



**NORTENT**  
NORWAY

BOOK OF  
**TENTS**



IT'S NOT JUST A TENT. IT'S A NORTENT.





*Designed to give you comfortable shelter in the toughest terrain and weather.*

## THE STORY

The story behind Nortent goes 30 years back in time when the founder was young. Even back then he had a keen interest for nature and the outdoors, however other hobbies grabbed his attention just as much. At 19 years old he left home and joined the military where he was appointed a place in the Navy. But Kjetil wanted to spend time out in the fields, forests and mountains. He did not want to be out at sea and was granted a transfer to the infantry. In the military he spent much time in tents up in the north of

Norway during all seasons. Here his real passion for the outdoors was sparked. He wanted to experience nature outside of the military structure, and be free to wander the wilderness on his own terms. Kjetil still remembers the time he was standing guard and looking out over the vast, beautiful landscape and wondering what it would be like to explore the natural playground, the wilderness. Not restricted by the military and its equipment, but rather with equipment that was aligned with nature and catered to the good experience.

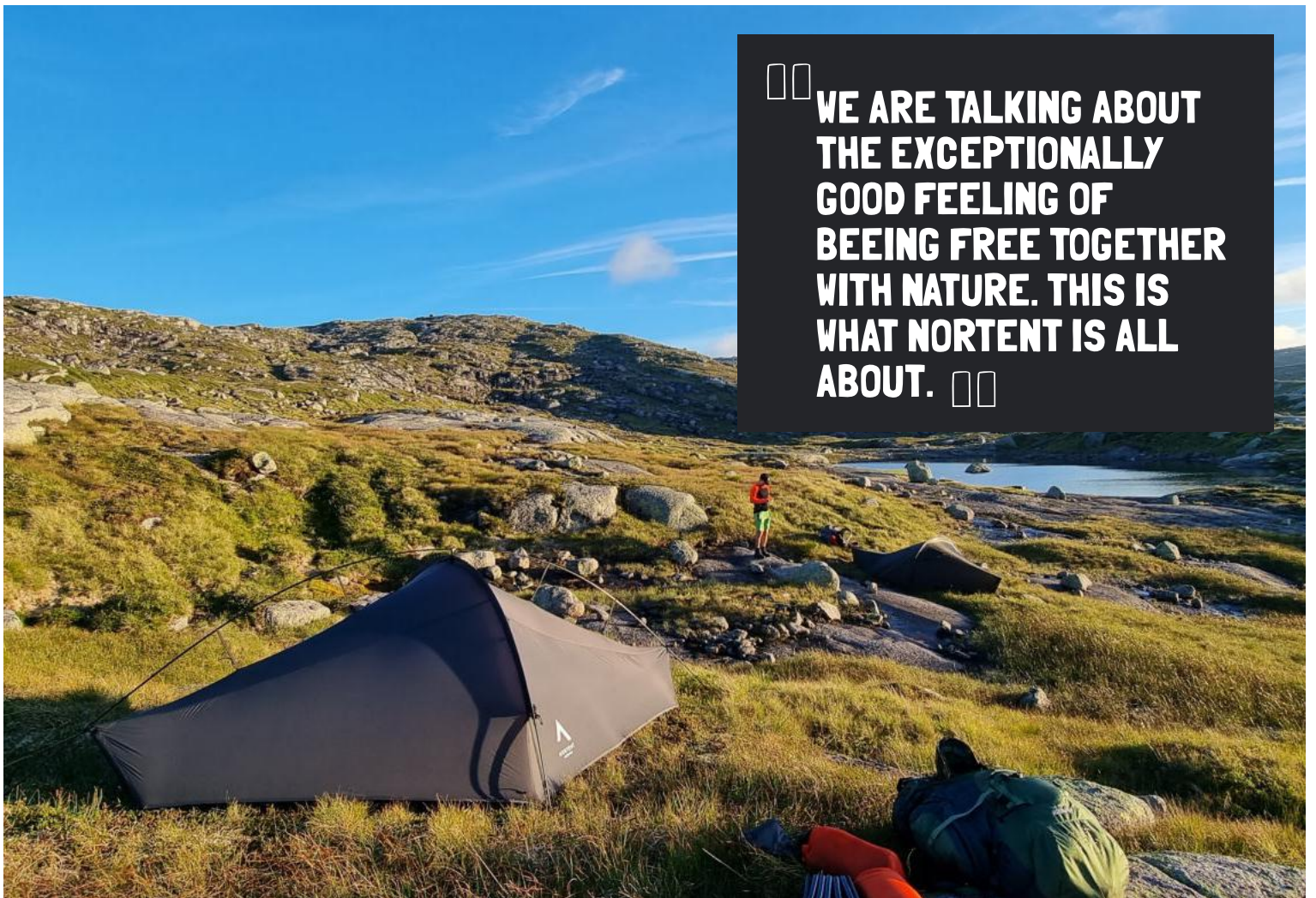
Kjetil's role in the military was to instruct and educate other soldiers on survival techniques and

strategies in wilderness environments. When his military service ended, he continued with teaching with mathematics as one of his subjects. Through mathematics Kjetil discovered that many elements in nature are constructed by geometrics, where both human beings and animals experience a sense of harmony with

shapes and sizes that have symmetry. If one looks closer one can observe geometric shapes and fractal patterns everywhere in nature. The universe operates in line with







□□ WE ARE TALKING ABOUT THE EXCEPTIONALLY GOOD FEELING OF BEEING FREE TOGETHER WITH NATURE. THIS IS WHAT NORTENT IS ALL ABOUT. □□

these patterns and proportions and they give harmony to all living creatures. An example of this is the golden ratio which is measured at 1,62, the limit of the ratio of consecutive fibonacci numbers. In example a staircase where the relation between depth and height has the 1,62 ratio it feels natural to walk it. Without the 1,62 ratio it feels unnatural. The beautiful sunflower has a 1,62 ratio as well as endless other living features in nature.

As a teacher of mathematics and with his passion for nature Kjetil became more and more convinced that the equipment you rely on in nature should align with nature thus believing that a “mathematical tent”

would both function better and be perceived in unison with nature.

Over the years Kjetil had spent much money and time on expensive tents and other equipment he deemed to be of poor quality. They seemed to be always lacking something. They were either too heavy, too small, too fragile, too complicated to set up or simply just unappealing to look at. Kjetil envisioned a tent that was a natural part of the environment. Spacious, light, easy to set up and above all comfortable. Equipment one can rely on in any situation, and which also has esthetic features that find their natural place in the environment thus create harmony.

This is why the

mathematics teacher decided to design his own tent based on his scientific theories and empirical knowledge. He studied the shelters the indigenous people had used for centuries to keep safe and warm in the rough climate of Norway. When developing his modern day version for camping and backpacking out in nature, it was natural to seek inspiration from the indigeneous people’s techniques based on ancient knowledge. Tents that are designed and created for harsh Norwegian weather conditions. This is how the Lavvo and the Gamme from Nortent came into creation. The Lavvo is cone-shaped, a shape you find in numerous features in nature. The Gamme is

circular, one half of a perfect round globe.

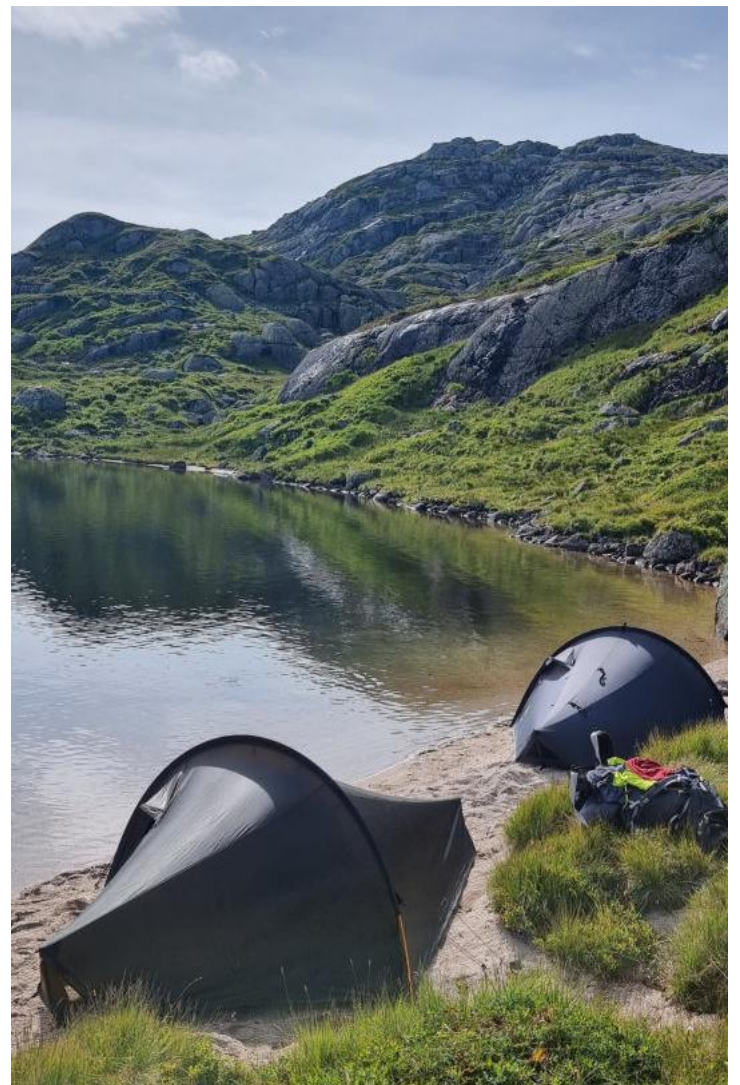




Kjetil believes the tents to be esthetically appealing because human beings are a product of nature. That is why mathematical shapes and proportions appear in harmony and he aims for the tents to become intrinsically connected with nature. A tent should be both esthetic and practical.

