

Type M ORIGINAL

Product Description

3M™ Thinsulate™ Insulation (Type M) products are comprised of 100% polyester fibers. This insulation is designed as a mid-loft product.

Intended Uses

Outerwear, sportswear and workwear (gloves and other accessories require M80 or greater).

Fiber Composition

U.S. Convention:

Insulation:
100% Polyester

ISO Convention:

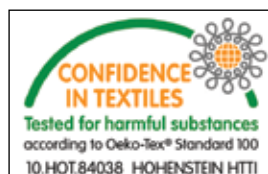
Insulation:
100% polyester

Flammability

Class 1 — Normal Flammability, according to procedure described in 16 CFR Part 1610, Federal Flammable Fabrics Act.

Restricted Substances

3M™ Thinsulate™ Insulation (Type M) meets the harmful substances requirements of OEKO-TEX® Standard 100 and has been awarded the OEKO-TEX® Certificate for Product Class 1 by Hohenstein Institutes (meets the human-ecological requirements of the standard presently established for baby articles).



Article meets the bluesign® criteria

3M™ Thinsulate™ Insulation (Type M) articles carrying the bluesign® approved label meet the strict safety and environmental criteria of the bluesign® system. These articles are made from bluesign® approved chemical products and raw materials and are produced in a resource conserving way with a minimum impact on people and the environment.



Available Widths

3M™ Thinsulate™ Insulation (Type M) is available in 60" roll widths (nominal) (1.52 m) with a 2" inside core diameter.

Properties

Typical Values*	3M™ Thinsulate™ Insulation (Type M)			
	Basis Weight		Thermal Resistance (R _{cr}) ASTM F 1868	
	g/m ²	oz/yd ²	clo	m ² °K/W
M60	60	1.8	≥ 0.8	≥ 0.12
M80	80	2.4	≥ 1.2	≥ 0.19
M100	100	2.9	≥ 1.5	≥ 0.23
M150	150	4.4	≥ 1.9	≥ 0.29
M200	200	5.9	≥ 2.3	≥ 0.36

* Values represent the averages of the population of lots at date of publication

$$\text{Clo (R}_{cr}) = \frac{(0.18 \text{ °C} \times \text{m}^2 \times \text{hr})}{\text{K cal}}$$

Construction Guidelines

GENERAL MANUFACTURING GUIDELINES

3M™ Thinsulate™ Insulation products need to be properly used in order to produce their intended benefits in apparel and related articles. For this reason, specifiers, garment manufacturers and converters need to abide by the construction guidelines and care instructions in this Technical Data Sheet, as well as by the proper end-article placement and coverage guidelines in the *Product Usage Requirements (PUR)* brochure. It is primarily the garment manufacturer's/designer's responsibility to assure their end customers' satisfaction by:

1. Selecting appropriate shell and lining fabrics, including findings and recommended scrims for the intended application.
2. Following the construction guidelines supplied by 3M for the design and manufacture of each garment.
3. Determination of the proper care instructions (taking into account 3M recommended care instructions) and creation of the appropriate label to be sewn into each garment.

GENERAL FABRIC RECOMMENDATIONS

Downproof fabrics are not required for many 3M™ Thinsulate™ Insulation products. However, when 3M™ Thinsulate™ Insulation is used with fabrics that are not downproof, you should determine the potential for fiber migration from the insulation to the fabric surface.

- Fiber migration due to wash durability can be detected by sewing a pillow of the garment components — following the construction guidelines — and washing it five times as recommended. Observe the fabric surface for protruding fiber ends.
- Fiber migration caused by other mechanisms can be assessed by submitting fabric samples to the 3M laboratory through your 3M sales representative.

Intervening fiberproof scrims are required when using 3M™ Thinsulate™ Insulation next to textured fabrics and either water-resistant or waterproof fabrics (e.g., coated fabrics, micro-coated fabrics, waterproof breathable fabrics, etc.). Scrims may be added either during the final garment assembly process or during the lining/insulation quilting process at a 3rd party converter. In addition, it is recommended that openings or vents be designed into the bottom of those garments which use water-resistant or waterproof fabrics. This will help the water to be expelled more easily during the agitation and water extraction steps while laundering, and which in turn will help improve the insulation's durability.

