

High-Performing,
Durable Repellency
Textile Finish



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HeiQ Barrier Eco – Ecological Water Repellency



Environmentally-friendly textile effect: Fluorocarbon-free.

HeiQ Barrier Eco keeps garments ecologically dry, and enables textiles to durably handle rough weather conditions.

Actively prevents the outside of a textile from becoming saturated with water. This undesirable «wetting out» leaks water and reduces a garment's breathability.

It is ideally suited for outdoor apparel especially jackets, hiking pants, fleece and footwear.



The original
Fluorine free...





How does a duck stay dry without fluorine?

“It’s like water off a duck’s back...”

Ducks stay dry – even during rain.
Feathers are naturally extremely water-repellent.



Their secret lies in a fatty secretion and in numerous linked feather strands possessing a very small contact surface.

How can garments stay durably dry without fluorine?

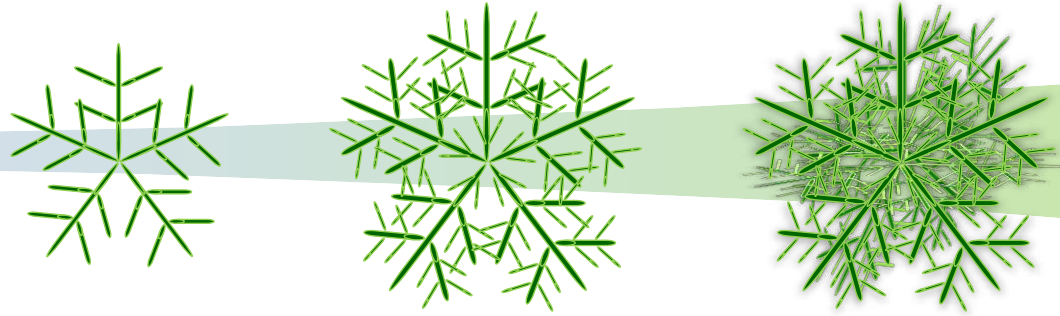
The answer is **HeiQ Barrier Eco** – a hydrophobic textile effect providing durable water-repellent performance with the help of special hyper-branched polymers.



Bio-Inspiration

HeiQ Barrier Eco imitates the efficiency of a duck's feathery coat
– water repellency completely free of fluorocarbon

Its technology mechanism lies in hydrophobic, hyper-branched polymers
– comparable to interleaved snow flakes:



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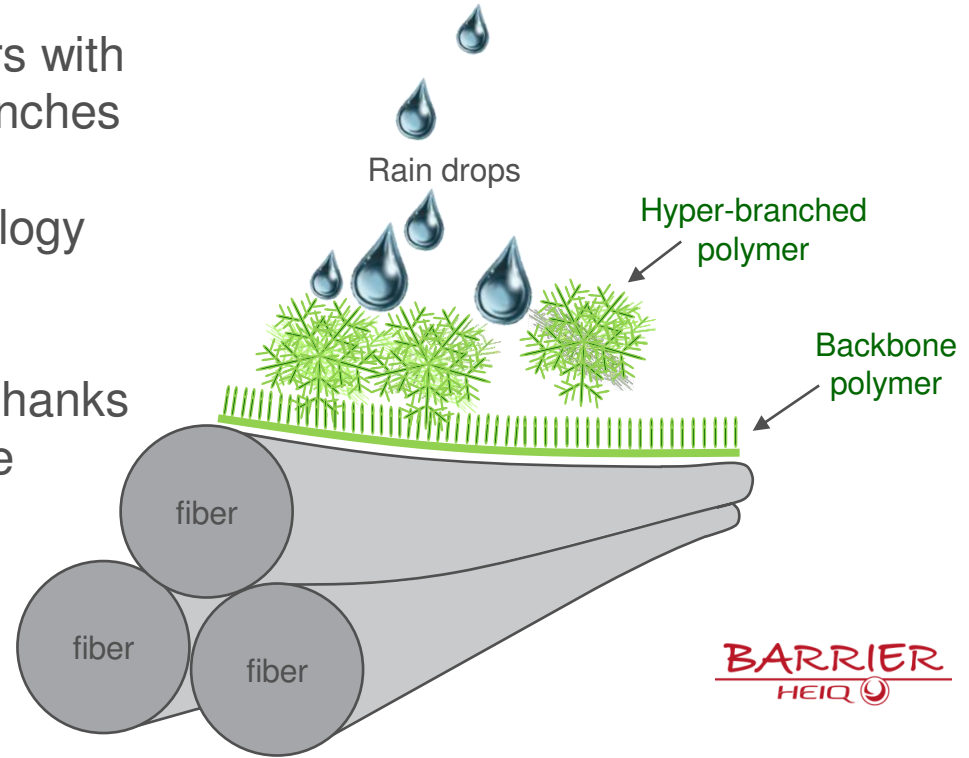
Hyper-Repellency with Hyper-Branchery