With this in mind and at the same time. The perfect gear in the wild for NORTENT is spacious, lightweight, safe, easy to set up and of course comfortable, Equipment you can rely on in any situation, all seasons. After all, it is all about having the right equipment in the bag that promotes the feeling of well-being when you are walking in the mountains or deep forests. If you

have a comfortable trip, the experience and memories are easily brought to the next expedition. And the urge and yearning for nature become even stronger. For us, it is important to be able to stop where we want, stay overnight where we want, make camp, and trust that we are comfortable and safe. Crawl into the sleeping bag warm and satisfied without worrying about a storm, rain or cold. Yes, we are talking about the exceptionally good feeling of being free together with nature. We believe that nature is your home, and our tents should be your doorway.







▣▣ **WE ARE CONTINUOUSLY IMPROVING OUR TENTS  
BASED ON EVERYDAY FEEDBACKS TOGETHER  
WITH OUR OWN EXPERIENCE AS WE IN FACT USE  
OUR TENTS AT EXPEDITIONS ALL SEASONS** ▣▣

*What is the best and most appropriate material depends on the intended use.*

## THE PROCESS

All of our tents are designed and tested in Norway before going to production at our dedicated

factory in China where we have staff that are trained and focused on quality when sewing our tents. The "final" product is actually a result of trial and error through thorough tests, use and investigation in a live environment in Norway. Here we collect real world data from the mountains and landscape in our own local environment. In this context we spend a lot of the time

outdoors where the "final" product see daylight through a very laborious process, from design table to a "final" product.

With that said. We are continuously improving our tents with the feedback from customers and our own experience as we in fact use these tent on our own expeditions all seasons. This gives us a unique opportunity to adapt and perfect the designs through an infinite and flexible process that makes the tent somewhat "alive" and adaptable, in the journey for perfection.

It is precisely through our own expeditions and frequent use we evaluate which materials are appropriate and which materials are qualified for the intended use.





# THREAD AND SEAM

## THE TECHNIQUE

The quality of the fabric is important when choosing the right material and equally important are the seams that hold the fabric together. The optimal thread and sewing technique must be applied. We apply the flat fell-seam, a sewing technique that makes the seams very durable. In order to give the thread a solid and thorough grip, the flysheet is folded so that the seam consists of four layers of fabric that every stitch goes through.

NORTENT  
NORWAY





The thread we apply to the seams is the Amann Rasant 75 WR thread from Germany. One of its properties is that it expands when it becomes wet (an expansion thread). This means that the holes in the flysheet where the thread has gone through, will be tightened as the thread in fact expands and covers more of the hole thus makes it more waterproof.

In addition we also use a special cooled needle in the actual sewing process. This allow us to minimize the pinholes caused by the needle when sewing.

This applies especially to the silnylon fabric that is very elastic and withstand considerable stretching without being damaged. With that said. With the stretching of this fabric, the pinholes will also stretch and become less waterproof. That is why we think it is also appropriate to seal the seams on the silnylon fabric with a silicone mix to make sure the seams are 100%

waterproof. The silicone mix will also penetrate through the seam and strengthen it.

The size of the stitches are also carefully considered. Many wrongfully believe that the denser the stitches are, the stronger the seam is. This is not correct and it is essential to find the right size. If the stitches is too big, the seams will become weak. Are the stitches too small and dense there will be too many pinholes, which will weaken the seams. Based on our findings we have decided on 10-12 stitches within a seam of 3 centimeter. This is where you obtain the most resilient seam.





# THE FABRIC



## SILNYLON

Imagine the spider's web. It is made from thin silk threads spun by the spider. The silk in itself is not that strong but it is very elastic. When exposed to external forces the threads in the web stretch instead of breaking. Similar principles apply to the silnylon flysheet. When affected by strong wind and heavy rainfall the flysheet stretches and distributes the energy evenly over a larger area thus reducing the impact. Take a stress point like the guylines, for instance. In strong winds it is subject to great external forces. If the material around the guylines have low elasticity, too much of the energy will concentrate around that point and cause damage. With an elastic like material like silnylon the external forces will be distributed more evenly. Both in the fibers itself, but also between the guylines and the flysheet and then with less degree of inconsistent tugging and pulling..





### **Threadcount and density**

Backpacking tents are often made from polyester or nylon. Nylon is generally stronger and more durable than polyester. Add ripstop to it, and you get a very durable fabric. The tear strength of the materials depend on the chosen thread thickness, and the density of the thread. The scale of measure is "D" for denier which is an indication of the yarn weight. The density of the thread is called threadcount. The thicker the thread and the higher the threadcount, the stronger the tear strength. But also, the heavier the fabric becomes. In example, a 10D flysheet can be very light and therefore attractive to the superlight hiker. But the tear strength will be weaker and material less durable than say a 20D fabric. Well. It is not that simple.. Other details also play a part. that we will address later on. But through tons of research we have made a fabric which we

find is appropriate for each tent, that gives the required tear strength without compromising too much of the lightness of weight.

### **The coating**

The quality of the fabric also depends on the coating that is applied. Coating is required to make the material waterproof. The fabric normally used for low end tents, is polyester covered with a layer of polyurethane coating. It is a more economical way to achieve a waterproof flysheet. Unfortunately a flysheet coated with PU (polyurethane) is often prone to chemical degradation which leads to the coating dissolving over time and becoming anything but waterproof. In addition the PU coating literally demolishes the tear strength in the fabric. With silicone coated flysheet the case is very different. At NORTENT our choice of fabric is ripstop nylon coated with silicone on both sides. This is Silnylon. It is highly water repellent, elastic and durable. The waterproof

qualities do not weaken too much over time. Silnylon is significantly stronger and lighter than PU coated fabric. We have chosen silicone coating on both sides of the fabric as opposed to a silicone/PU combination that many manufacturers find attractive. Our double sided silicone makes the flysheet lighter, stronger and more durable. It is a little more cost expensive than silicone/PU. But for the upgrade in quality, we'd say it's worth it

Nylon impregnated with silicone is a very dynamic fabric. It stretches, moves, contracts and retains depending on temperature and humidity. For flexibility it is one of the best fabrics to choose for the flysheet.







### **Nylon 6/66**

In the tent industry the silnylon fabric in general is divided into two standards. Nylon 6 and nylon 66. Seen from a purely technical point of view, nylon 66 is the best fabric. But. And this is a big but. Best fabric is not always the best fabric for all tents. It depends on the use and purpose of the tent. This is also why we carefully select which tent is equipped with nylon 6, and nylon 66. Nylon 66 is in general a somewhat more expensive fabric. And for us it is important that the durability and quality reflects the price you put into it.

To be able to deliver a strong, yet lightweight and somewhat small

tent we find that nylon 66 is the best choice. As the thin lightweight nylon 66 is about 10% stronger compared to nylon 6. Nylon 66 also absorbs less water than Nylon 6. Which means that the fabric do not increase as much in weight when wet. These are of course important factors when going for an ultralight alternative. This is also why nylon 66 is an appropriate fabric in a small and lighth-weight tent. But. Here comes yet another but. When increasing the thickness of the fibers/ fabric for use on the bigger tents, the differences are just not there. Where we simply can not defend the use of nylon 66 when comparing the price to what you actually get. There are actually only

marginal differences between nylon 6 and nylon 66 in a bigger tent with thicker 70D silicone nylon fabric. But the price-tag is nevertheless significant. This is why we carefully consider the nylon 66 for our small, and highly lightweight tents, but rather find that nylon 6 is a better choice for the bigger tents as the

bigger tents really need a thicker fabric to be able to deliver the correct functionality related to the intended use.





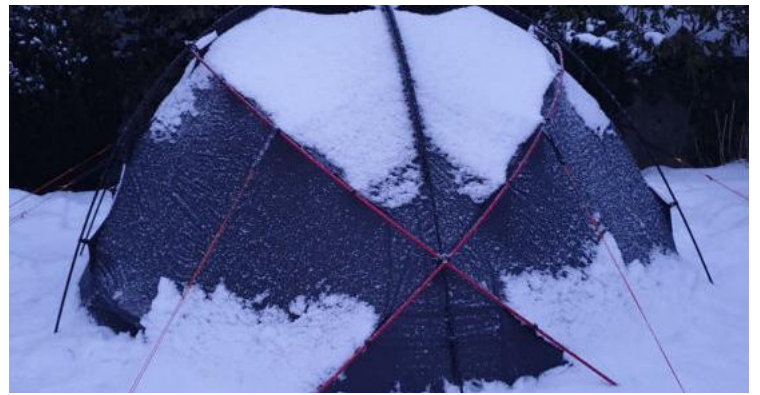


### **Snowload**

We believe we have found a good balance between weight and strength with our silnylon fabric. You should be able to use our tents in most weather conditions. But remember it is a tent, not a cabin. Although it is designed to withstand harsh weather conditions, it is not indestructible.

It will withstand strong winds and heavy rain but do not leave the tent unattended during snowfall. Especially wet and heavy snow will put a forceful load on your tent. The snow must be regularly brushed off the flysheet or it will ultimately perhaps destroy the tent. The weight of the snow can reach as much as 400 grams per liter of snow, which means that as little as two inches of snow on the surface will measure about 20 kilos per square meter. The tent surface on for example the Lavvo 6 is about 14 square meters where the flysheet would be exposed to about 280 kilograms of

pressure. Depending on the circumstances the pole or fabric will eventually break if the snow is allowed to accumulate on the tent. Snow at -3 degrees celsius weighs about 50 gram per liter. Two inches of snow equals 2.5 kilograms per square meter which adds up to 35 kilograms of pressure on the flysheet. With a constant force stretching/ pushing the fabric over several days will stretch the nylon fabric in such a way that it will finally break. Or the pull will gradually wear down the pole/ poles. Take strong wind into the equation and the situation will deteriorate even faster. So. Brush the snow off the tent once in a while. Do this and the tent will be a reliable shelter in most extreme weather conditions.







