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Wash or Dry-Clean
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Dry-Clean Only
Professionally dry-clean only. Tumble dry, low heat. Do not steam press, Steam only or use cool iron.

Important Notice to User:

WARRANTY: In the event any 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 OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY 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 Thinsulate insulation products or the user's inability to use such products. THE REMEDIES SET FORTH HEREIN ARE EXCLUSIVE.

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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 Thinsulate insulation rolls are made within strict dimensional tolerance specifications. However, it is possible to shift, shrink, or otherwise change length and/or width dimensions to a maximum of ±4% during handling or shipment.

Allow 24 hours for recovery after vacuum pack is removed.

3M
Occupational Health and Environmental Safety Division
3M Visibility and Insulation Solutions
3M Center, Building 2235-02-F-06
St. Paul, MN 55144-1000
800-328-7086
Thinsulate.com

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**Exceptional Warmth and Lightweight Comfort**

You can get exceptional, lightweight warmth in a high-loft insulation, Thinsulate® *Lite Loft* Insulation from 3M features a unique formulation that results in a soft hand and lofty appearance. Yet being lightweight makes it more comfortable for both apparel and accessories.

The thermally weight-efficient batting of Thinsulate® *Lite Loft* insulation is easy to unroll, cut and sew. It’s so versatile, in fact, that some styles can be quilted or laminated, depending on the application.

You get all of this under the Thinsulate® Insulation brand – which has high brand recognition in the consumer garment marketplace.

Thinsulate® *Lite Loft* Insulation —

• Thinsulate® *Lite Loft* insulation is lightweight, yet provides exceptional warmth and comfort.
• Available for quilted or laminated constructions.
• Down alternative
• Warm-water washable
• Hydrophobic fibers

Thinsulate® *Lite Loft* Insulation

Thinsulate® *Lite Loft* Insulation Type LL is a unique insulation that is lightweight and lofty. In fact, Thinsulate® *Lite Loft* insulation is our warmest product available for apparel and accessories. It's ideal for use in all types of outerwear and accessories. It is suitable for quilted and laminated constructions.

Thinsulate® *Lite Loft* Insulation Type LL

**Uses:** General Outerwear, Sportswear, Gloves, and Accessories

**Warmth While Damp:** Retains insulating ability in damp conditions

**Composition:** 100% Polyester

**Physical Properties**

<table>
<thead>
<tr>
<th>Type</th>
<th>Weight*</th>
<th>Thickness</th>
<th>Intrinsic Clo (Ic)</th>
<th>R-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LL250</td>
<td>250 g/m</td>
<td>7.4 cm</td>
<td>4.0 Clo</td>
<td>3.5 R-value</td>
</tr>
</tbody>
</table>

* ± 15%
** Represents the average of the population of lots at time of publication.
*** Warmth is for insulation alone. 1 Clo (Ic) = 0.18°C x m² x hr x °F K cal BTU

**Additional Features**

- **Available Width:** Thinsulate® *Lite Loft* insulation type LL is available in 60” roll width with 2” inside core diameter.

**Guidelines for Garment Construction**

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.

For quilts 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.

**Guidelines for Glove Construction**

- Quality lamination processes will result in loftier and warmer end products.
- A tricot or scrim must be used between the insulation and the outer shell of the glove.
- Consult the Product and Brand Usage Standards (PBUS) for additional usage information.

Allow 24 hours for recovery of Thinsulate® *Lite Loft* Insulation Type LL after removal from vacuum pack.

For questions, contact 3M Visibility and Insulation Solutions Technical Service at (651) 737-2753 or (651) 733-8697.
Thinsulate ™ Lite Loft ™ Insulation

Thinsulate ™ Lite Loft ™ insulation Type LL is a unique insulation that is lightweight and lofty. In fact, Thinsulate ™ Lite Loft ™ insulation is our warmest product available for apparel and accessories. It is ideal for use in all types of outerwear and accessories. It is suitable for quilted and laminated constructions.

**Thinsulate ™ Lite Loft ™ Insulation Type LL**

**Uses:** General Outerwear, Sportswear, Gloves, and Accessories

**Warth While Damp:** Retains insulating ability in damp conditions

**Composition:** 100% Polyester

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**Available Width:** Thinsulate ™ Lite Loft ™ insulation type LL is available in 60” roll width with 2” inside core diameter.

Thinsulate ™ Lite Loft ™ insulation can also be used as part of our unique Thinsulate™ Zone Insulation system that allows clothing designers and manufacturers to incorporate a variety of types and weights of Thinsulate™ Insulation into their outerwear. By factoring in the part of the body being insulated and the activity the garment is used for, designers can achieve custom-engineered, high-performance clothing that more closely fits the needs and activities of their customers.

When using coated, micro-coated, or waterproof breathable fabrics, the durability of insulations is decreased because of surface friction and because water cannot be flushed through the garment. Durability can be enhanced by providing openings or vents at the bottom of a garment through which water can be easily expelled; this minimizes stress on the insulation during agitation and water extraction. Durability can also be enhanced by using a scrim to support the insulation.

**Guidelines for Garment Construction**

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.

For scraps 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.

**Guidelines for Glove Construction**

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• Consult the Product and Brand Usage Standards (PBUS) for additional usage information.

Allow 24 hours for recovery of Thinsulate ™ Lite Loft ™ Insulation Type LL after removal from vacuum pack.

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