefore they are not designed to be biodegradable. Although the gloves do not contain toxic substances they are not intended to be thrown away in nature as waste. Instead they should be returned to Stellar^{EQ} glove circularity program.

Recycled

Shell - Dermizax®NX

Getting to zero waste is a big journey. A small step on the way is to use reclaimed raw material left over from Stellar^{EQ} existing production of shell products. The Dermizax®NX from Japanese innovators Toray is a 3-layer shell that is completely waterproof, windproof and breathable. The shell fabric also features 2-way stretch which results in a lightweight and extremely nimble gloves that is still very durable for it's weight.¹⁴

Hanger loop - Econyl®

ECONYL® regenerated nylon is a product that can help close the loop. Made from waste, it's infinitely recyclable and can unleash many possibilities for makers, creators and consumers. It's all part of the ECONYL® brand vision to make the world a better place by pioneering closed loop regeneration processes and delivering sustainable products.

Strap - Econyl®

Thread - Recycled polyamide sewing thread

Made from recycled fishing nets and textile waste. Dyed with compostable dyes, abrasion-resistant, strength and colour fastness properties. Manufactured by AMAAN group for sustainable products.

Elastic cord - Econyl®



CARABINER MATERIAL

Recycled Aluminium

By using recycled aluminium, waste becomes a resource. The process of recycled aluminium is far less expensive and uses fewer resources than creating new aluminium (including water, energy and fossil fuel).¹⁵ The result is a more sustainable aluminium carbine.



↑
3D model created in Autodesk Fusion 360

CARING

Leather balm

Treating the leather gloves with leather balm makes the leather stay soft, weather-resistant and the life-time will increase.

The leather balm is made of natural and organic ingredients. The jar is made out of recycled aluminium. When the balm runs out, the user can send back the jar to Stellar^{EQ} and it will be recycled into a new jar of leather balm.

By selling the leather balm next to the gloves the buyer will more likely buy the balm and use it as well.



↑
Visualization created in Illustrator and Photoshop

CARING

Drying

By taking proper care of the gloves the life-time can be extended.

The loop at the middle finger makes it easier to dry the base gloves the correct way. The carabiner that is included when buying the base and shell gloves can be used for this procedure.

Many gloves in the market today already have this function but from the research many users did not know about the loop function. By showing the user this function on the Stellar^{EQ} website more users could use it.