### **The fibers "live"**

The silnylon being so dynamic, needs some attention by you. Picture this: You've set up the tent on a hot, sunny day. The tent looks good. It's tight with smooth, clean lines. There is a change in weather...come nighttime the temperature drops, it may rain, and the tent looks nothing like the beautiful setup you made earlier in the day. Due to the rise in humidity and lower temperatures the flysheet has stretched and taken on a slack and wrinkled appearance. The solution to this is to adjust the stakeouts or the center pole (if you have one) accordingly to make the flysheet tight and smooth again.

When the sun is back out and the temperature rises, the fibers in the fabric want to tighten back to the level it was the day before. You must now release the stakeouts equally to what it was tightened to the night before. If you do not do this the flysheet will tighten even further with a brutal tension. Be aware that it is now at its weakest. At worst it may have stretched the fabric to a degree beyond breaking point. So. Pay attention to the fabric during your stay. We strongly suggest to adjust the fabric accordingly .

With that said. You are able to stretch the tent a few percent . That's a good thing, because you "stretch"

the tent into place when the surface is uneven or where you have uneven sides. But a rule of thumb is to always ensure that the flysheet have some flexibility in it and not left tight as a drum.

### **Flame retardant**

Our nylon fabric impregnated with silicone is a flame retardant combination. Silicone requires a relatively high temperature to ignite. Nylon is far less flammable than polyester, which is a popular tent fabric with many other manufacturers. Although our silnylon fabric is flame retardant it will still cause damage if a spark finds its way to the fabric or if it comes in contact with the hot

stove or pipe. It is non-flammable but the affected area will melt and create a hole in the fabric. This can easily be repaired with a seam sealer combined with some extra tent fabric. If the holes caused by sparks are particularly small, a little drop of silicon will do. plenty.





☐☐ **NO SEAMS ON SILICONIZED TENT- FABRIC IS 100% WATERPROOF WITHOUT MANUALLY ADDING SILICONE TO THE SEAMS.** ☐☐

**Seamsealing. What? Why?**

We recommend to seamseal the seams on the silnylon-tents to achieve 100% waterproofnes on the seams. And yes. We get it! You just bought a quality, high-end tent, and of course you expect the seams to be waterproof from the factory. In fact, most that previously have bough a generic tent, got the tent with 100% waterproof seams from the factory. Where the seams have been taped waterproof . So. What is going on?

This is, however, only the case with PU(polyurethane)-coated tents. Not siliconized tents like NORTENTS

Siliconized fabric is coated and

impregnated with silicone. As you may know, nothing sticks to silicone. This is also why it is not possible to tape the seams waterproof as the tape simply do not stick to the seams. Thus why seamsealing on siliconized fabric is only possible when applying silicone to the tent as only silicone sticks to silicone. Further. This can only be done by hand as the silicone needs about 24 hours to fully dry. From a manufacturer point of view it would steal unforgiven resources from the production-process which is why it is more appropriate that end-user take care of thiss process. With that said. We use all techniques available to make the seams as dense as possible. The

seams are sewn with both a special expandable thread and a special cooled needle to reduce the pinholes caused by the needle..





# SILNYLON CONDENSATION. WHAT ABOUT IT?

☐☐ A TENT WITH SYNTHETIC FABRIC IS "LOCKED" TO SOME IMPORTANT PHYSICAL PRINCIPLES WHEN IT COMES TO CONDENSATION ☐☐

Being able to feel warm, dry and safe in a tent is something we all prefer on an expedition. It goes without saying that it should be waterproof. One should not be worried about whether the tent can withstand the rain that hails against the tent during the night.

Our nylon fabric are silicon-coated on both sides and are of course completely waterproof. It can withstand a water pressure of at least 3000 mm. This means that if you lay out the the fabric and shape it like a pool, you can fill this pool with water where the pool can be as much as 3 meters deep without the pressure of the water pushing the water through the fabric now laying on the bottom. If you now imagine our fabric at the bottom of this pool, there is quite a lot of water pressing against the fabric. Nevertheless. The fabric keeps the water in place. But if the surroundings/the air around the "pool" is cool and moist, and the water in the "pool" the colder, you will see water droplets on the "dry" side of the fabric, even if the fabric does not let water through. This is where we meet an important physical principle. And that is **condensation**.





When moist air hits the colder tent fabric, the air is unable to retain the same humidity, and the water in gaseous form is then left as liquid water on the inside of the outer fabric. The same principle applies when you get into your car on a rainy day. Then there is condensation/water on the inside of the windscreen. Or just look at the grass one random morning. It's full of water drops even though it hasn't rained a single drop. Same principle. Condensation is perhaps a particularly big challenge when it rains, because this air contains a particularly high amount of moisture/water... (There is a reason why it rains).

You are completely dependent on getting the moist air out of the tent to avoid condensation. In some cases, however, it is almost impossible to ventilate all the moist air. Especially on humid evenings where the temperature is low and the humidity high. In several cases, you will find that the battle against condensation is lost as the tent-walls gets wet on the inside. Regardless. If you do not have a wood stove and spend the night in a wet and cold climate, we would strongly recommend an inner tent (applies to all tents with artificial fibers such as nylon or polyester). That is precisely one reason why the vast majority of tents have fixed inner tents. But you certainly do not prevent condensation inside the tent with an inner tent. You only keep it outside the sleeping area. The inside of the outer fabric will still be just as damp and wet. You notice this if the inner tent comes into contact with the outer fabric on a perhaps rainy day.



**CONDENSATION IN A TENT IS THE RESULT OF MOISTURE FROM THE PEOPLE STAYING IN THE TENT, FROM THE GROUND, AND NOT LEAST FROM THE AIR ITSELF.** □□







☐☐ **IF YOU ARE WITHOUT HEATING AND SPEND THE NIGHT IN A WET AND COLD CLIMATE, WE WOULD STRONGLY RECOMMEND AN INNER TENT IN A NYLON/POLYESTER TENT** ☐☐

*Even though we have optimized the air flow in our tents with a lot of options for ventilation, it is common with some water on the inside of the outer tent on those cold and damp evenings as a result of condensation.*

Ventilation and heating are perhaps the best way to reduce condensation inside the tent. With proper ventilation, the

moist air is replaced with dry air and transported out of the tent, preventing water droplets from forming on the inside of the tent fabric. But. When it rains, the air is saturated with moisture. This means we have 100% humidity. The same humidity then applies inside the tent. When this air then hits the inside of the cooled, thin tent wall, the saturated air is cooled very quickly and the air

simply cannot hold the same amount of water. And it must then let go of the water. The water goes from gas to liquid (same principle when it rains outside). This phenomenon can be seen in the form of water droplets that runs down the inside of the tent wall. If the weather in addition is windy, the tent walls will flap where some of the water on the inside of the tent will be thrown off by the flapping fabric, on the inside of the tent. It feels as if it is raining through the tent walls. Of course it doesn't. This is called "misting" and is a well-known phenomenon when staying in a cooled tent without an inner tent on a rainy day.





☐☐ **ON WINDLESS DAYS WITH HEAVY RAIN, YOU WILL BE SURE TO EXPERIENCE THE BUILDUP OF CONDENSTAIION ON THE INSIDE OF YOUR OUTER TENT.** ☐☐

When it rains, is damp, and/or cool, we strongly recommend an inner tent if you do not have the opportunity to use a wood stove. On particularly windless days with a lot of rain, you will experience condensation on the inside of the outer tent as it is somewhat difficult to get rid of the moist air. Also. With an inner tent, the need of seam sealing is perhaps not that essential. This is also the reason why most tent manufacturers with silicone-based fabric do not inform about seam sealing. As the inner tent that comes with the tent nevertheless keeps a distance from the water that may occur on the inside of the outer fabric.

However, For many of our tents we offer you a choice to use an inner tent, or not. Where we do recommend seam-sealing the seams as the seams on silicone-based tents cannot be taped waterproof. These must be lubricated with silicone to make them 100% waterproof. With that said. Most of the water on the inside of the tent-fabric is a result of condensation where the inner tent is the solution for a dry and comfortable tent if you are not using a stove.





# THE FABRIC

A white canvas tent is pitched on a grassy bank next to a river. The tent is the central focus, with its peak pointing towards the top right. The background features a wide river, bare trees, and rolling hills under a cloudy sky. The overall scene is a natural, outdoor setting.

## **POLYCOTTON**

With breathable polycotton fabric you avoid condensation on the inside walls of the outer tent.

Most tent fabrics need some kind of waterproof coating to make it waterproof. But with polycotton much of the "waterproofing" work is done by the fiber itself. A cotton canvas is not completely waterproof from the factory. It needs to be exposed to water so that the fibers in the fabric expand and thus make the fabric 100% waterproof. Be it from exposure to rain or water from a garden hose, this process is called weathering. This also applies to the thread in the seams. With this in mind it may be good to know that it is normal with a few drops of water coming through the fabric during the first rain showers. The fabric will become denser after each time and eventually become completely waterproof. It is the internal fibers in the tent fabric that are making the fabric completely waterproof. With proper care and storage the tent will maintain its waterproof properties for many years to come with no extra maintenance to waterproofing.





Cotton has a long history as a canvas for tents. Some of the first commercial tents were made of cotton canvas. These tents were warm, with an acceptable indoor climate. We at NORTENT have experience with cotton tents from the army where the cotton tents worked perfectly as shelter and insulation. The big downside, however, was that these tents were too heavy to carry. They had to be brought to camp by motorized transportation.

