

Diving a Drysuit

Mike Ault, Copyright: 5 July, 2006

I am sure almost everyone has heard of a wetsuit. A wetsuit is basically a skintight neoprene rubber suit that divers wear to shield them from heat loss. A wetsuit shields the diver from heat loss by controlling the amount of water that comes in contact with the diver, limiting it to just enough to allow the divers own warmth to keep the water warm. The thickness of the neoprene determines how cold the water outside the suit can be and the diver still be comfortable. About the maximum thickness is 7 mm (about ¼ inch) and that will protect a diver in water in the range of 50-60 degrees.



Author in a 7mm Semi-Dry Suit

50 to 60 degrees you say, that doesn't seem so cold...well...the water transfers heat at 20 times the rate that air does. At 50 to 60 degrees a person will go hypothermic in a matter of minutes without a proper exposure suit. At 70 degrees you can get hypothermia as well, it may take a bit longer.

Now, what if the water is colder than 50-60 degrees? You could go with thicker wetsuits but then your mobility will be greatly restricted. The answer is called a drysuit. As its name implies a drysuit has seals that eliminate all water movement, that is, no water gets in, hence its name, drysuit. A drysuit provides no insulation, the diver must wear essentially, "long underwear" (called fleeces) that provides the needed insulation, keeping the diver warm.



Author in a set of Fleece

I recently got to dive a drysuit, the one I purchased was a great deal from www.divetank.com. I highly recommend them by the way, I purchased a Bare Nex Gen 200Z 2006 drysuit, it is made from trilaminate material, very light weight, very flexible and very easy to don and remove. Divetank provided the suit, neoprene dive hood, fill hose and the bag to carry it all for less than \$650.00, I needed it right away so I had to fork over a bit for the next day shipping, but considering most drysuits run greater than \$1,200.00 this was an outstanding deal.



Author's Drysuit

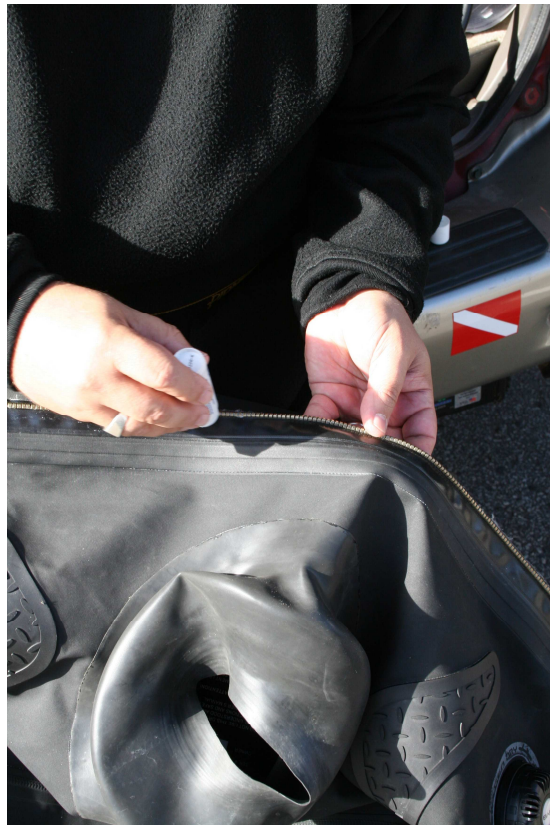
First I prepared the buoyancy control device (a stainless steel back plate with an inflatable wing), the regulators and the doubles air tanks. You do this first because if you put on the full suit before setting up the rest of your equipment you risk getting heat stroke or becoming dehydrated while doing the setup operations.



Back Plate, Wing and Doubles with Regulators

To prepare the suit for use, first you must be sure the seals (in this suit at neck and wrists) are properly trimmed, otherwise you could choke, trigger various physical problems, or

cut off circulation. Most seals are either neoprene or lycra (rubber). The rubber seals are marked with rings that provide cutting guidelines. For my suit I had to remove 1 ring from the neck seal which I did by placing the neck seal over a scuba bottle and then carefully following the ring boundary with my dive knife (which is razor sharp.) The wrist seals fit without trimming. A hint (provided by a fellow diver), use mild baby shampoo as lubricant to allow your hands to slip easily into the seals. Also, before each dive, you treat the zipper seal with bees wax to help seal it.



Waxing the Zipper

Once the seals fit I put on my lycra dive skin, the fleece under suit (provided with the suit) rather like a fleece jogging suit, my dive socks, then donned the drysuit. Then, before pulling the neck seal over my head and sealing the suit up, I put on my neoprene over booties over the soft boots that were part of the drysuit. My suit is a rear entry suit meaning the sealing zipper is on the back. My suit has the zipper across the shoulders, requiring a second diver to help. My dive buddy closed the zipper and seated the zipper pull into the seal.



Zipper Seal Open and Closed

Next, you put on your weight belt if you are using one (some BCDs have built in weight pockets, and some drysuit divers prefer a weight harness instead of a weight belt) and then don your BP/W/regulator/tank assembly. Since we were diving a quarry (Dive Haven, White Georgia) we carried the mask and fins down to the waters edge to put them on, however, don't, as I did, drop your second fin into deep water while putting on your first, necessitating your dive buddy do a search and recovery operation!



Weight Harness

I also just bought a new mask strap, it has the full neoprene pad on the back and rather than rubber or lycra straps, uses nylon straps. I had problems with mask flooding as a result until we made sure that the mask was properly tightened and that no neoprene from the dive hood was stuck under the edge of the mask seal. After the mask issue was dealt with the dive went without a hitch.

We then did several ascents and descents to allow me to get a handle on using the combination of the drysuit and BCD to control suit squeeze and buoyancy. One issue many new drysuit divers trained using PADI have is that the PADI material says to use the drysuit to control buoyancy. This is incorrect.

You see the drysuit has an attached fill line from the low-pressure side of the first stage regulator, this is supposed to be used to relieve what is known as suit squeeze. Suit squeeze is caused by the pressure of the external water pressing the suit up tight against your body, a short burst of air provides for a thin layer of air in the suit to eliminate this. However, the suit should not be used for buoyancy control! You still use the BCD or BP/W just as with a wetsuit. The suit also has an outlet valve that controls how much air is retained in the suit, it ranges from all the way shut to all the way open and adjusts by clicks, we set mine to 4 clicks off closed.



Outlet Valve

Once I got at least a beginning understanding of this needed control (after 5 ascents/descents) we did a normal dive at about 30-40 feet (51 degrees) and let me report I was comfortable except for my hands, I forgot my 5mm gloves and only had my light weight reef gloves to wear for the dive.

Overall I enjoyed the dive, learned the fundamentals of drysuit diving and had a great day with the other members of the Lake Lanier Loonies (we are considered Looney because

we dive Lake Lanier year round.) I am also looking forward to my next drysuit dive (probably on July 4th.)