Hyper-branched carbon polymers with a large number of functional branches

Self-assembling polymer technology with rapid crystallization

Firm anchorage to textile fibers thanks to strong polyurethane backbone polymer

Building a 3D surface structure to provide water repellency



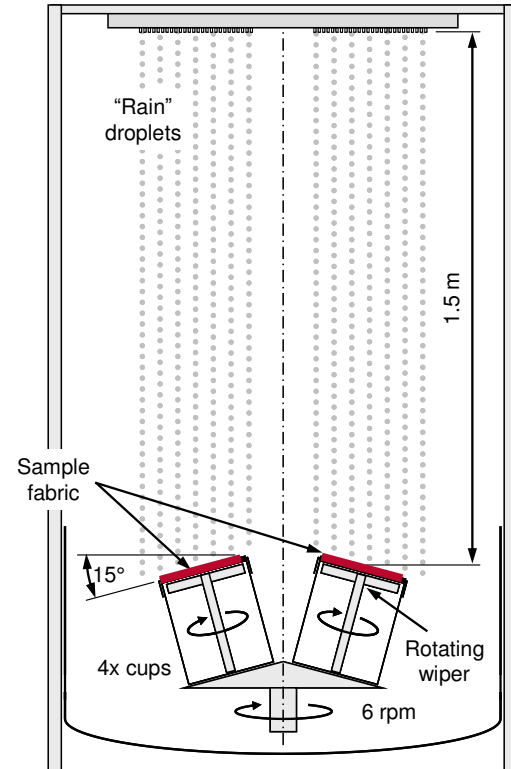
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Repellency Test Methods: Bundesmann Rain Test

Fabric sample exposed to defined rain conditions for a period of 10 minutes.

Degree of water repellency is assessed visually and rated according to a standardized scale. The weight of water absorption is measured for each fabric sample.

HeiQ Barrier Eco: 5/5
→ best performance



ISO 9865 method: Bundesmann test setup



Repellency Test Methods: Spray Test

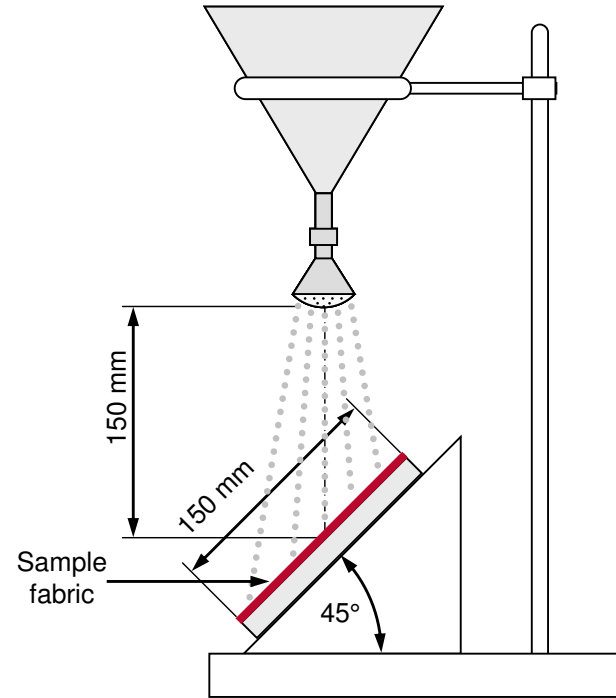
250ml of water is uniformly sprayed on a fabric specimen mounted at an angle of 45°.

The Spray rating is determined by comparing fabric appearance with descriptive and photographic standards.