Eventually we got tents with synthetic fabric, mainly polyester. Polyester was and still is an inexpensive and strong fabric. However, with synthetic fiber it's challenging to keep a good indoor climate. Condensation can easily build up if the air flow is not maintained. In a very humid, environment it is close to impossible to avoid condensation with a fully synthetic flysheet regardless of designs and models.

This is where the good

properties of polycotton come into play. Polycotton is, as the name suggests, a fiber-blend of polyester and cotton that preserves the best of both worlds. The cotton makes the canvas breathable where you do not have to constantly fight against the condensation inside the tent. In addition, cotton insulates and gives a much warmer and drier indoor climate. With a proportion of polyester in the cotton fiber, you can make this fabric much lighter and thinner and at the same time maintain the durability of the tent. Have a look at our Lavvo 6 PC. This would easily have a weight over 20 kilos if the canvas was made out of 100% cotton. With our hybrid fabric made of polycotton we reduce its weight to only 7.5 kilos, and at the same time benefit from all the good properties of a regular cotton canvas. The downside is that they are still heavy compared to tents as light as synthetic tents. So you have to consider what's

important to you. If a dry, warm and ventilating tent are important characteristics for you, then you should spend a few nights in our PC tents. The indoor climate is much better than what a synthetic tent can offer.

Because the polycotton fabric is ventilating and breathable, the need for an inner tent is considerably reduced. One of the tasks of an inner tent is to keep the wet and damp tent walls away from the persons living in the tent. The mesh fabric of the inner tent lets through moist air so you avoid condensation inside the inner tent itself. However, if the outer tent is synthetic (non-breathable), condensation will then occur on the inside walls of the outer tent.





# THE FABRIC

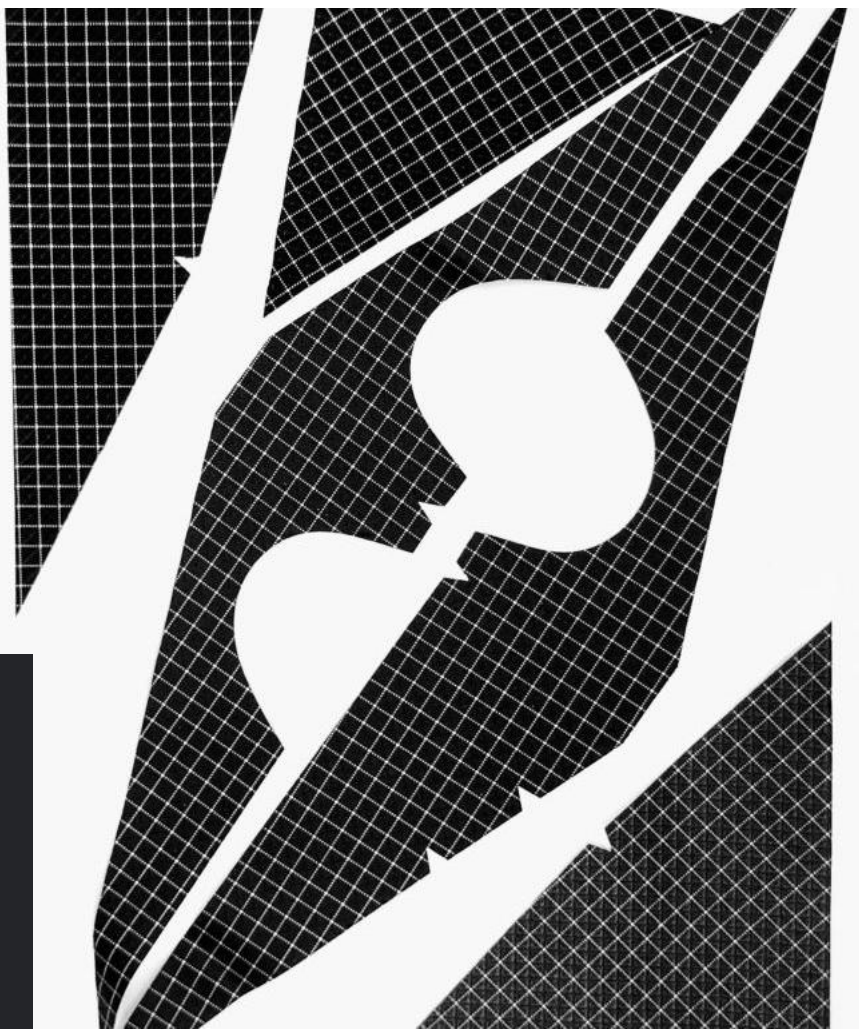
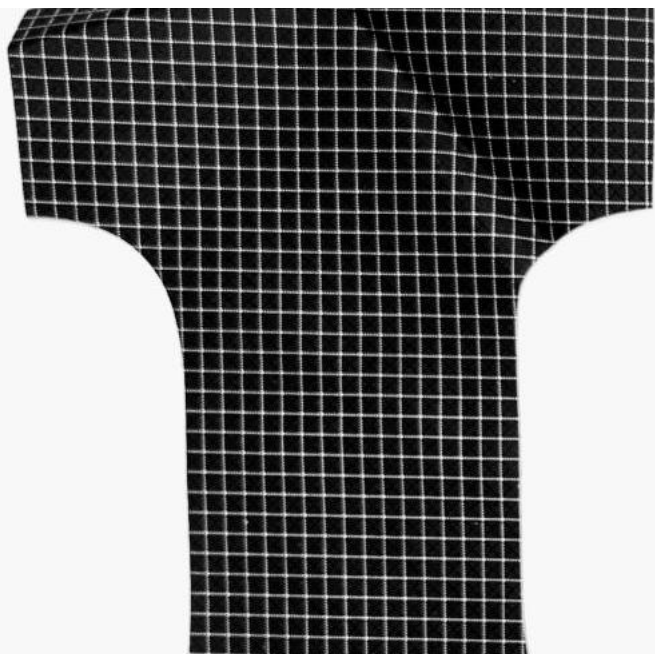
## DYNEEMA

All exposed areas on the outer fabric are reinforced with Dyneema fabric. Dyneema is considered the worlds strongest fabric. .

Dyneema is a type of synthetic fiber that is as mentioned known for its extreme strength and lightweight nature. It is made from ultra-high molecular weight polyethylene (UHMWPE), which is a type of plastic that has been highly stretched to align the molecules in a specific way. This process makes the fibers extremely strong, with a tensile strength that is 15 times stronger than steel on a weight-for-weight basis. Dyneema fabric is in fact often used in bulletproof vests and other protective gear because of its ability to stop bullets and other high-velocity projectiles.

It is therefore perfectly appropriate that we have added this fabric on parts of our tents where the brute force is expected to be very high.





▣▣ **DYNEEMA IS AN EXCELLENT CHOICE FOR USE AS A REINFORCEMENT MATERIAL DUE TO ITS EXTREME STRENGTH AND LIGHTWEIGHT NATURE.** ▣▣

Dyneema fabric is very strong, but an extremely expensive fabric. This is also why we use Dyneema on only parts of the tent where it is actually appropriate. Which is as a reinforcement, to add strength and durability to the tent's structure. Particularly in areas that are prone to high stress and wear and tear

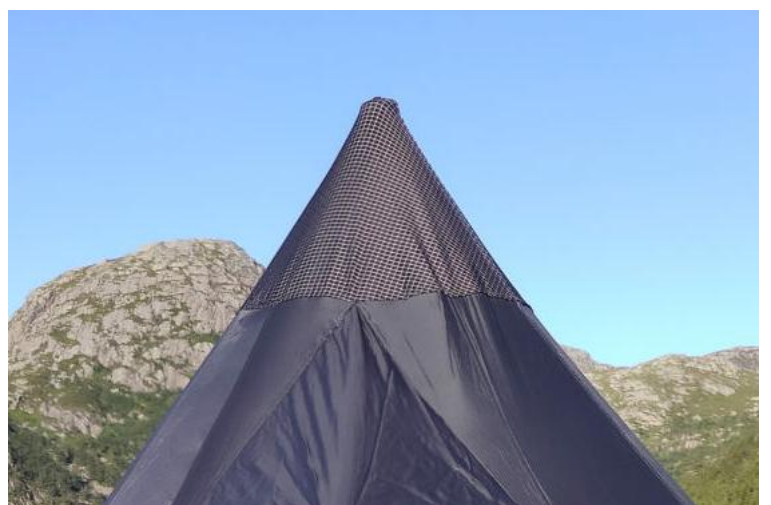
One of the main advantages of using Dyneema fabric as a reinforcement material in tents is its strength-to-weight ratio. Dyneema fibers are extremely strong, but they are also lightweight, making them ideal for use in tents that need to be carried over long distances. In addition,

Dyneema fabric is highly durable and resistant to wear and tear, which makes it an ideal material for use in tents that will be subjected to harsh weather conditions and rough terrain.

Further. The Dyneema fabric is excellent as a reinforcement material because of its ability to withstand brute force. We find that our tents reinforced with Dyneema fabric are less likely to be damaged by strong winds and are more resistant to tearing and puncturing. This makes them suitable for use in exposed locations and high-altitude environments where winds can be strong and gusty.

Overall, Dyneema

fabric is an excellent choice for use as a reinforcement material due to its extreme strength, lightweight nature, and durability. It helps to add strength and durability to the tent's overall structure, making it more suitable for use in harsh environments and challenging conditions.







