

# Australian Standard®

AS 4823.3—2006

## Feather and down—Methods of test

### Method 3: Determination for the quantitative composition of feather and down (manual method)

#### PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee, CS-035, Continental Quilts to supersede part of AS 2479—1987, *Down and/or feather filling materials and filled products*. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The committee referred to EN 12131:1998, *Feather and down—Test methods—Determination of the quantitative composition of feather and down (manual method)* when developing this Standard.

#### METHOD

##### 1 SCOPE

This Standard specifies a method for determining the composition of feather and/or down fit for or constituting filled manufactured articles in order to label it or to verify the denominations reported on the label.

##### 2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard.

###### AS

- |        |                                     |
|--------|-------------------------------------|
| 2001   | Methods of test for textiles        |
| 2001.1 | Part 1: Conditioning procedures     |
| 4823   | Feather and down—Method of test     |
| 4823.4 | Method 4: Sampling in view of tests |

###### AS/NZS

- |          |                                                                                                          |
|----------|----------------------------------------------------------------------------------------------------------|
| 1301     | Methods of test for pulp and paper                                                                       |
| 1301.414 | Method 414: Conditioning of paper for testing                                                            |
| 1301.415 | Method 415: Standard atmosphere for testing paper and board, and procedure for monitoring the atmosphere |

###### EN

- |      |                                        |
|------|----------------------------------------|
| 1885 | Feather and down—Terms and definitions |
|------|----------------------------------------|

### 3 DEFINITIONS

For the purposes of this Standard the definitions in EN 1885 apply.

### 4 PRINCIPLE

A known quantity of the filling material, sampled according to AS 4823.4, is separated by hand into its elements: the elements are collected into separate containers which are suitably marked.

The content of each container is weighed in order to determine the mass of the element concerned and therefore to calculate the relative percentages.

### 5 APPARATUS

#### 5.1 Box

For the manual separation, constituted normally as follows:

- (a) Black and smooth base, about 450 mm in length and about 300 mm in width, having a perforated frame to suitably insert the containers.
- (b) Front part, about 150 mm high open or provided with two openings, wide enough to permit the operator's hands to enter the box.
- (c) Back part, about 300 mm high.
- (d) Two side parts, fit for front and back parts.
- (e) Cover, to avoid air draughts during the execution of test, made of glass or other transparent material to permit the separation of the element.
- (f) Lamp, allowing to illuminate the box.

#### 5.2 Weighing containers with cover

Made of aluminium or other light antistatic material fit to contain and weigh the different elements of the filling capacity up to 300 mL.

#### 5.3 Tweezers

Fit to pick the single elements.

#### 5.4 Analytical balance

With an accuracy of 0.1 mg.

#### 5.5 Mixing container

Whose base dimensions are 300 mm × 300 mm and 150 mm high.

### 6 SAMPLING, CONDITIONING AND PREPARATION OF THE TEST SPECIMENS

Sampling procedures shall be carried out according to AS 4823.4.

Conditioning shall be carried out according to AS 2001.1 and the temperature and relative humidity shall be measured according to AS/NZS 1301.414 and AS/NZS 1301.415.

From different places of this sample, three specimens shall be drawn. Where down content is less than or equal to 30%, each sample should have a mass of about 6 grams. Where down content is greater than 30% each sample should have a mass of about 4 grams. Weigh each sample to an accuracy of 1 mg.

Specimen shall be placed in a separate container.

It is necessary to analyse at least two test specimens. If the means of the analysis of the components differ by more than 10% relative, a third sample shall be analysed. The determinations shall be carried out by skilled operators.

## 7 PROCEDURE

### 7.1 Test conditions

The separation procedure shall be carried out in a conditioned room in accordance with AS 2001.1 and the temperature and relative humidity shall be measured according to AS/NZS 1301.414.

### 7.2 First separation

The procedure shall be as follows:

- Mark the weight containers (5.2) with the indication A, B, C, D, E and Q, weigh each cover, with accuracy to 1 mg.
- Put one of the weighed test specimens (6.3) into the separation box (5.1).
- With tweezers, remove initially all feathers from the plumage; brush the feathers between thumb and index finger of one hand to remove any down fibre or residual matter caught therein.
- Identify the single elements which are extracted from the test specimens and put them in the suitable weighing containers, as indicated in Table 1.

**TABLE 1**  
**FIRST SEPARATION OF ELEMENTS AND DENOMINATION**  
**OF THE CORRESPONDING CONTAINERS**

| Denomination of containers | Elements                                    |
|----------------------------|---------------------------------------------|
| <i>A</i>                   | Whole waterfowl feather                     |
| <i>B</i>                   | Whole landfowl feather                      |
| <i>C</i> <sub>1</sub>      | Broken and damaged waterfowl feather        |
| <i>C</i> <sub>2</sub>      | Broken and damaged landfowl feather         |
| <i>D</i>                   | Down, plumules, down fibres, feather fibres |
| <i>E</i>                   | Quill feather                               |
| <i>Q</i>                   | Residual matter                             |

- Weight the contents of the weighing containers, indicating the mass in grams with an accuracy of 0.1 mg.
- Calculate the percentage of mass lost during the first separation by the following formula:

$$100 \frac{M_1 - (A + B + C_1 + C_2 + D + E + Q)}{M_1} \dots (1)$$

where

$M_1$  = mass of the test specimen analysed in the first separation

$A, B, C_1, C_2, D, E, Q$  represents the mass of the contents of the containers

Another test specimen shall be analysed if the calculation gives a loss of more than 2%  $M_1$ .