

The Future of Insulation: Built for Extreme Cold

No Cold Spots. More Breathable.

Continuous performance.



— HIGH-TECH MEETS NATURAL INSULATION

Productivity Safety Performance



Premium insulated workwear engineered for the cold-weather worker — the warmth of down, the consistency of a fabric, in a thinner, tougher build. When warmth means work.

**THIN.
DOWN.**



THE PROBLEM

Cold Makes Workers Slower, Weaker, and Less Safe.



HANDS

Cold reduces dexterity and grip, forcing workers to use more force on tools.

– OSHA



MUSCLES

Cold decreases muscle power, increases stiffness, and slows nerve conductivity.

– Farbu et al., 2022



BRAIN

Cold slows reaction time and impairs working memory during critical tasks.

– Falla et al., 2021

Warmth prevents injuries, frostbite and hypothermia.

Cold steals hours, performance, and long-term health

603

shifts analyzed in a 2025 field study linking workplace temperature to work-time loss

~18°C

thermal optimum — work-time loss rises as conditions move colder than this point

3.9×

higher odds of chronic multi-site pain for workers who often feel cold at work

10–30%

productivity loss reported in cold-stress conditions in construction, mining, and oil & gas

Sources: Ioannou et al. 2025; Farbu et al.; cold-work productivity reviews. Full citations in appendix.

Work Doesn't Stop When It Gets Cold. Bad gear might.

Sweat builds. Temperatures spike and crash. Layers slow you down.
Traditional insulation was never engineered for a working environment.

Too Hot → Too Cold

Moisture buildup triggers flash cooling and energy loss mid-effort

Constant Adjustment

Workers can't stop to layer, delay, and manage comfort instead of performing

Energy Bleed

Sweat makes workers uncomfortable, cold makes work slow.





THE REFRAME

Cold-Weather Gear isn't a Comfort Line Item. It's a Performance System.

The research is consistent: thermal stability preserves dexterity, strength, cognition, and long-term health. OSHA recommends warming controls – including clothing – as cold-stress mitigation.

"Every dollar spent on better insulation is an investment in workforce output."

What if insulation could be....



- Free of cold spots
- Breathable
- Perform during hard work and while standing still
- Customizable to specific needs
- Made in any factory in any region
- More than a commodity...





Insulation Was Built for Standing Still. Until Now.



Traditional Down

- Clusters shift → uneven warmth distribution
- Quilted construction creates defined cold spots
- Downproof fabrics kill breathability
- Collapses when wet → total warmth failure

Traditional Polyester / Synthetics

- Traps heat and moisture against the body
- Limited vapor transport → sweaty buildup
- Irregular coverage → inconsistent protection
- Poor thermal efficiency
- Poor long-term durability

THINDOWN: No Compromise Warmth, Breathability, and Comfort



THE BREAKTHROUGH



Uniform Insulation, Engineered for Breathable Performance.

"We turned down into a performance fabric."



Continuous Even Structure

Real down clusters bonded into a continuous, stable sheet — zero migration, zero cold spots,



Breathable

Air and vapor permeability built directly into the insulation layer itself



Customizable and Specialized

Water-resistant Down and scrim, Odor control, and FR technologies support full range of worker needs and working environments.



Thindown Performance Comparison

SUPERIOR CLO AT LOWER WEIGHT

Thindown (45gr) vs. 80gr Synthetic Jacket

Insulation	Thindown (45gr)	80gr Synthetic
Clo value	2.5	1.8
Garment weight	300g	400g
Fill weight	N/A (45gr fabric)	80gr
Breathability	High	Medium



Superior performance across many dimensions

	Blown Down	Synthetic	THINDOWN
Breathability	Low	Limited	High
Cold Spots	Many	Limited	None
Hot & Cold Cycles	High	Limited	Thermo Regulated
Durability	Yes	Poor	Engineered to last
Weight	Lightweight	Heavy	Best Warmth:Weight
Mobility	Limited	Limited	High

Footwear – **Thindown Dimension** in Development for 2027



No baffles. No bulk. No boundaries. Thindown provides high CLO in a lightweight, breathable package for midsole and upper applications.

Current Development:

- **Compressed and enhanced**
Pre-compressed Thindown made from unique fiber blends for durability and longevity
- **DWR treated insulation**
DWR treated down blended with hydrophobic fibers
- **Odor Control built in**
Treated with Thindown Fresh to discourage development of bacteria and odors.

Customized Finishes for Performance Improvement

Repel

Water-resistant down technology for enhanced weather protection without compromising breathability or performance. Nikwax DirectDry treatment surpasses 25,000 minutes of shake time.

FR

Fire-resistant down meets safety requirements for professional and industrial applications.

Fresh

Anti-microbial treatment maintains freshness, reduces bacterial growth during extended wear and reduces washing frequency. Aegis MicrobeShield



SUMMARY



A new generation of insulation:

- Minimal Weight
- Improved Mobility
- Breathable and comfortable
- More control
- Fewer Layers
- Fewer injuries
- Improved Range of Motion
- Improved Productivity



WHAT WE DO

THINDOWN IS A NATURAL INSULATION COMPANY
HERE TO **UNLOCK THE AMAZING POTENTIAL OF NATURE.**
OUR REMARKABLE DOWN FABRICS REDEFINE THE WAY
DOWN CAN BE SOURCED, MANUFACTURED AND UTILIZED.