We have put a lot of time, effort and energy into developing our ARCX-N fabric. We find the right combination of tickness, density and waterproofness of the fabric to be some of the key factors when presenting a strong, durable yet light fabric. The ARCX-N fabric is divided into ARCX-N100 to ARCX-N700 where N100 is our most lightest and thinnest fabric. In addition many of our tents come with two options for each fabric where we have chosen to divide this into two series. **Arctic** and **Extreme** series. The **Arctic** series

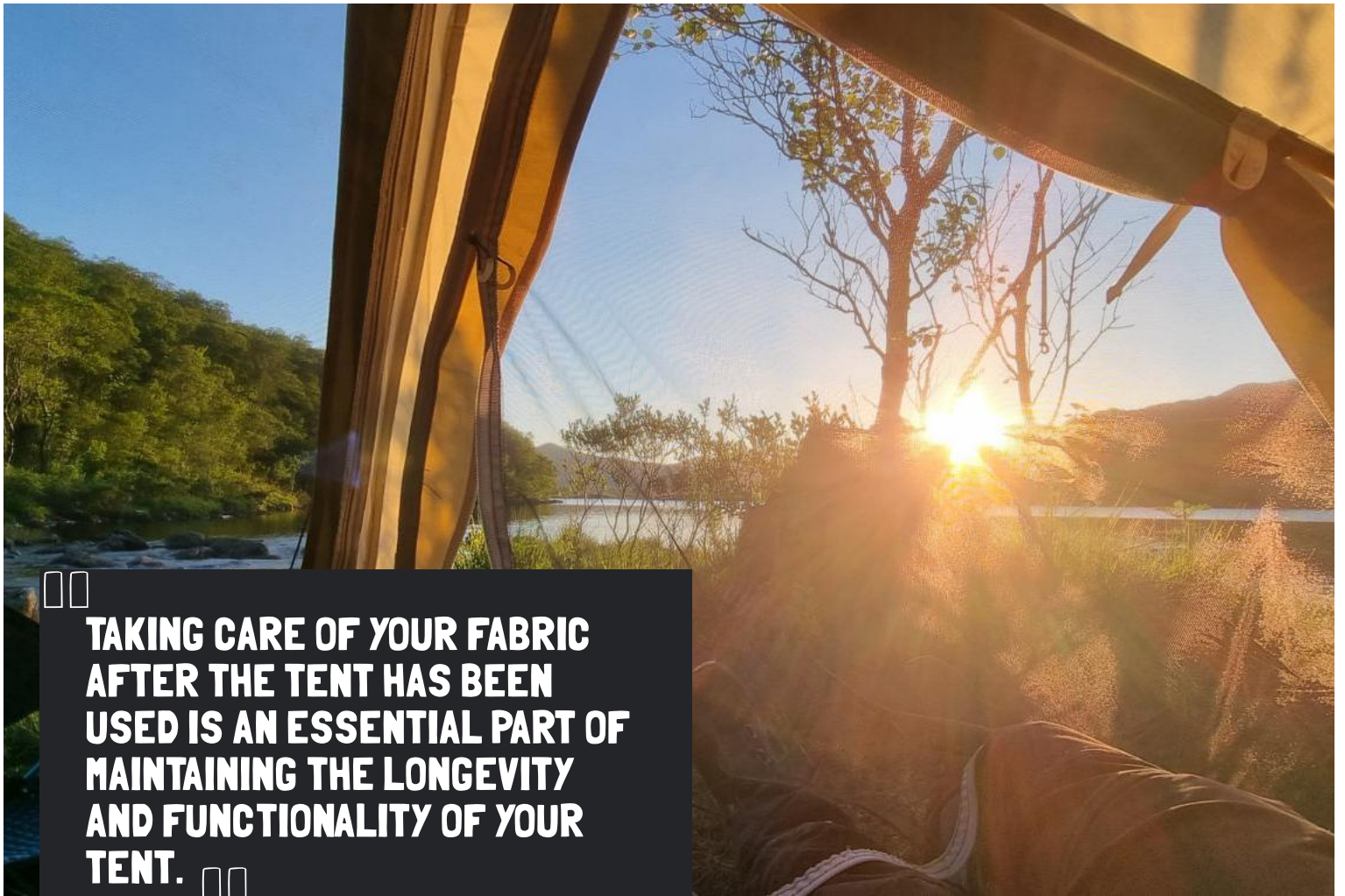
consists of products that have very good durability, quality and strength. But still.. We have the opportunity to further increase the strength and durability of the fabric and materials. This is our **Extreme** series. This is absolutely the rawest fabric possible in terms

of strength, durability and quality. However, this upgrade comes at a cost. Both for us as a producer, and for you as a consumer. We therefore think that it makes sense that you should have some options based on your needs. If you are looking for the absolute rawest

we can offer, our Extreme series is the thing for you. If you do not want the rawest there is but still have a high degree of strength and durability, the Arctic series may be a good choice.







**TAKING CARE OF YOUR FABRIC AFTER THE TENT HAS BEEN USED IS AN ESSENTIAL PART OF MAINTAINING THE LONGEVITY AND FUNCTIONALITY OF YOUR TENT.**



For those who enjoy hiking and spending time in the great outdoors, a tent is a great way to spend time outdoors, but it's important to remember that taking care of your tent is almost as important as enjoying the trip itself. One of the most important pieces of equipment you'll need is in fact the tent, and it's essential to take good care of it to ensure it lasts for many trips to come.

Proper cleaning is key to maintaining your tent. After each expedition, make sure to remove all dirt, debris, and sand from the tent by shaking it out or using a soft brush. You should also clean the tent floor and flysheet with mild

detergent and water. Avoid using harsh chemicals or bleach, as these can damage the fabric and zippers.

It's also important to make sure your tent is completely dry before storing it. Moisture can cause mold and mildew to grow, which can weaken the fabric and cause unpleasant odors. If your tent is wet, set it up in a well-ventilated area to dry before storing it in its carrying bag.

Proper storage is crucial to maintaining your tent. Always store your tent in a cool, dry place, away from direct sunlight or heat sources. Avoid storing it in a damp or humid area.

Inspecting your tent on a regular basis is also an important part of tent

care. Check for any rips, tears, or holes, and repair them promptly to prevent further damage.

As mentioned earlier it is important to store the tent away from direct sunlight. This also applies when the tent is pitched. Direct sunlight can cause the fabric of the tent to fade, weaken, and even become brittle. The UV rays can also

cause the color to fade.

It's important to note that all our tents are treated with UV protection to help mitigate this effect, but it is still important to keep the tent out of direct sunlight as much as possible. Use a shaded area, or use a tarp or other shading device to protect it from the sun.







# THE BITS AND PIECES



## NYLON

The saying "a chain is only as strong as its weakest link" is often used to illustrate the importance of every part working together in a system. In the case of a tent, this means that even though the overall structure may be strong, if one of the smaller parts is weak or not functioning properly, it can compromise the integrity of the entire tent. This is why it is important to use high-quality materials and construction techniques in all parts of the tent, including the small bits and pieces like fastening devices, hooks, cups, etc.





OUR SMALL BITS AND PIECES ARE MADE OF FLEXIBLE NYLON, AND NOT HARD AND STIFF PLASTIC.

Tents consist of many different parts that work together to provide you with a comfortable place to sleep while on a trip. Some of these parts include small devices like fastening devices, hooks, etc., which are used to hold the tent together and ensure that it all stays in place through those harsh winter storms, freezing temperatures and ravages of time. These small bits and pieces are often easy to forget and neglect in regards to the the standards and quality that are put into the rest of the tent.

You have perhaps heard of ABS plastic. In fact most tents use this for the small bits and pieces. It is hard, it is light and somewhat

durable. However. It fails to deliver over time as ABS plastic is stiff and cracks when exposed to extreme cold and general wear and tear over time..

This is why our small bits and pieces are made of a somewhat flexible nylon, and not hard and stiff plastic. Nylon is a synthetic material made from long-chain polymers. It is known for being one of the strongest synthetic materials available, and it has a high strength-to-weight ratio. This means that it is very strong and durable, making it an ideal choice for us. ABS plastic is also more brittle than nylon, which can make it more susceptible to damage.

By choosing nylon

over hard hard plastic for the small bits and pieces, we strive to ensure that every part of our tents are strong, durable and reliable, helping to prevent any weak points that could compromise the overall structure. In this way, you can be confident that your tent will provide a safe and secure place to sleep, not only today but in

many years to come for your adventures and expeditions.





# POLES AND PEGS

## ALUMINUM

Aluminum is a great metal. It is lightweight, strong and durable, hence a good choice for use on hikes off the beaten track. It is our choice of metal for use in poles and stakes in all our tent models. It reacts little to other substances, but aluminum in its purest form reacts very readily with the oxygen in the air. Therefore it is also rare to find pure aluminum in nature. However, this is also an advantage with manufactured aluminum as the surface of the aluminum reacts readily with oxygen and forms a protective film on the surface of the metal so that the metal does not react further with the air. Aluminum in its purest form is not a strong metal. But by adding other metals to the mix, such as magnesium, copper and zinc, its characteristics can be adjusted to fit the desired purpose.





It is this alloy that determines, for example, whether your aluminum stake or tent poles should be strong, flexible, rigid, etc. Properties that vary in terms of what it should be used for. A center pole in our Lavvo should contain other characteristics than, for example, the tent stakes. The center pole of the Lavvo should be somewhat flexible so it can withstand being slightly bent (without breaking, of course). This is an important feature of the center pole as it is subjected to great forces and energy that tries to bend it. Same goes for the poles on Gamme series and Vern series as well. These poles should be even more flexible. We want some of the energy from the wind to actually bend the poles slightly instead of cracking it.

If we for example were to use the same aluminum alloy in the poles as in the tent stakes, the poles would have been very rigid and sooner or later cracked as a result of the

movement it is constantly subjected to. Especially when the tent is exposed to a lot of wind. The stakes, on the other hand, should contain an aluminum alloy that makes the stake a lot rigid but at the same time strong where the plug must withstand bending to a certain extent without breaking. The tent stakes are, as you know, mostly planted in the soil without any movement and do not need the same flexibility as for example a tent pole.

