



EMPEL®, setting a new paradigm for DWR testing and performance.

EMPEL® The New Testing Protocol: Built for Real-World Performance

Durable Water Repellent (DWR) finishes are often evaluated using basic surface tests that don't reflect how products are actually worn. As the industry continues to transition to PFAS-free water-repellent solutions, performance failures are increasingly occurring under motion, sustained rain, and repeated use—not at first contact.

EMPEL evaluates water-repellent performance using a multi-stage testing protocol that measures the root causes of wet-out and loss of protection. Performance in DWR is the primary driver for customer satisfaction

The Bar Has Been Raised: These are the metrics that matter. Brands get proof. Consumers see outcomes.

<p>Motion & Flex Performance</p>	<p><i>What it evaluates -</i> How water repellency holds up as fabrics bend, flex, and move during wear.</p>	<p><i>Why it matters -</i> Many PFAS-free finishes wet out once fabrics are in motion. Testing under flex conditions reveals performance loss that static tests miss.</p>	<p>01</p>
<p>Initial Water Repellency (Spray Testing)</p>	<p><i>What it evaluates -</i> Surface beading and water shedding at first exposure.</p>	<p><i>Why it matters -</i> Spray testing establishes a baseline—but it does not predict performance under prolonged rain or movement.</p>	<p>02</p>
<p>Sustained Heavy Rain Performance (Bundesmann)</p>	<p><i>What it evaluates -</i> Water repellency under continuous, heavy simulated rainfall combined with fabric movement.</p>	<p><i>Why it matters -</i> Most real-world failures occur during prolonged rain, not short sprays. Bundesmann testing exposes saturation and wet-out risk over time.</p>	<p>03</p>
<p>Wet-Out & Pass-Through Control</p>	<p><i>What it evaluates -</i> The amount of water that penetrates through the fabric during rain and motion.</p>	<p><i>Why it matters -</i> Surface beading alone does not ensure dryness. Pass-through testing determines whether water reaches the inside of the garment—the true measure of protection.</p>	<p>04</p>
<p>Durability & Wash Performance</p>	<p><i>What it evaluates -</i> Retention of water repellency after repeated washing and wear.</p>	<p><i>Why it matters -</i> DWR performance must last beyond first use. EMPEL evaluates durability across multiple wash cycles to ensure long-term performance.</p>	<p>05</p>
<p>Moisture Absorption & Dry-Time Performance</p>	<p><i>What it evaluates -</i> Water uptake, weight gain when wet, and drying speed after exposure.</p>	<p><i>Why it matters -</i> Fabrics that absorb less water are lighter, dry faster, and retain warmth—especially in cold or wet conditions.</p>	<p>06</p>
<p>(Detailed results are available upon request)</p>			



EMPEL is a PFAS-free DWR technology applied to the outer surface of textiles. Unlike traditional coatings that soak into the fabric and wash out quickly, EMPEL is pressed into the fibers - without using water or PFAS - providing long-lasting, high-performance water repellency.

Sheds water. Longer.

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