

Thinsulate™ Insulation Celebrates 30th Anniversary

3M's novel idea of "warmth without bulk" changed the look of winter outerwear

The creation of Thinsulate™ Insulation is a great example of 3M's company-wide commitment to innovation and ingenuity. In the late 1930's, the "nonwoven" technology that evolved into Thinsulate insulation was born from a late night experiment conducted by 3M scientist Al Boese. Using equipment that normally heated and kneaded rubber for taping materials, Boese used the machine to bind and create microfibers from clumps of cellulose acetate. While the new microfiber technology had many applications, 3M did not begin testing the material for insulation purposes until 1973, a good five years before Thinsulate insulation made its official debut.

"3M had fine-tuned the technology by the mid-1960's and in the early 1970's we committed our resources to bringing the benefits of microfiber technology to clothing insulation," said Paul Zimmerman global brand manager for Thinsulate insulation.

When launched in July of 1978 the "fat look" in outerwear was the style, in fact, just about everyone owned a puffy down coat or vest. Thirty years later -- the world has embraced the concept of thin insulations doing the job of goose down, however, in 1978 that was a novel idea that many outdoor enthusiasts weren't completely convinced would work. Initially introduced in apparel accessories, Thinsulate insulation became a brand consumers would look for in wintersport and lifestyle applications.

The secret to Thinsulate insulation lies in the extremely fine microfibers, many times smaller than conventional polyester fibers, which provide much more surface area. This greater surface area allows the fibers to hold or trap more air that keep in more radiant heat from the wearer, thus helping to create a warmer garment.

The original laboratory team that developed Thinsulate™ Insulation, first applied the material to gloves — using flatter, denser material composed of 100 percent olefin microfibers to make the insulation compression resistant. As research continued, the team developed Type C, a combination of 65 percent olefin microfibers and 35 percent standard polyester fibers.

Thinsulate™ Insulation was tested in Minnesota's severe winter weather by airport baggage handlers, postal workers and lift operators at Lutsen Ski Resort in Northern Minnesota, as well as construction workers on the Alaska pipeline, early tests concluded that Thinsulate insulation provided nearly twice the warmth of most commonly used insulators – when equal thicknesses were compared. The fibers in the new insulation also absorbed less than 1 percent of their weight in water, helping the insulation to dry quickly and retain its shape.

Although a new concept in 1978, the idea of "warmth without bulk" appealed to many well-known outerwear manufacturers including Sierra Designs, Calvin Klein, Head Sports, London Fog and Grandoe – whose designers were inspired to create sleek, body-hugging cold weather garments with Thinsulate insulation.

From its initial launch in 1978, Thinsulate insulation has become one of the world's most recognized brands in the outerwear, footwear and accessories markets.

About Thinsulate insulation

Introduced 30 years ago, Thinsulate insulation was the original "warmth without bulk" insulation. Since the inception of Thinsulate insulation, 3M has continued to look for more innovative and high-tech warmth products for today's active, outdoor enthusiast. The current line of Thinsulate insulation products includes Thinsulate Lite

Loft™ insulation, Thinsulate Ultra insulation, Thinsulate Supreme insulation and Thinsulate Flex insulation. For more information, visit www.3M.com/Thinsulate.

About 3M

A recognized leader in research and development, 3M produces thousands of innovative products for dozens of diverse markets. 3M's core strength is applying its more than 40 distinct technology platforms – often in combination – to a wide array of customer needs. With \$23 billion in sales, 3M employs 75,000 people worldwide and has operations in more than 60 countries.

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