HeiQ Barrier Eco: 100/100

After 10 home laundry washings (40°)
plus ironing: 100/100

→ best performance



ISO 4920/AATCC 22 method:
Spray test equipment configuration



Repellency Test Methods: Roll-Off Angle Test

The angle at which a droplet of any liquid rolls-off the fabric is an indicator of the repellency power of the fabric

Static roll-off angle: A water droplet is applied to the surface of a flat fabric sample that is initially oriented horizontally. Fabric sample is gradually inclined and inclination angle where the droplet begins to roll down is the static roll-off angle.

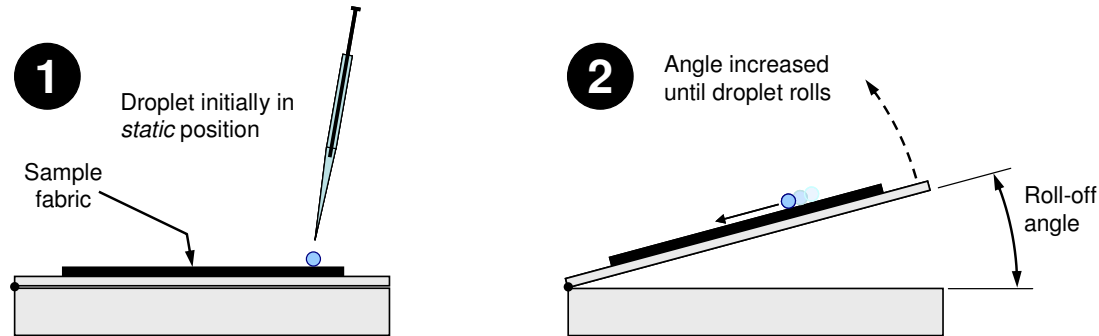


Diagram of the static roll-off angle method

Ecological Footprint

- No fluorine: no PFOS, no PFOA
- No waste water burden
- No organic halogen compounds
- No water toxicity
- No oral toxicity
- No AOX value



HeiQ BARRIER Eco is THE
alternative to fluorocarbon finishes!





Working with HeiQ Barrier Eco

- Highly durable water repellent treatment
- Strong abrasion resistance
- Perceptible soft handle
- No compromise on breathability due to paraffin free technology
- Optimum sewability
- Good laundry-air-dry (LAD) behavior
- Suitable for all types of textile fibers
- Complies to EU REACH
- bluesign pending



BARRIER by HeiQ

BARRIER by HeiQ is a patent pending product platform encompassing a wide product range including HeiQ Barrier Eco.

BARRIER by HeiQ stands for **high-performing** and **durable repellency** textile treatments for outdoor apparel.


End-to-end support incorporating:

- Innovative product development
- Analytics and validation
- Customized manufacturing
- Ingredient branding and sales
- Regulatory affairs support

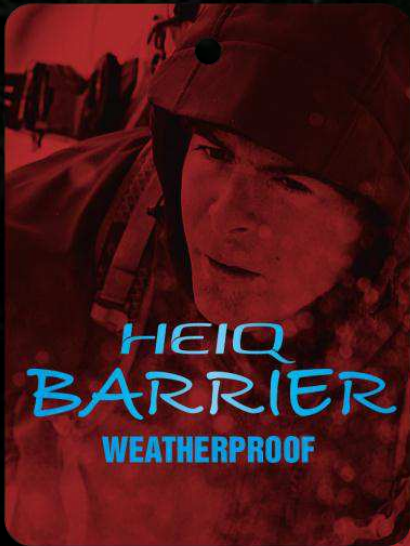
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Repellency Effects: Meeting Each Demand

	High-performance Oil & Water Repellent	Ecological Oil + Water Repellent	Ecological  Water Repellent
	HeiQ Barrier – C8	HeiQ Barrier – C6	HeiQ Barrier – Eco
Basis	Fluorocarbon polymer (C8 components)	Fluorocarbon polymer (C6 components)	Hydrocarbon polymer (hyperbranch structure)
Contains Fluorine	Yes	Yes	No
PFOA, residues	Traces (< 40ppb)	No	No
Water repellency (spray)	+++	++	++
Water repellency (rain)	+++	++	++
Oil repellency	+++	++	*
Durability (laundry)	+++	++	++
Durability (abrasion)	++	++	+++
Handle impact	Medium/High	Medium	Low

* Oil repellency is only possible with fluorine-based products.



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Thank You For Your Interest



Your contact:

Sergio Taruselli
Regional Sales Manager Italy

taruselli@heiq.com

O: +41 56 250 68 50

M: +39 3479765369

F: +41 56 250 68 51