That is why we use different aluminum alloys for different applications. For our aluminium poles and pegs, we use the industry's strongest aluminum alloy of the 7000 series where the aluminum is mixed with zinc, magnesium, and copper. But the ratio between these are depending on if it is a pole, peg, etc. A pole needs to be very flexible where it is able to bend quite a bit without breaking. So both the pegs and poles are carefully designed and

manufactured based on what we think is necessary and appropriate for real adventures.

Although carbon poles are marginally stronger and lighter than aluminum, they are not as flexible. If they are bent, the carbon pole breaks a lot quicker. For the "lightweightjunkie" we do of course offer carbon poles. Because we want this to be your choice. But in general we actually recommend aluminum as aluminum is a very flexible alloy which can better be adapted to the different and special uses.







For the aluminum poles and pegs we use different factories. For our lightweight tents where every gram counts we use poles supplied by DAC. The featherlight DAC poles are specialized in providing thin, superlight, yet flexible and strong poles. But again, DAC poles are somewhat more expensive to produce and are only marginal stronger than our aluminum poles provided from other factories. However, we feel it is appropriate with DAC poles on our smaller tents where weight does really matter. As we do see a difference for the thinner and lighter poles comparing DAC poles with other factories. These are of

course important factors when going for an ultralight tent when providing a light, yet strong alternative.

This is by far not the same case when moving over to the thicker and bigger poles used on our bigger tents. Here we find close to no difference when it comes to strength, flexibility and durability. We have also put a lot of work into making these poles with the right flexibility and strength. As we want the poles to bend, not break when exposed to heavy winds or loads. This is also why we in fact do not see many of our poles actually break. If they for some reason do break, this is very often because of mistakes that are related with setting

up the tent.

So, for the aluminum poles used with our bigger tents, we use aluminum poles in cooperation with dedicated aluminum factories with our own aluminum alloy based on the 7000 series. Carefully picked factories that we know are able to live up to our standards.

For the aluminum poles used on our smaller tents where every gram counts, and the poles need to be

very thin, we carefully consider aluminum featherlight DAC poles.







### Mind the gap!

When setting up a tent, it is crucial to properly assemble the poles without any gaps between the joints. Gaps in the pole joints can significantly weaken the tent's structure and increase the risk of pole breakage during setup.

Proper pole assembly is not only important for the durability of the pole, but also for ensuring that the tent pitches properly. Gaps in the pole joints can cause the tent to be unstable and not pitch correctly, resulting in poor support and increased risk of collapse in high winds or inclement weather.

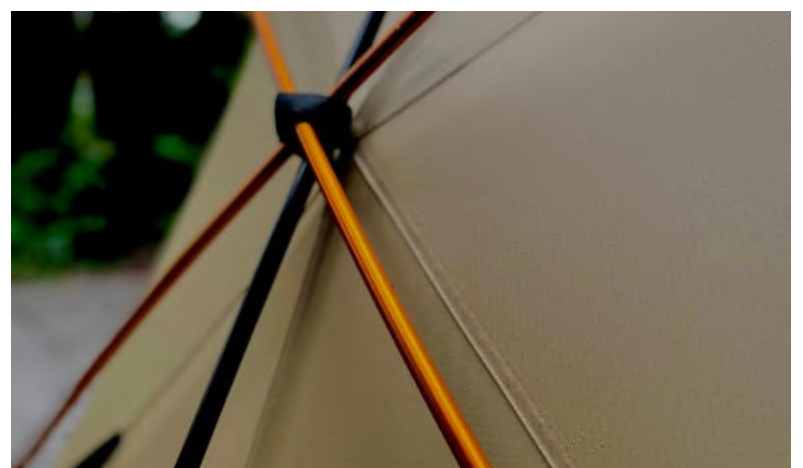
To ensure proper pole assembly, it is important to take the time to assemble the poles without any gaps. This may require some practice and patience, but it is essential to ensure the overall strength of the pole.

In conclusion, proper assembly of tent poles without any gaps between the joints is a critical step in the tent setup process.

Neglecting this step can increase the risk of pole breakage and damage to the tent, so it is essential to take the time to do it correctly and ensure the structural integrity of the tent during setup

### Excessive force

When setting up the tent, it is important to avoid using excessive force in any way. Using too much force can damage the tent's poles or fabric, potentially rendering the tent unusable. It can also lead to injury if a pole snaps. Rule of thumb: If you are using a whole lot of force when pitching the tent, you are doing something wrong. It is important to note that most breakage of tent poles occurs during pitching the tent as the poles are most prone to breakage at this stage. They are in fact constructed for optimal strength when installed to the tent itself.





# ZIPPERS



## THE IMPORTANCE OF A QUALITY ZIPPER

There is a wide variety of zippers to choose from out there. They are used in clothing, bags and all different types of gear. When the zipper fails the product often becomes useless.

In order to give the end user a less expensive product it may be tempting to cut cost on the zipper as it's a detail which is often overlooked by the consumer. We're of a different opinion

The devil is in the details and the tent is only as strong as its weakest point. We put clear emphasis on a high quality zipper. It must meet the same high standards that you set for the other parts of the tent, such as the flysheet, poles, straps etc. If not, the overall assessment of the tent becomes poorer and optimal choices with the other details lose significance.

That is why we have chosen the YKK zipper for all our product line. The brand dates back to 1934 and is world renowned for its strength, durability and reliability. The YKK is a zipper to be trusted throughout the lifespan of the tent.





The zipper is as mentioned very important. If it fails, parts of the tent gets pretty much unusable. In addition to a quality zipper your own use of it also matter. Taking care of the zipper is therefore essential to make it work as expected through the entire lifespan of the tent.

Keep away dirt, sand, etc. These small particles may be a silent workers on a mission to destroy your zipper. With that said. It may be a good idea to also clean the zipper regularly to keep it "fresh" and functional over time.. One tip once in a while is to rub the zipper with some candle wax. This will help the

puller to have a smooth glide on the zipper itself. We do not recommend using oil, etc as this may attract particles or even wander on to fabric of the tent. You do not want that.

Take care of the zipper and it will last the entire lifespan of the tent.







□□ **AFTER COUNTLESS OURS IN THE FIELD, WE HAVE FOUND WHAT WE BELIEVE IS THE OPTIMAL POSITION FOR THE STOVE IN A TENT. HENCE ALSO WHERE THE STOVE-JACK SHOULD BE PLACED ON THE TENT ITSELF.**



*Where is the most appropriate place for a stove in a tent?*

## THE PLAN

**First**, the obvious. To prevent the pipe or stove from coming into contact with the tent fabric, it is of course vital to keep these as far away from the tent fabric as possible. Placing the stove and pipe near the tent wall that often flickers or moves is not a good idea. Because of this, we have placed the stove-jack as close to the center of the tent as possible so that the stove and pipe are as far away from the tent-wall as possible.

**Second**. The stove-jack is placed as close to the center of the tent as possible. Another important reason for this is that this area is the most stable part on a tent. Where the flysheet flickers and moves least and is kept steady by nearby tent poles / center-pole. In addition, the wind moves directly over the flysheet in this area without being hindered in its way. The result is a quiet and stable fabric at the

center of the tent. This applies to most tents. If, on the other hand, the stove-jack is placed further down the tent wall where much of the energy in the wind is left on the wall itself, the pipe will at times be exposed to a lot of movement by the flysheet as this area flickers a lot more when the tent becomes exposed to wind. In the worst case scenario, the pipe may be pulled out of the stove or the stove will tip over due to large movement caused by the flysheet. This is not the case when placing the stove-jack longer up on the tent-wall, near the center of the tent. We therefore believe it is very appropriate to place the stove-jack as close to the center of the tent as possible, even if this steals a little more space inside the tent.

Our **third** argument for placing the stove-jack near the center of the tent is the distribution of heat from the stove. In a cabin much of the heat will be reflected from the walls back into the room. In a tent, the heat does not reflect back from the walls but rather penetrates the walls and vanishes outside. A stove at the center will

more evenly distribute the heat before it escapes through the walls.





# OUR TENTS





A person in a white winter suit is seen from behind, adjusting a dark dome tent on a snowy plain. The tent is set up on a metal platform. The background features a vast, flat, snow-covered landscape under a large, bright sun in a cloudy sky. The overall scene is serene and cold.

# GAMME SERIES





Our inspiration for this tent comes from an ancient Norwegian form of a hut. The Gamme has been used since the first people came to Norway thousands of years ago, providing a safe and secure shelter. It is still used today by indigenous Sami people of Norway.

