

## Purpose

To provide product specifications and guidelines to comforter/quilt manufacturers and consumers that will provide them with highest performance standards in warmth, comfort and durability.

### Requirements

Before any product can be certified and bear the name of Ingeo™, manufacturer must sign licensing agreements to meet manufacturing guidelines and product standards.

#### 1. fiber blends

The certified comforters must be filled with 100% PLA fibers specially designed for Ingeo.

#### 2. filling weight requirements

A minimum filling weight must be maintained to provide adequate warmth and uniformity throughout the comforter without cold spots. In addition, a sufficient number of fibers are required to prevent excessive fiber movement and resulting clumps in laundering. Minimum filling weights for comforters are shown in table 1.

#### 3. quilting pattern

The quilting pattern used shall not exceed an area that is adequate to control shifting and separation of the batting after performance testing (three agitator wash and tumble dry cycles).

Suggested patterns are:

- Box or diamond: 100 square (for example 10"x 10")
- Straight line rows: 8 inches

#### 4. shell fabrics

Shell fabrics can be made of spun or filament yarns and shall be of adequate construction, stability and porosity to control fiber percolation or leakage through shell fabric as produced and after a minimum of three wash (front loading washers) and tumble dry cycles. Suggested minimum fabric thread count is 210 (FxW), with low air permeability. Fabric weight should be at least 3.5 oz/yd<sup>2</sup>.

table 1

Suggested Comforter Filling Weights								
Description	United States				Europe			
	Weight Target	Weight Tolerance			Weight Target	Weight Tolerance		
		Ft <sup>2</sup>	Yd <sup>2</sup>	30 lin. Yds.		0.1 m <sup>2</sup>	M <sup>2</sup>	27 lin. m
Lightweight comforters/quilts	6 oz/yd <sup>2</sup>	±10%	±7.5%	±5%	180 g/m <sup>2</sup>	±10%	±7.5%	±5%
Standard weight comforters/quilts	9 oz/yd <sup>2</sup>				250 g/m <sup>2</sup>			
Continental weight comforters/quilts	12 oz/yd <sup>2</sup>				350 g/m <sup>2</sup>			

# comforter/duvet specifications



## 5. batting appearance

There should be no obvious defects in the batting such as holes, heavy cross-lapper marks and clumps of fibers. All fibers in the batting should be well opened without neps, rat tails or rolling rope. Batting should not be contaminated with foreign materials or other fibers that are not specified for Ingeo. No excessive compression on batting should be used to reduce the thickness, which will reduce the warmth value of the batting.

used in finishing steps have their own safe-use profile and must be investigated separately.

## 6. laundering instructions

Use a mild detergent (no bleach) and use moderate settings and cold or warm water (40° C). Large capacity front loading washers are recommended. Larger comforters should be laundered and dried in commercial size machine. Tumble dry at low temperature. Dry cleaning is also an acceptable laundering procedure. Any deviations from the above specifications are subject to written approval from NatureWorks LLC.

## Product Disclaimer

### safety and handling considerations

Material Safety Data (MSDS) sheets for Ingeo fibers are available from NatureWorks. MSDS sheets are provided to help customers satisfy their own handling, safety and disposal needs and those that may be required by locally applicable health and safety regulations, such as OSHA (U.S.A.), MAK (Germany) or WHMIS (Canada). MSDS sheets are updated regularly; therefore, please request and review the most current MSDS sheets before handling or using any product. The following comments apply only to Ingeo fibers; additives and processing aids used in fabrication and other materials

### Ingeo Worldwide Offices

Amsterdam, Hong Kong, London,  
Milan, Minneapolis, New York and Tokyo



[www.ingeofibers.com](http://www.ingeofibers.com)

### Contact

1 800 66 INGEO (USA only)  
+1 989 633 1746 (Worldwide)

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15305 Minnetonka Blvd., Minnetonka MN 55345  
GSFIB034090305V2

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