

Type XT-S

ODOR RESISTANT

Product Description

3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S) products include silver coated nylon fibers to inhibit the growth of odor-causing bacteria in the insulation. It is a soft, silky mid-loft product, with added protection against odors.

Intended Uses

Outerwear, sportswear, workwear, gloves and accessories. 3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S40) is NOT approved for use in gloves and other accessories (ref., Construction Guidelines).

Fiber Composition

U.S. Convention:

Insulation:

98% Polyester
2% X-STATIC® Silver Nylon

ISO Convention:

Insulation:

98% polyester
2% X-STATIC® silver nylon

Flammability

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

Restricted Substances

3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S) 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).



Available Widths

60" (1.52 m) roll width (nominal) with a 2" (5.1 cm) inside diameter core.

Properties

Product Designation	3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S)						
	Basis Weight		Thickness ASTM D 5736 @ 0.002 psi		Thermal Resistance (R _{cl}) ASTM F 1868		
	g/m ²	oz/yd ²	cm	inch	clo	R-value	m ² °K/W
XT-S40	40	1.2	0.6	0.2	1.0	0.9	0.16
XT-S60	60	1.8	0.8	0.3	1.4	1.3	0.22
XT-S80	80	2.4	1.0	0.4	1.8	1.6	0.28
XT-S100	100	2.9	1.2	0.47	2.1	1.8	0.32
XT-S150	150	4.4	1.5	0.59	2.7	2.3	0.41

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

$$\text{Clo (R}_{cl}) = \frac{(0.18 \text{ °C} \times \text{m}^2 \times \text{hr})}{\text{K cal}} \quad \text{R-value} = \frac{(\text{hr} \times \text{ft}^2 \times \text{°F})}{\text{BTU}}$$

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

The 3M™ Thinsulate™ Insulation family of products does not require downproof fabrics in most instances. However, when using 3M™ Thinsulate™ Insulation with fabrics that are not downproof, the potential for fiber migration should be determined.

- 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 3M sales representatives.

The use of fiberproof scrims to separate the insulation from textured shell or lining fabrics, coated, micro-coated, or waterproof breathable fabrics is required when needed to prevent fiber migration. This can be accomplished by adding scrim(s) during the garment construction process when necessary.

When using coated, micro-coated, or waterproof breathable fabrics, the durability of the insulation is decreased because of surface friction and because water cannot be flushed through the garment and an intervening layer of scrim should be used against such fabrics. Durability may also be enhanced by providing a means via openings or vents at the bottom of a garment through which water can be easily expelled to minimize stress on the insulation during agitation and water extraction.

CONSTRUCTION GUIDELINES FOR GARMENTS

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

3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S) is free hangable in edge stabilized constructions of up to 22" × 22" or channels of 4" to 7". The silver fiber side must not be laminated to lining fabrics, however, the non-silver fiber side may be laminated to lining fabrics.

IMPORTANT: The silver fiber side of 3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S) must be oriented toward the body when placed into products.

IMPORTANT: 3M™ Thinsulate™ Insulations are the only insulation products authorized to be used in tandem with 3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S) and still qualify for hang tags and woven labels. 3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S) may not be combined with any other type of non-woven insulations. When combining multiple layers of 3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S) and 3M™ Thinsulate™ Insulation products, the 3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S) layer must be situated closest to the body, with the silver side facing the lining fabric.

CONSTRUCTION GUIDELINES FOR GLOVES AND OTHER ACCESSORIES

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

- Quality lamination processes will result in loftier and warmer end products.
- A tricot or scrim must be used between the 3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S) and the outer shell of the glove or accessory.

IMPORTANT: The silver side of 3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S) needs to be facing the body, meaning that this will be the side attached to the lining fabric.

IMPORTANT: 3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S) may also be layered with other weights of 3M™ Thinsulate™ Water-Resistant Insulation (Type J) in order to achieve combined product weights heavier than existing 3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S) product offerings. In these instances, the silver side of the 3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S) is required to be the closest surface of insulation oriented toward the body.

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NB: 3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S40) is NOT approved for use in gloves and other accessories.

Waste Disposal Method: Reclaim if feasible. If product can't be reclaimed, dispose of waste product in a sanitary landfill.

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



CAUTION

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.

Care Instructions



Garments made with 3M™ Thinsulate™ Odor-Resistant Insulation (Type XT-S) 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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