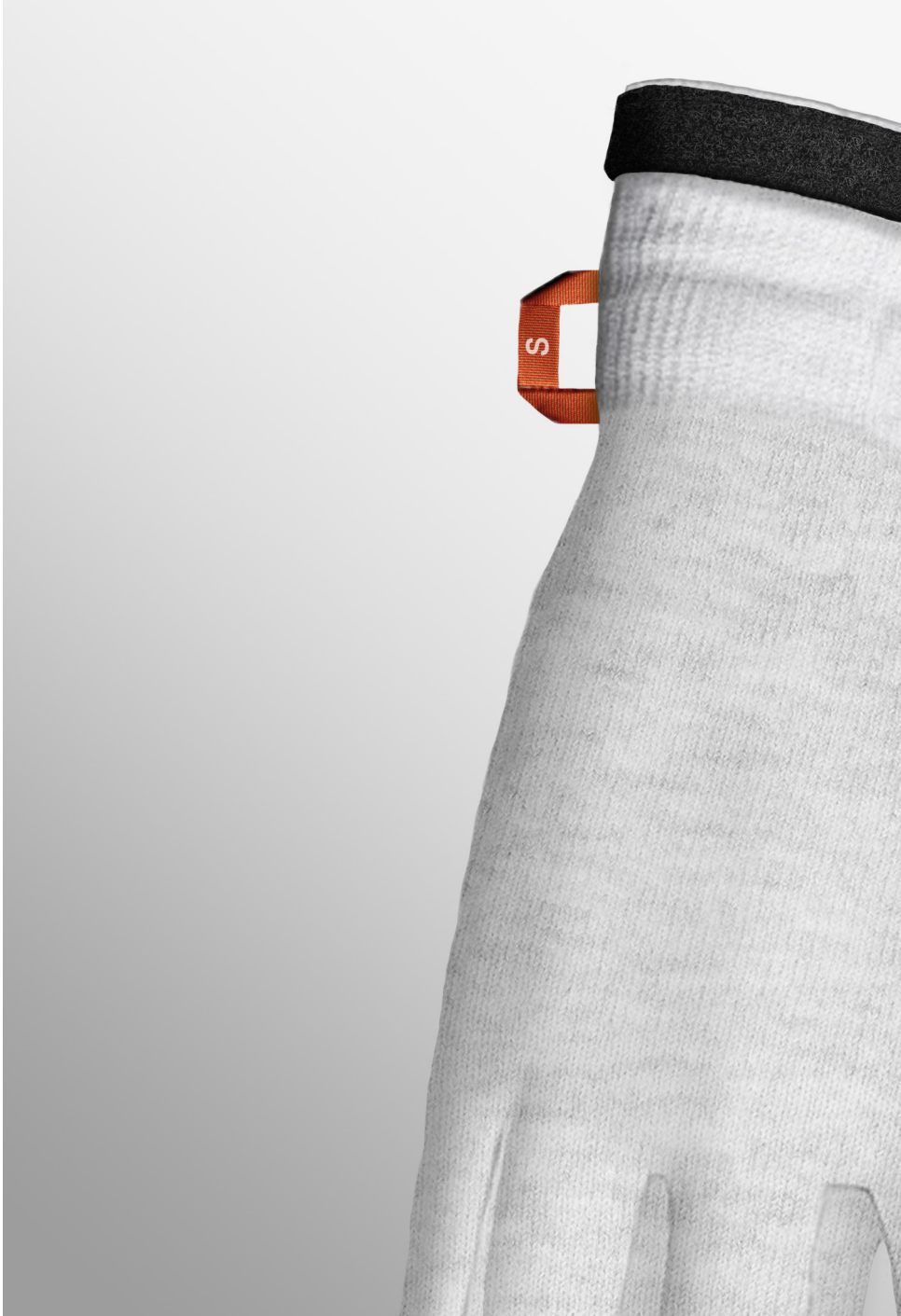
COLOURS







↑
Close-up on the Base gloves materials and embossed logo



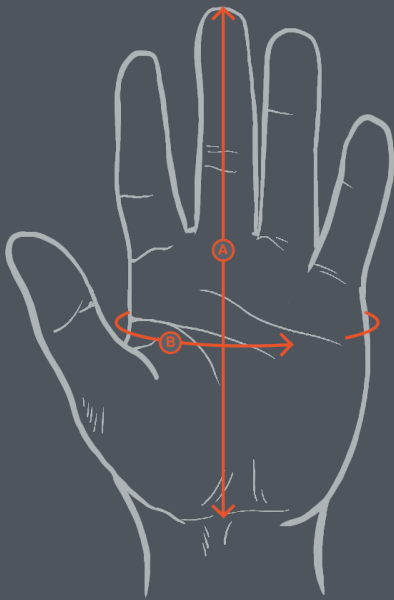
↑
Close-up on the Liner gloves materials , size indicator and velcro

SIZE GUIDE

By having a size guide on the Stellar^{EQ} web-site for the gloves it makes it easier for the buyer to choose the right size.

This means if more buyers get right size from the beginning the transportations would be reduced.

The fit of the gloves would also be better for the user and hopefully increase the life-time of the gloves.



HAND MEASUREMENT IN CM

	XS	S	M	L	XL
LENGTH	15 - 16	16 - 17	17 - 19	19 - 20	20 - 21
CIRCUMFERENCE	16 - 17	17 - 18	18 - 19	19 - 20	21 - 22

Determine your size from the chart by choosing the larger of the two measurement results.

A Length measure from the crease at the base of your wrist (on palm side) to the tip of your middle finger

B Circumference measure your dominant hand around the widest part of the palm



Visualization created in Illustrator

SHIPPING BAG

Bioplastic

Stellar^{EQ} already use corn bioplastic in their shipping bags today. One step further is to promote circular economy and print with soy ink on these. By showing that Stellar^{EQ} think about things like this the buyers see it and hopefully start thinking about it as well. A small step towards a more circular economy.

- This light-weight shipping bag contains no petroleum-based plastics. Sort as compostable waste and the bag will be recycled as waste to energy.
- Happy news! This is a climate-friendly bag.
- No petroleum-based plastics / Printed with soy ink / Made with 100 % solar energy / Climate compensated transports / Light-weight.



↑
Visualization created in Illustrator and Photoshop

STELLAR^{EQ} WEB-SITE

Use & Care

By having information on the web-site about how to use and care for the gloves the life-time could be extended for the gloves.

