

**HOW
TO CHOOSE
THE RIGHT
UNDERSUIT**

How to choose the right undersuit ?

Are you planning to buy your first undersuit or the new one and you are wondering which one to choose?

The following advices should be helpful when buying.

The aim of the undersuits is to provide the comfort while diving. However there is no universal undersuit for each temperature of the water. It is important to select the undersuit adequate to the water temperature. When choosing the undersuit you have to pay attention to several important issues.

1. Thermal protection tailored to individual needs

The undersuit is designed primarily to ensure thermal protection when diving, which is simply to ensure thermal comfort under water. Each of us has his own individual thermal comfort - some feel better in a slightly cooler conditions, others prefer a higher temperature. Thermal comfort can be controlled by choosing one or more layers of clothing under drysuit. Accordingly composed layer of underwear, vest lining and further warming will match your outfit to the type and location of diving

2. Moisture

A very important feature of a good undersuit is moisture on the outside, it means breathing material from which it is made. This is especially important during decompression when we remain in the water for quite a long time barely moving. Good quality lining that drains the moisture off allows us to feel dry and comfortable.

It is important to remember that the undersuit should be worn on the thermal underwear such as merino or other breathable fabrics.

3. Windproofness

Another important issue, often not mentioned by dive clothing manufacturers is windproofness. When going for diving the weather conditions are not always perfect; often it is windy or raining.

After removing the drysuit we often remain in the undersuit for some time. When the wind blows outside, often we can get cold. So let's put on material which protects against wind and moisture in the air.

4. Dive time and temperature of the water

Comfort of diving will depend on the water temperature in which you plan to dive as well as the time remaining under water. Water removes heat from the body 25 times faster than air, which means that under the water, even the warmer, without adequate protection for our body cools much quicker and feels cold. The longer you stay underwater and the lower temperature is, the greater need for a thicker lining.

It is worth noting that, statistically, women under water feel thermal discomfort faster, so they need a thicker warmer, or more layers to protect against hypothermia.

If you are planning a short diving (up to one hour) then even in cool water an undersuit with the lining of lower weight is enough. However if you are going for a longer dives in deep waters or you know that decompression will be needed, then even if temperature of the water is higher, it is worth wearing warmer undersuit or even the heating system.

Suitable thermal protection will allow you to enjoy diving longer without discomfort associated with cooling.

5. Size of the undersuit (properly chosen size ensures comfort of the movements)

You need to have full comfort of the movement underwater, consequently the undersuit should be adjusted to your type of figure. When choosing the undersuit please note that you will be wearing it on the thermal underwear or additional warmer such as heating vest. When choosing the new undersuit you should take that under consideration.

You also need to know that when the undersuit is too large it will not only fold under the drysuit restricting freedom of movement, but will also require taking additional, eg. 2 kg of ballast.

6. Material

The type of the fabric, from which the undersuit is made of, is really significant. Good quality undersuits usually consist of 3 layers: inner, middle and outer.

- The inner layer is the thinnest material, eg. Fleece, which is designed to comfortably fit to the body.
- The middle layer is the main insulating layer. Its quality, thickness and the technology influences the comfort level of thermal insulation, the appropriate balance between the water and the length of dives.
- The outer layer should facilitate the installation of the drysuit and cause the removal of moisture from the body on the outside as well as to protect against wind.

The image shows two pieces of dark blue wetsuit undersuits. The left piece is a long-sleeved top with a ribbed collar and cuffs. The right piece is a long-sleeved bottom with a ribbed waistband and cuffs. Both pieces feature the 'flex190' brand name printed vertically in white on the upper arm area. The background is dark and out of focus.

flex190

flex190

**Which SANTI
undersuit choose?**

Which SANTI undersuit choose?



SANTI has in its offer 8 undersuits.

The line consists of undersuits designated for diving in the waters from the warmest to extremely low.

Below a scheme how to choose the undersuit according to temperature of water. Remember, if you appreciate high thermal comfort, regardless of water temperature and dive time, you might want to put on a thicker undersuit.

UNDERSUIT TYPE	WATER TEMPERATURE																					
	0°C	1°C	2°C	3°C	4°C	5°C	6°C	7°C	8°C	9°C	10°C	11°C	12°C	13°C	14°C	15°C	16°C	17°C	18°C	19°C	20°C	
SUMMER																						
LIGHT CDS 40																						
COMFORT BZ 200																						
FLEX 190																						
EXTREME BZ 400/200																						
EXTREME BZ 400																						
EXTREME BZ 400 HEATED																						

Our undersuits:



FLEX 190

- Dedicated to dive in the water from 7 to 14°C, or at higher temperatures for longer dives.
- Light, takes up less space than a standard undersuit.
- It does not cause any movement restrictions under the drysuit.
- Made from patented material Climashield Contur® with weight of 180g/m² - a modern, breathable fabric that provides great flexibility and extensibility in all directions.
- From the inside and outside covered with soft insulating layers of polyester.
- The top layer is windbreak.



BZ 400X EXTREME (male and female versions)

- Dedicated to dive in the water in temperature from 0°C.
- Ideal for long and deep dives requiring decompression, even in warmer waters.
- Made of Thinsulate™ BZ 400, recommended by 3M as by far the most optimal for thicker diving undersuits. Compressed, takes up less space under the drysuit. It has also pressed in a layer of fine mesh that reinforces the entire structure.
- The insulating layer even after flooding keeps the temperature and protects against hypothermia.
- The construction designed to avoid “Cold spots” or places through which the generated heat could escape.

EXTREME BZ 400 HEATED



- Dedicated for diving in waters with very low temperatures.
- Ideal for long and deep dives requiring decompression.
- Designed as part of a heating system consisting at least of the undersuit, thermo valve or connector and the external battery.
- Undersuit designed to wear on a thin layer of thermal underwear or merino. In this configuration, most of the generated heat is transferred directly to the diver's body.
- Breathable insulation Thinsulate BZ 400 allows comfortable heating of the body and discharge sweat outside.
- The insulating layer even after inundation keeps the temperature and protects against hypothermia.
- The construction designed to avoid "Cold spots" or places through which generated heat could escape.
- The maximum heating temperature: 45°C, power output: 110 W.
- Operating time: Battery 10 Ah / about 70 minutes of heating, the battery of 20 Ah / about 140 minutes of heating.
- The heating cable coated with a new generation of ultra soft silicone insulation resistant to fracture.
- The innovative braided cord resistant to high temperatures and intersection.

SANTI has in its offer other types of the undersuits, adapted to the different needs of both comfort and water temperature:



BZ 400 / 200

- also ideal for long deep dives requiring decompression. The main difference between BZ 400/200 and BZ 400X Extreme is the fact that in this undersuit body and legs can be custom made with a combination of thicker and thinner lining BZ, which allows greater freedom of movement.



COMFORT BZ 200 (for women and men)

- recommended for dives in water temperature from 7 to 14°C - the selection of an appropriate underwear can be used during long dives, in extremely difficult conditions.



LIGHT CDS 40

- ideal under neoprene drysuits, where important issue is the removal of moisture away from the body and to dive in the warm waters. It can also be used under trilaminate drysuits, recommended for dives in the warm waters.



SUMMER

- ideal as a light lining to a very warm waters, or as an extra layer of insulation instead of underwear.

TM

SANTI

Description:

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