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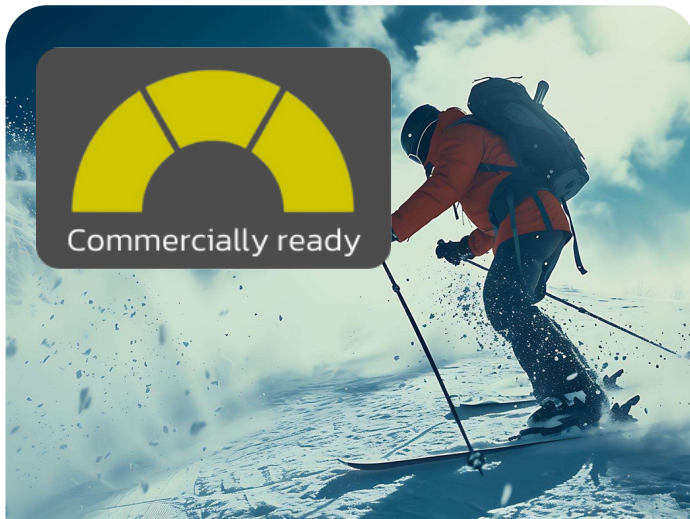
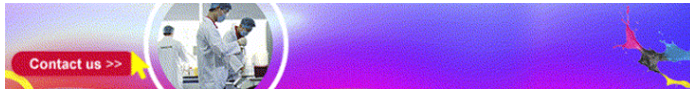


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9 April 2024

Thermal insulation from recycled PET bottles

By **Abigail Turner**

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+ Understanding the commercial readiness scale

Thermore specialises in the research, development, production and marketing of high-quality thermal insulation for apparel. Abigail Turner speaks to the company about its Ecodown material in outerwear garments.



Sustainability and functionality go hand-in-hand in Spanish outdoor brand OS20's lightweight Oswald jacket. Created with 95% of recycled materials, the jacket has been specially designed for fast and intense outdoor winter activities such as ski mountaineering.

The jacket has been created with two Gelanots fabrics, designed specifically for the project, and two different Thermore Ecodown synthetic insulation materials. Using body mapping and thermograph techniques, the materials used are placed on the body where the specific properties are needed.

Milan, Italy-based Thermore first made contact with OS20 at ISPO 2022 and discussed a shared vision of a functional and lightweight garment that was also entirely sustainable and animal-free.

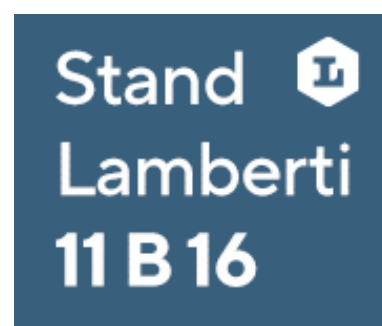
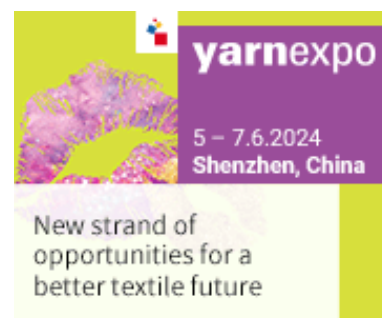
A Thermore spokesperson says: "The Oswald Thermore Ecodown jacket is crafted with two of our products: Ecodown roll padding and Ecodown Fibers Loft, loose fibre products. Both are 100% recycled from PET post-consumer bottles. These insulations are strategically combined in different parts of the jackets according to thermographic studies and body-mapping to gain a remarkable fusion of technology and functionality."

The jacket was named winner of the ISPO 2023 award in the Mountain Textile Category, due to its high functionality and lightness.

Thermore specialises in the research, development, production and marketing of high-quality thermal insulation for performance apparel. Through its global sales network and its production facilities in the Far East and Europe, the company caters to brands in the outerwear industry.

