SEAL

SEAL SL:01

Drysuit

Product information

1 → Origins

The drysuit built for exploration

SEAL SL:01 was created because of one simple reason: there was no drysuit good enough to match all needs of divers exploring the caves and wrecks in remote areas and often in extreme conditions.

There's a choice of very strong Kevlar-reinforced suits on the market, and there are also lightweight suits and some that provide nice maneuverability. But there was no drysuit, which would ensure all of these features together.

To create SEAL SL:01, we worked with explorers supported by XDEEP Exploration Support Program for over two years. We have built five generations of the suit and several different prototypes. We spent tons of hours underwater. But what was also important, we hired designers with over 20 years of experience in building protection suits for the military special forces.

The final result is outstanding: SEAL SL:01 combines high reliability, unmatchable freedom of movement, and low weight as none of the drysuits on the market.

2 → Features

Unique „Double-Shell Reinforcement"

Up to now, all drysuits were made in the same way. In some, the fabric is thicker, in some thinner, but all in all, the construction is always the same. To create the drysuit robust and lightweight simultaneously, we had to think out of the box.

Through the years of exploration supported by XDEEP Exploration Support Program, we noticed that 90% of drysuit fails usually happen in specific areas. Exposed parts of the shoulders, lower parts of the legs, forearms – all the parts of the suits which are often in close contact with the rocks, reef, or parts of the wreck.

All we know, that double-layer BCDs are far more resistant to puncture than single-layer constructions. The two thinner layers of fabric are much stronger and resistant to puncture than one thick layer of fabric. Instead of using heavy and rigid Cordura or Kevlar-reinforced fabric, we created a concept of Double-Shell Reinforcement.

The drysuit is made of very strong but lightweight and flexible trilaminate, which significantly improves the freedom of movement.

The exposed parts (shoulder area, top areas of the forearms, pockets area) are covered with the military-grade 500D Cordura, similar to the one used in indestructible STEALTH 2.0.

The critical parts, like bottom parts of the forearms, knees) are reinforced with even stronger material: Superfabric – a resin-protected fabric that is almost impossible to cut using a knife.

But what is unique, base layer (trilaminate) and protection layers (Cordura and Superfabric) are not bound together. As both layers of the fabric can move against each other, the drysuit is extremely flexible and provides an unprecedented level of comfort and maneuverability.

2 → Features

Purely technical cut

The traditional drysuits have a very simple cut. It simplifies the made-to-measure production, which is convenient to the manufacturer, but the shape is far from optimal. In some areas, there's too much material, which creates air pockets, while some parts are not flexible enough.

From the very beginning of the project, we forced our designers to push the shape to the absolute limits in terms of freedom of movement. Some of the ideas came straight from the protection suits used by the special forces.

But it was not the end: we not only used the expertise of our own designers but asked for help from guys who manufacture the apparel used by climbers.

The shape of SL:01 makes it more expensive in manufacturing, but once you put it, you feel it fits like a glove.

Easy entry zipper

Did we mention that SL:01 is influenced by the military suits used by the special forces? One of the critical features of the military drysuits is putting them on in a very restricted area (e.g., inside the armored vehicle).

We had two goals in terms of the zipper: easy entry and avoiding contact with the harness. With the final line of the zipper, we succeeded in both. The zipper location makes donning and doffing much more effortless and extends the zipper life by moving it away from the shoulder straps of the harness.

2 → Features

3D pockets

The pocket construction has its own story. Through the project, we've changed the pocket position and construction at least seven times.

Different configurations and environments put different requirements to the pocket size and location. Instead of copying the most common position of the pockets, we've created several prototypes and tested them in sidemount and backmount configuration, with two and four cylinders and being empty and full of gear. Finally, we adjusted them to provide easy access while keeping the diver streamlined.

But the position is one thing. Usability and streamlined profile are equally important. SL:01 pockets have 3D construction, which makes them flat and streamlined when empty, but at the same time spacious enough to keep all necessary stuff.

World's best materials and craftsmanship

Perfect cut and unique features would be nothing without the quality.

Throughout all design-phase, we've been very radical in terms of quality. We've tested several different materials, checked each of them in the laboratory, used them in our prototypes just to be sure that the fabrics will match the design quality.

3 → Specification

Part ↓	Parameter ↓
Suit type	Trilaminate drysuit, front entry
Main fabric	Nylon-polyester trilaminate with a sealed butyl layer, Ferguson-Polycom fabric 414g/m2
Forearms and knee protection	Cut-proof and abrasion-proof Superfabric 600107
Shoulder and top forearms protection	Cordura 500 dTEX
Stitch sealing	Chloroprene rubber tape with three layers of glue
Pockets	Two 3D pockets located on thighs
Weight	2.7-2.9 kg depending on the configuration

4 → Available options

You can order the drysuit according to your individual requirements. The list of available options is as follows:

Part ↓	Standard ↓	Available options ↓
Drysuit shell	Nylon-polyester trilaminate with a sealed butyl layer	
Elbow and Knee pads	Superfabric	
Arm and pockets reinforcement	Cordura	
Zipper	Plastic TIZIP Masterseal 10	Metal Dynat G2 CR/PU
Inflation valve	Si-Tech Skeleton	Apeks Low Profile
Exhaust valve	Si-Tech Gaude	Apeks Low Profile
Pockets	Two 3D pockets	
Neck seal	Latex	Silicone, Neoprene
Wrist seals	Latex	Silicone
Wrist/Cuff Rings	None	Si-Tech Antares
Feet protection	Trilaminate sock	Neoprene shoes