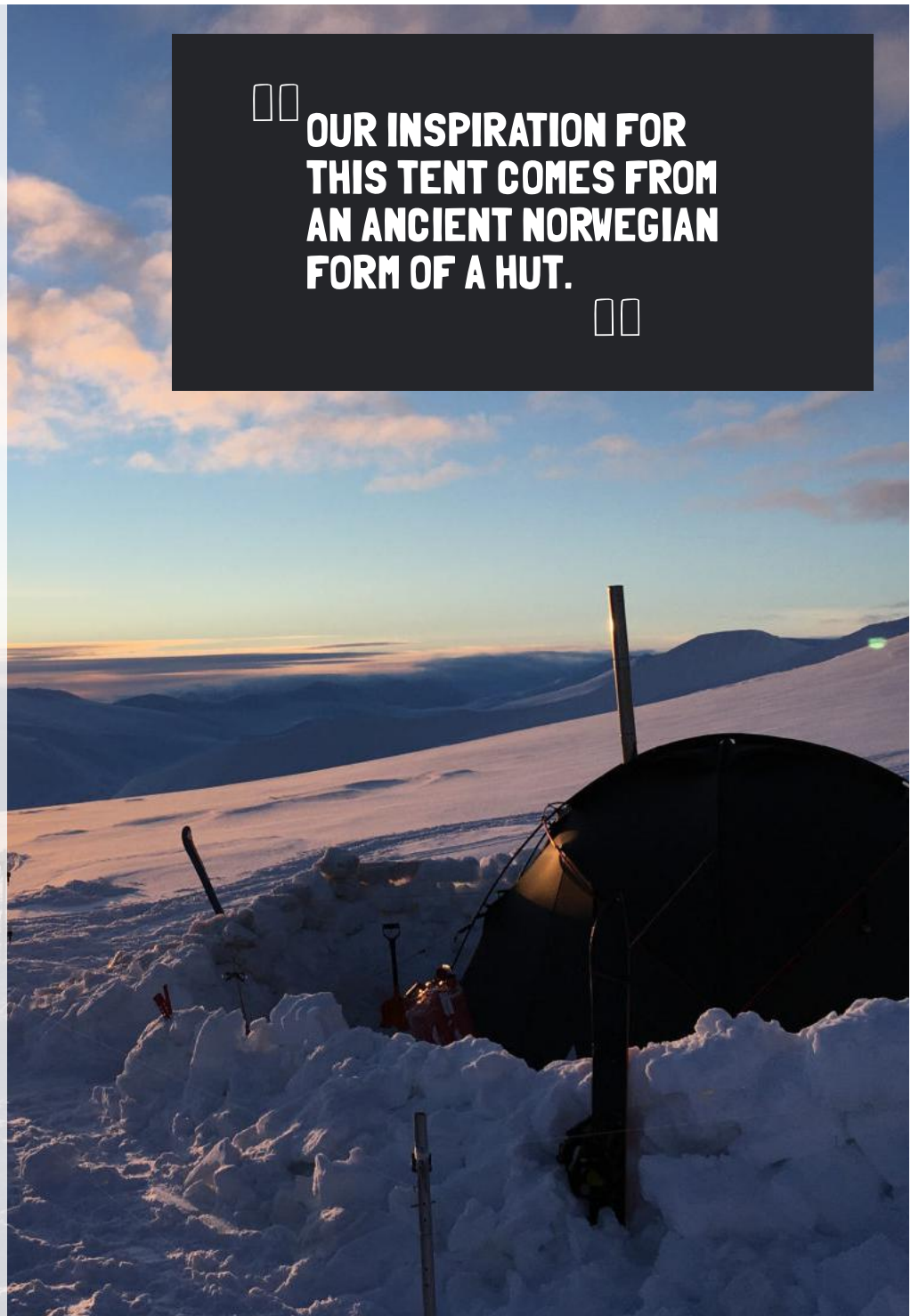
Gamme series has storm-flaps all around the tent to make the tent even more stable with snow, sand or stones over the flaps. A 4-season tent that provides shelter and protection in most conditions. Summer and winter. Even without the guylines, the tent stands very firmly in the wind .

Gamme is designed with a stove in mind. Being able to have a warm, pleasant, and cosy tent is something we believe lifts the adventure to completely new levels. While the storm rages outside with ice-cold winds and rain, one can enjoy an indescribable comfort inside the tent .

A truly versatile tent for the vast majority of adventures and expeditions.

□□ **OUR INSPIRATION FOR THIS TENT COMES FROM AN ANCIENT NORWEGIAN FORM OF A HUT.**

□□







LAVVO SERIES



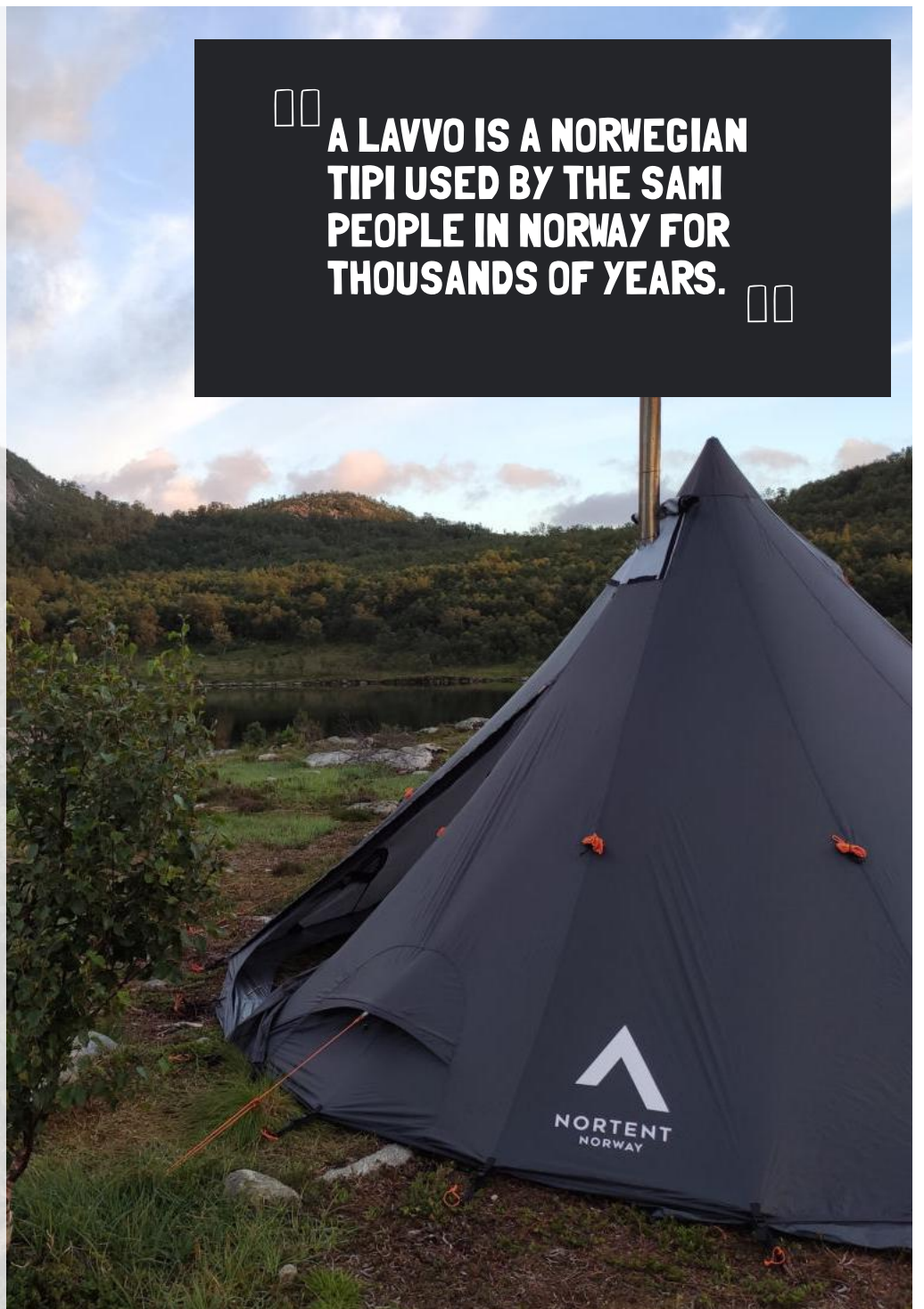


The Sami in Norway have through generations been in close contact with nature and has always sworn to the lavvo for protection against the harsh weather. This is also our inspiration when designing our Lavvo which is a Norwegian version of a tipi.

NORTENT Lavvo is a very flexible 4 season tipi. And is the result of a desire to develop a light tent that can be used in most situations. From family excursions to demanding walks in mountains and forests where comfort, flexibility, spaciousness and reliability are important factors.

Our Lavvo is lower than a traditional tipi. This is to achieve a perfect combination between comfort and aerodynamics. We have made a tipi with a relatively small angle so that the energy in the wind is not left on the flysheet, but is led up and around the tipi.

“ A LAVVO IS A NORWEGIAN TIPI USED BY THE SAMI PEOPLE IN NORWAY FOR THOUSANDS OF YEARS. ”





