



## DOWNPROOF FABRICS Challenge for Bedding and Outerwear

Creative new fabrics are causing problems for bedding and outerwear manufacturers.

Designers are often excited to use the latest high-tech fabrics in down-filled products.

Often such fabrics are not downproof. Failure to test before production can mean 1000's of finished products cannot be sold or will cause consumer complaints.

IDFL has tested numerous bedding and outerwear products in recent years that fail the downproof test.

### Downproof Testing

Physical downproof tests try to mimic consumer use of products and predict if a fabric will be downproof. There are three tests for downproofness.

#### Rubbing Test

A small pillow (covered in plastic) is continually rubbed with a small textile rubbing machine. Leaking or protruding material is evaluated. (European EN 12132-1 method)

#### Punch Test

A small pillow is "punched" with finger-like probes. Protruding, feathers and down are counted. (European EN 12132-2 method)

#### Tumbler Downproof Test

A small pillow or an entire vest or small jacket is placed in a plastic box with hard rubber stoppers.

The pillow or finished product is pounded with the rubber pieces for 30 minutes and the leakage is evaluated. This is the standard in North America and Asia.

#### Advantages of the Tumbler Method

Because part or all of a finished product can be tested, this method can be used to test both the fabric itself as well as finished product construction.

### FILL-PROOF TEST for SYNTHETICS

- The tumbler method can be used for testing fiber leakage in synthetic products.
- IDFL has tested hundreds of synthetic-filled products for leakage and fiber migration.

### What is Air Permeability?

The Air Permeability test is also used to help predict downproofness. This test measures the amount of air that passes through fabric in a given time period.

English System: Cubic feet of air passing through a square foot of fabric per minute (expressed as: ft<sup>3</sup>/ft<sup>2</sup>/min).  
Metric: l/m<sup>2</sup>/sec (or) cm<sup>3</sup>/cm<sup>2</sup>/sec

### How does Air Permeability Relate to Downproofness?

Each test measures a different physical aspect of the fabric. Therefore the numbers are sometimes unrelated. Air Permeability measures the passing of air through a fabric, while the Downproof test measures the physical penetration of down/feather material through fabric.

IDFL recommends both tests be performed on a fabric sample. Each test has separate benefits. Good air permeability will not always mean good downproofness.

## Threadcount: Labeling Errors

High threadcount claims are often made for bedding products. Some of these claims are deceptive.

The FTC, ASTM, IABFLO and other organizations around the world have determined that twisted multiple-ply yarns should be counted as a single unit for determining threadcount.

The FTC has issued official letters and statements about label errors.

Packaging or labeling which counts these twisted plies separately is deceptive and not allowed. The ASTM definition is as follows:

**"Threadcount, n - in woven textiles, the number of warp yarns (ends) and filling yarns (picks) per unit distance as counted while the fabric is held under zero tension, and is free of folds and wrinkles. Multiple ply yarns are counted as a single unit."**

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