CONSTRUCTION GUIDELINES FOR GARMENTS

Allow 24 hours for recovery of 3M™ Thinsulate™ Insulation (Type M) after removal from vacuum pack.

This insulation may be quilted using conventional quilting equipment. Quilt spacings less than 4" are not recommended in order to maintain maximum warmth. Channel quilts of 4" to 7" are recommended. **Thorough garment testing is necessary for quilt dimensions outside of the recommended range.**

Weights less than 80 g/m²: Must be quilted either in channels of 4" to 7" or in diamonds of 4" × 4" to 6" × 6".

Weights 80 g/m² or greater: Free-hangable in edge-stabilized constructions of up to 22" × 22" or channels of 4" to 7".

For scrims, please consult your 3M sales representative. Fiber migration should be expected with textured fabrics, micro-coated fabrics or taffetas, especially for constructions having less than 86 picks. Applications with textured, coated or waterproof breathable fabrics may also cause abrasion due to surface friction. **All constructions, regardless of pick count, should be evaluated for fiber migration.**

For questions, contact 3M Home Care Division Customer Service at 651-575-6694.



To reduce the inhalation of fibers or airborne dust, always use an appropriate respirator when the cutting or processing of rolls is expected to produce fibrous or airborne dust.

IMPORTANT: The above is not a complete exposition of the construction guidelines. Refer to the 3M™ Thinsulate™ Insulation brochure *Garment Manufacturing Construction Guidelines and Care* for details and limitations. Also, the use of 3M™ Thinsulate™ Insulation (Type M) needs to adhere to the 3M™ Thinsulate™ Insulation *Product Usage Requirements (PUR)*.

Care Instructions



Garments made with 3M™ Thinsulate™ Insulation (Type M) may be home machine washed or professionally dry-cleaned depending on the garment manufacturer's recommendation. Care instructions from the garment manufacturer need to be followed to ensure integrity of the overall garment.

INSTRUCTIONS FOR: MACHINE WASH ONLY GARMENTS:

- + Machine wash cold (30 °C, 85 °F), delicate cycle. Use only non-chlorine bleach when needed. Tumble dry, low heat. Do not steam press. Steam only or use cool iron.

DRY-CLEAN ONLY GARMENTS:

- + Professionally dry-clean only. Tumble dry, low heat. Do not steam press. Steam only or use cool iron. Dry-cleaning may reduce loft.

WASH OR DRY-CLEAN GARMENTS:

- + Machine wash cold (30 °C, 85 °F), delicate cycle. Use only non-chlorine bleach when needed. Tumble dry, low heat. Do not steam press. Steam only or use cool iron or professionally dry-clean.

IMPORTANT NOTICE

WARRANTY: In the event any 3M™ Thinsulate™ Insulation product is found to be defective in material, workmanship or not in conformance with any express warranty for a specific purpose, 3M's only obligation and your exclusive remedy shall be to repair, replace or refund the purchase price of such parts or products upon timely notification thereof and substantiation that the product has been stored, maintained and used in accordance with 3M's written instructions.

EXCLUSIONS TO WARRANTY: THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY OR CONDITION OF QUALITY, EXCEPT OF TITLE AND AGAINST PATENT INFRINGEMENT.

LIMITATION OF LIABILITY: Except as provided above, 3M shall not be liable or responsible for any loss or damage, whether direct, indirect, incidental, special or consequential, arising out of the sale, use or misuse of 3M™ Thinsulate™ Insulation products or the user's inability to use such products. **THE REMEDIES SET FORTH HEREIN ARE EXCLUSIVE.**

3M's general terms and conditions also apply to the sale of this product.

3M may change the product, specifications and availability of the product as improvements are made: therefore, user should contact 3M for latest information before specifying the product.

All 3M™ Thinsulate™ Insulation rolls and 3M™ Thinsulate™ Featherless Insulation bags are produced within strict dimensional and weight tolerance specifications. However, changes in environment and other factors may cause the final dimensions and/or bag weights to shift, shrink, or otherwise change up to a maximum of ±4% during handling or shipment.

Please allow products to recover 24 hours after vacuum pack is removed.



Home Care Division

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