Circularity loop

A circularity loop system is illustrated where the the users at any time can ship back the gloves or the leather balm jar to Stellar where they will reuse the jars and sell it again and recycle as much material from the gloves as possible.

Prices

The price of the gloves bought together are cheaper but can be bought separately as well.

Stellar Equipment website interface showing navigation, product information, and care instructions for Stellar EQ gloves.

Navigation: [Men's](#) [Women's](#) [Systems](#) [Size Guide](#) [Use & Care](#) [Recycle](#)

COVID-19 Information | Free express home delivery over 1000 SEK and free returns

Ships to: **Sweden**

Stellar EQ

Use & Care

[Start / Use & Care / Gloves](#)

DRYING

Do not dry over hot radiators. Use the carabiner and hang them in the long finger loop or other loops.

CARING

Use the Stellar Leather Care Balm once a while to keep the leather smooth, weather-resistant and last longer. Put on your gloves and use the balm as soap when washing your hands. Let the balm dry over the night.

[Support](#)

Stellar Equipment website header: **STELLAR^{EQ}** | [Men's](#) | [Women's](#) | [Systems](#) | [Size Guide](#) | [Use & Care](#) | [Recycle](#) | [Ships to: Sweden](#) | [Support](#)

Recycle

Start / [Recycle](#) / [Circularity Loop](#)

CIRCULARITY LOOP

You can recycle the Stellar Glove System and the Leather Balm back to us whenever you like. We will recycle the Leather Balm jar to make new ones and also as much material from the gloves as possible. We will give you 10 % discount on your next purchase as a thank you for caring for our planet.

ORDER NR

EMAIL

FIND YOUR ORDER

Gloves

Start / Men's / Base & Accessories / Gloves

BASE & ACCESSORIES

BASE LAYER

HEADWEAR

BELTS

ZIP PULLERS

GLOVES

FILTER & SORT



STELLAR GLOVE SYSTEM
LT GREY / OLIVE GREEN / DK GREY
1550 KR

STELLAR LINER
LT GREY
250 KR

STELLAR BASE
OLIVE GREEN
850 KR

STELLAR SHELL
DK GREY
600 KR

Support



Liners hanging with the carabiner in the harness



↑
Take of the base glove when touring or need precision work



↑
Detail of snowlock function



↑
Cover the liner and base with the shell gloves



↑

Base + liner glove together in real life senario



↑

1. Dry the glove with help of the included carabiner
2. Use the hanger loop on the inside to make it easier when taking on/off
3. The velcro on the liner and inside of the base hold them on place
4. Side loops to connect the gloves when not used

EVALUATION

Because of the Covid-19 pandemic this project has been executed in a different way than usual. The school closed down and more than half of the project has been conducted in front of the computer at home. I have really missed the everyday conversation with feedback and inputs from classmates and other people from the school. The possibility of a real sewing workshop disappeared and I decided to go digital.

Because of this decision mockups and real prototypes were not done and it became hard to test different functions and materials. During normal times this is a big part of the design process where possible developments can be found, which did not happen in this project.

The next step would be to send the patterns to someone who could sew them and let real users test them to understand which developments could be done.

The possible developments I see without testing the glove is the choice of colours could have been more discussed with Stellar^{EQ} to understand how many variations of a glove is profitable to have for a brand like this.

The fit of the different gloves worn together versus separately would also be a possible development.

The price of the gloves could also have been explored and researched more.

A lot of time during this project was spent on learning the new 3D program. This time would have been better spent sketching more and to develop different prototypes.

I have also learned that the research part can go on forever and it is critical in every project to quickly put up frameworks for oneself to be able to continue in the process.



REFLECTION

The goal of this project was to gather a greater understanding about sustainability, investigate how we as designers can create more sustainable products and apply these findings as much as possible to the product designed in this project.

I believe I have reached these goals. The research around sustainability has opened my eyes and I am happier than ever I have chosen industrial design as my career because I honestly feel that we as designers can contribute positively to the environment and make a change to how we use products and the planet's resources.

An alpine pro ski glove may not be the most revolutionary or most innovative. But if the findings in this project were applied to all products in for example Stellar^{EQ} the impact would be greater. If all designers and companies would aim to work for a circular economy I truly believe the earth would look a lot differently than it does today. Maybe our grandchildren and their children will be able to experience the beauty and happiness of skiing in Chamonix's glaciers.



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