



How do they do it?

Waterproof breathable fabrics consist of an outer layer called the "face fabric", usually made of nylon or polyester, and a laminated membrane or coating, usually made of ePTFE (expanded Polytetrafluoroethylene, also known as Teflon®) or PU (Polyurethane). The purpose of the face fabric is to protect and look stylish; it's not waterproof but is treated with a solution called DWR (Durable Water Repellent) so it doesn't soak up water. The job of keeping the water out is left to the membrane, which has tiny holes too small to let liquid water enter but large enough to allow water vapor to escape. Since contamination with oil, sweat and many chemicals causes PTFE membranes to lose their ability to keep out water, the membrane is protected by an ultra-thin layer of Polyurethane (GORE-TEX® membranes have a bi-component laminate structure) or other oleophobic (oil-hating) treatment (eVent™ does this at the microscopic level with individual PTFE fibers). Finally, a fine scrim or mesh is bonded to the inner surface for comfort in 3 Layer (3L) fabrics. 2 Layer (2L) fabrics receive a separate fabric liner, while 2.5 Layer fabrics use an abbreviated pattern screened on the inner surface to save weight. Modern waterproof breathable fabrics have come a long way since the original GORE-TEX®, and most are extremely waterproof at any price point, but outstanding gains in breathability in the past few years have redefined the market in high exertion outerwear.



GORE-TEX® 3 Layer fabric construction



GORE-TEX® 2 Layer fabric construction



GORE-TEX® 2 Layer insulated fabric construction

How waterproof a garment do I need?

We recommend a minimum waterproof rating of 5,000 mm for ski and snowboard outerwear. If you ride primarily in cold and clear conditions and take regular lodge breaks this level of protection could be fine, but anything less and you stand a good chance of getting wet and cold in a storm. Clothing rated between 5,000 mm and 10,000 mm is a good choice for riders who spend long days out and ski or snowboard in any weather conditions. Avid snowsport enthusiasts, especially those in wetter climates, should look for waterproof ratings in the 10,000 mm to 20,000 mm range or better. If you spend a good percentage of your time in the backcountry or hiking or skinning to remote locations, breathability becomes equally as important as waterproofing – look for outerwear with both waterproofing and breathability in the 20,000 plus range. As you might expect, higher ratings in both categories will usually mean higher prices.

Remember that while a 20,000 mm rating may sound impressive, a hard day of riding in wet conditions with the added pressure of wind, sitting, and falling puts even the most waterproof fabrics to the test.