

## Understanding Product Terminology and explanations

### What is DWR?

DWR stands for **Durable Water Repellence**, it is the chemical coating applied to a fabric to increase its ability to shed water. It helps prevent your garment absorbing water (this is known as wetting out), which not only makes the garment heavy and slow to dry, but also impacts the materials breathability.

### The Importance of Durable Water Repellence (DWR)

When water hits a brand new waterproof/water resistant jacket, it will 'bead up' and run off. This is because the surface has a **Durable Water Repellent (DWR)** coating. A poorly-maintained jacket will often 'wet out', with water soaking into the face fabric. When this happens, the flow of moisture from within the garment is disrupted. Vapour can't escape because it is blocked by the water droplets drenching the face fabric. If this occurs the wearers may feel wet. This wet sensation is caused by trapped sweat building up inside the wetting-out jacket, not by any leak.

- A DWR affects only the exterior of rainwear and is separate from a laminate or coating.
- Its purpose is to protect the face fabric from becoming saturated, weighing it down and causing sensation of dampness.
- A DWR accomplishes this by causing water to bead up and roll off the garment's exterior.
- DWRs do not inhibit fabric breathability.
- Abrasion, grime and, to a lesser degree, laundering reduce DWR performance.
- To remain optimally effective, DWRs must be regularly cleaned and periodically renewed using spray-on or wash-in products.

### When Do DWRs Need Maintenance?

Test your rainwear by sprinkling or spraying some drops on its exterior. Does it bead up and roll off?

If you give the fabric a single strong shake, does most of the moisture fly off?

If the water sits on the fabric and that section begins to darken slightly, water is making its way to the fibres and wetting the fabric. It's time to revive your DWR.

### Breathability

Breathable garments do not 'stop' you sweating or producing moisture, which is a natural response, but allow drying to happen quicker than a non-breathable garment. Breathability is particularly important in active wear.

The benefit of water droplets being large is that moisture vapours from sweat are smaller, meaning when the garment is created to be both waterproof/water resistant and breathable, it can be. Waterproofing and breathability work together. As the factory-applied DWR coating breaks down, the waterproofing technology in a garment has to work harder to keep water out. This means that the balance between breathability and water resistance alters. The garment has to work even harder to keep water out; therefore it is unable to be as breathable as it once was. This sitting water blocks the pores through which vapours usually pass freely.

### What is Hydrostatic Head?

Hydrostatic Head is the measure of how water resistant a material is. It measures how tall a column of water the fabric can hold before water starts to seep through the weave. A Hydrostatic Head of 20000mm means that a tent fabric could hold column of water 20000mm (2.0m of head).

20000mm of water exerts more pressure on the fabric than a 10000mm of water, so a more accurate description of Hydrostatic Head is the measure of water pressure equivalent to 2.0m of water.

The higher the Hydrostatic Head value, the more water resistant a fabric is, and the more water pressure it can withstand before it leaks. If a product leaks it does not mean the garment is faulty but the garment fabric has worked to its designed ability to withstand water ingress.

### **What is “MVTR”?**

**MVTR** stands for “**Moisture Vapour Transmission Rate**“, a measure of the passage of gaseous H<sub>2</sub>O through a barrier.

**MVTR** is measured in a special chamber where it is divided vertically by the substrate/barrier material. A dry atmosphere is in one chamber, and a moist atmosphere is in the other. A 24-hour test is run to see how much moisture passes through the substrate/barrier from the “wet” chamber to the “dry” chamber.

### **How to Wash STEIN Evolution Jackets**

Everyday dirt and residue can build up on the surface of your clothing affecting the garments breathability and water repellency.

Water resistant clothing with DWR treatments should never be washed using ordinary powder detergent or fabric softener. The chemicals in everyday detergent can break down the composition of the fibres with each wash and strip the fabric of its waterproof coating (DWR). A cleaner specifically designed for technical outdoor wear is recommended. Use a Performance Cleaner designed for waterproof/water resistant materials, or use a combined Wash & Proof product, which will clean and re-proof your garment in one.

- Before washing brush off any loose mud or dirt. Fasten up all zips and Velcro fasteners.
- Make sure the detergent compartment of your washing machine is clean of any detergent or softener (for the reasons described above). You may also wish to run your washing machine on a hot wash with nothing in it to clear any residues from detergent or softeners.
- Pour the appropriate amount of the performance cleaner into the detergent compartment.
- Place your garment/s in to the washer. Do not wash your waterproof clothing with others items or more than two garments at any time.
- Allow the washing machine to run through the complete wash and rinse cycle at max 40 degrees. A higher wash temperature will seriously damage garments affecting the taped seams and material laminates.
- After washing your garments un-fasten all zips and allow to air dry only. **Do Not Tumble Dry** as the heat from dryers also can seriously damage the taped seams and laminate lining.
- If after washing your garment it is absorbing rather than repelling water you will require to reproof your garment.
- You do not need to reproof your garment each time you wash but it is recommended to reproof when necessary.
- Remember to always check the label of your garment for exact care details.