# VERN SERIES





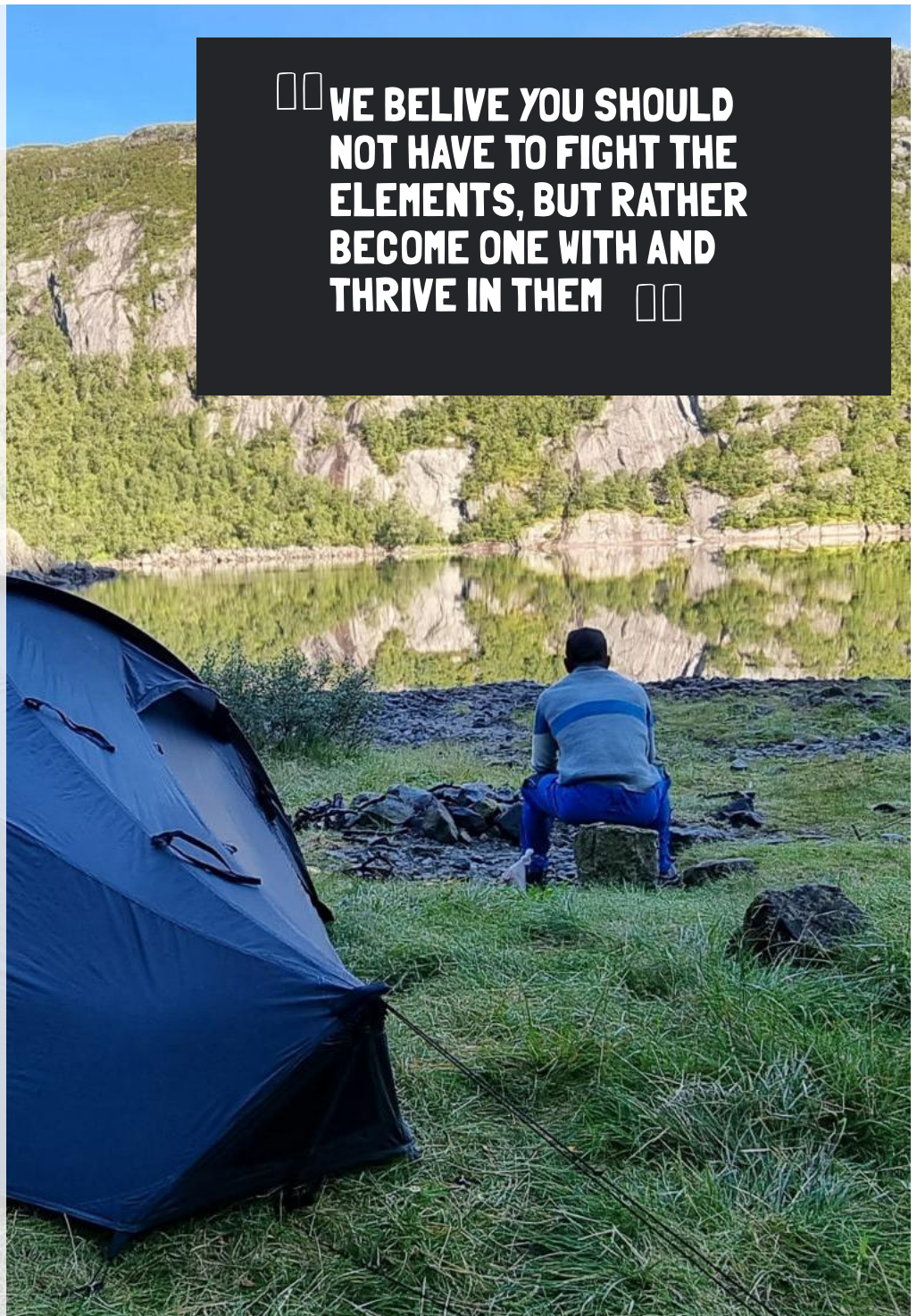


The tents in Vern series are extremely light tents for its size. Optimal for the longer hikes in mountains and over isolate plains where you really need a reliable shelter against the elements. With its aerodynamic shape and many possibilities for anchoring the tent to the ground, this tent is a true friend which will keep you safe in the different elements.

Vern is designed to provide clean and correct lines that blend in with nature. We have placed great emphasis on the tent being able to be set up quickly and easily without obstacles. With a little practice you should be able to set up the tent in 2-3 minutes where you can then crawl into a warm and safe sleeping bag.

You may use Vern through four seasons. When the snow falls, or during extreme weather, we recommend the use of the optional and extra crossing pole that runs over the entire long side of the tent. This pole stiffens the tent and makes it partially free-standing.

□ □ **WE BELIVE YOU SHOULD NOT HAVE TO FIGHT THE ELEMENTS, BUT RATHER BECOME ONE WITH AND THRIVE IN THEM** □ □





A photograph of a dark, conical tent pitched in a field of tall grass next to a lake, with mountains in the background under a cloudy sky. The tent is the central focus, with a single vertical pole extending from its peak. The scene is captured in a cinematic style with dramatic lighting. The text "KOIE SERIES" is overlaid in the center of the image.

KOIE SERIES

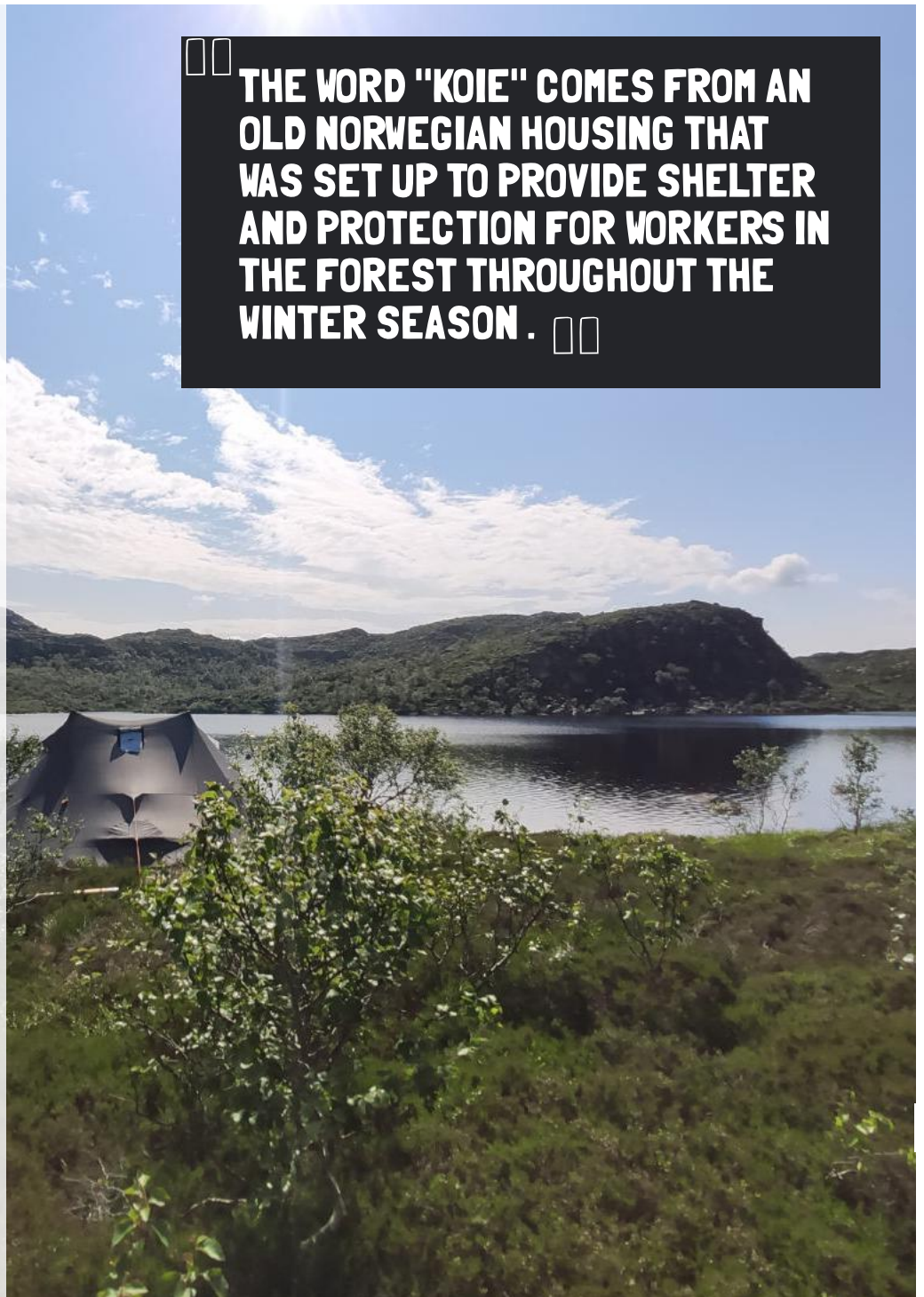




NORTENT Koie 7 is a very stable and solid tent. Koie 7 is designed to accommodate a "large" number of people, but still withstand a lot of weather. We have equipped Koie 7 with as many as 11 guylines in addition to 22 fasteners for stakes that encloses the tent. This gives a very solid and "fixed" tent that does not care that much when the wind increases. You simply avoid a lot of the flickering in the tent fabric you often experience with other tents as the 33 attachment stabilizes the fabric in such a way that the fabric itself is somewhat steady, stable and fixed..

Koie 7 is designed with a stove in mind. Being able to feel warm, pleasant and comfortable in a tent is something we believe lifts the whole outdoor experience to new levels. While the weather rages outside with icy winds and rain, you could enjoy a comfort inside the tent with 20-30 degrees Celsius. The location of the stove in Koie 7 is placed in the center of the tent where you may easily enjoy heat from both sides of the tent.

☐☐ **THE WORD "KOIE" COMES FROM AN OLD NORWEGIAN HOUSING THAT WAS SET UP TO PROVIDE SHELTER AND PROTECTION FOR WORKERS IN THE FOREST THROUGHOUT THE WINTER SEASON . ☐☐**





# TARPS







Our tarps come in two different designs.

The **Bivuakk** is a Norwegian word that originally comes from military units to describe a simple, temporary camp outdoors where it will provide shelter from the elements. A bivuakk is basically meant to provide shelter and protection for one soldier or a small group of soldiers who are left alone out in the woods or mountains. This is also our inspiration for this lightweight, simple and versatile design that will provide a safe shelter.

The **Helleren**. The word "helleren" is actually a Norwegian name for a type of overhang carved in the mountains giving a natural shelter for both animals and humans. Our Helleren packs down to a very small gear, weights almost nothing and takes up very little space in the backpack. Helleren is sewn in a so-called catenary cut. We have chosen this cut to reduce movement and flapping of the flysheet when it is windy.

☐☐ **OUR TARPS ARE PERFECT FOR THOSE WHO REQUIRE A TRULY ULTRALIGHT ALTERNATIVE THAT PROTECTS YOU FROM THE THE ELEMENTS, BUT WHERE AT THE SAME TIME YOU DON'T WANT TO COMPROMISE ON DURABILITY AN QUALITY . ☐☐**







**NORTENT**  
NORWAY

**IT'S NOT JUST A TENT. IT'S A NORTENT.**

