



BRIEF EXPLANATION OF DOWN & FEATHER TESTS

Content Analysis (Composition)

Down and feather filling material is separated by hand in a special sorting cabinet into the following components:	
Down (including plumules)	Feathers (waterfowl)
Down Fiber	Chopped & Damaged Feathers
Feather Fiber	Quill Feathers (quill longer than 12cm)
Residue (dirt, organic, etc.)	Landfowl Feathers (chicken, etc.)

IDFB International Method:	Double test of 2g down or 3g feathers
Japanese Method (JIS)	Double test of 3g down or feathers
European Method (EN)	Double test of 4g down or 6g feathers

Species Identification

New Official IDFB Method for determining goose or duck specie:
1g of feathers or 0.1g of down is tested using microscope or microfiche.

Color Separation

4 grams of down (6 grams of feathers) are separated into white and non-white (grey, brown) categories. Material labeled "WHITE" requires at least 95-99% white, depending on country and company specifications.

Pre-Sort

Samples with long feathers are pre-sorted before doing the standard content analysis. This is a new IDFB test method.

Average Down Size

0.2 g of down clusters are counted and weighed, giving an average weight.

Average Feather Length

2.0 g of feathers are separated into 15 categories of 1,2,3... 15 cm.
The % of feathers in each category and average feather length are reported.

Fill Power

The fill power measures the loft or insulation ability of down products. Extremely high quality down material can reach a Fill Power of 700+.

BOX CONDITIONING - Only use for down and feathers directly after washing and sorting.

TUMBLE DRY CONDITIONING - European method.

WATER RINSE CONDITIONING - Can be used for jackets, sleeping bags.

STEAM CONDITIONING - Use for finished products and bulk down.

Note: Steam Conditioning is the official international IDFB standard.

Net Fill Weight

The net filling weight of the down and feathers is determined.

Oxygen Number

The oxygen number indicates product cleanliness. It measures organic material after soaking and agitating the down and feathers in a solution of pure water. The USA and EN standards require an oxygen number of less than 20. A clean sample is usually under 10. The cleanest samples are 1.6 - 3.2.

Turbidity

Turbidity helps determine if dirt or dust (either organic or non-organic) is significant in the down and feathers. The sample is soaked and agitated in pure water. The water is then measured for clarity. Very clean samples register a value of 550+ mm. Europe and USA require at least 300 mm.

The LaMotte 2020 NTU Automated Turbidity Meter has replaced the mm system.

IDFL LABORATORY AND INSTITUTE

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Odor	The odor test indicates potential odor problems in a filling material. Material is soaked in water and warmed for several hours. A minimum of 5 people then smell the sample to determine if a "putrid" odor exists.
Fat & Oil	Fat & Oil is extracted from a down and feather sample. This is an indication of cleanliness and potential odor problems. Oil & Fat should be 0.7% - 2% (Down and feathers require some oil to function well.)
pH	This test measures the pH factor of down and feathers.
Moisture Content	Down & feather material is dried to 0% humidity. The dry and original weight are compared, giving the moisture content of the material.
Dust Evaluation	A qualitative analysis of dust in down and feathers is performed.
Couché	Sample is evaluated for the presence of used or secondhand material.
Thread Count	Threads per square inch of fabric are measured at least 5 times and averaged. Twisted-ply yarns count as a SINGLE unit.
Downproofness	Fabric fill with down and feathers is agitated in a tumbler for 45 minutes to simulate long-term customer usage. Downproofness is then rated.
Air Permeability	Air permeability of fabric is another indication of downproofness.
Size Check	A physical measurement of a finished product is made. The distribution of down in the comforter is also evaluated.
Check Stitching	Fabric flaws and stitching quality are evaluated in finished products.
Wash Loss	A controlled test of raw down/feathers is washed in feather detergent and the loss is measured.
Element Test	The dirt and dust in raw material is tested for presence of additives/fillers, various metals, and elements.
Fiber Identification	Fabric fibers are identified and % in blends can be verified.
Chrome content	The test indicates whether a Tan-O-Quill process was used. This is an additive used often in military orders for improved water resistance.
Bacteria Package	The down & feather materials are tested for the presence of several bacteria and choliforms. (This is required by some companies and countries.)
Pesticide Pkg	Material is tested for residual pesticides and herbicides.

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