"As pioneers in the field, we were the first to introduce sustainable insulation back in the 80s. Today, we continue to innovate utilising polyester fibres recycled from PET [polyethylene terephthalate] bottles, thus combining environmental responsibility with cutting-edge technology," adds Thermore.

What is the Ecodown?



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WHAT IS THE ECODOWN?

Thermore explains it has always been committed to environmental preservation and recycling. For example, outerwear insulated with Ecodown can save up to 10 bottles per garment, and using PET bottles instead of oil helps to protect energy reserves for future generations.

“We firmly believe in ethical product development that benefits global consumers: making a better world has always been fundamental to Thermore’s R&D department,” says the company.

Thermore adds that it has “always been a top priority” that all its thermal insulation products deliver consistent and durable quality, to provide warmth in winter and outdoor sports. The company adds that its standards “are often stricter than those used at most independent laboratories”.

Ecodown has traditionally been the sustainable alternative to down feathers. The synthetic Thermore Ecodown aims to feel like real down in that it is ultralight but, unlike down, it retains its loft, even when wet. Moreover, this insulation is incredibly durable, and its one-of-a-kind multi-shape structure allows high resistance and prevents it from clumping when washed.

The ISPO jury said: “Right from the first touch and try on, the jacket impressed with its lightness, pleasant feel and comfortable fit. The choice of material is well thought out and perfectly suited for intensive winter activities.”

Thermore first launched its Ecodown fibres light in 2021. The soft ultralight free-fibre insulation is 20% warmer than comparable products, according to ISPO. The fibres are also packable with weight ranges from 60–130 grams per square meter, according to the baffle size, which ranges from 3–10 cm.

After launching the first versions of Ecodown Fibres, of Ecodown Fibres Loft for puffy jackets and of Ecodown Fibres Soft with a super silky touch, in 2019 Thermore added colour to the material with black. Then in 2020 brought light and 2.0 to the platform. There are now five different fibres in the Ecodown Fibres collection.

Recycled stretch insulation

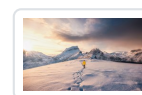
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“We have always been driven by a philosophy of doing things differently – and better. We’re here to innovate and we never stop working on innovations, pushing the boundaries of thermal insulation technologies and trying to anticipate and fulfil our customers’ needs,” says a spokesperson. “Stay tuned, as there are already some incredible new breakthrough innovations in the pipeline.”

Thermore’s new Thermore Freedom material

The company has recently debuted its “most dynamic” stretch insulation, Thermore Freedom. It consists of numerous micro gaps that move and adapt to the body, in keeping with every movement. The material recovers to 100% of its pre-stretch size “time after time”.

Made from 50% post-consumer recycled polyester, this insulation offers stretch while providing warmth across a multitude of uses including alpine sports, running, golf, commuter, fishing and hunting, cycling and a host of other active pursuits.

Thermore explains: “The new Freedom insulation adds a higher level of comfort and functionality than what was previously attainable in the stretch category.”

The company adds: “It’s machine washable and can be dry cleaned. Plus, it is design friendly for product developers with its high resistance to fibre migration. In fact, Thermore has solved the issue of fibre migration with a proprietary finishing process that keeps the polyester fibres stabilised during normal wear and machine washing.”

What is the future for Thermore?

Thermore says: "We're probably more like a tech company – and you see how much tech companies still protect their technologies: companies that innovate can never be 100% transparent or they will lose their competitive edge.

"There's quite a lot to be protected in order to continue growing our business and avoid our technology being compromised. Despite that, we rely on independent certifications that are globally recognised such as the GRS, bluesign and OekoTex standards."

Thermore has always been committed to environmental preservation, sustainability, and recycling. The team are still innovating thermal insulation for apparel by continuously investing most of its resources in research and development, as it "firmly believes that innovation has always been a key component to global success".

"Thermore firmly believes in ethical product development which benefits global consumers: making a better world has always been fundamental to Thermore's R&D department. We have consistently been at the forefront of thermal insulation technology and our R&D team diligently works on exploring the latest trends and crafting innovative products," says the company.

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