

Australian Standard®

AS 4823.7—2006

Feather and down—Methods of test

Method 7: Determination of the turbidity of an aqueous extract

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 1164:1998 *Feather and down—Test methods—Determination of the turbidity of an aqueous extract* when developing this Standard.

METHOD

1 SCOPE

This Standard specifies a method to check one of the cleanliness aspects of feather and down ready to be used, through the determination of the amount of undissolved and dissolved matter present in the aqueous extract.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard.

AS

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

AS/NZS

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

ISO

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| 3696 | Water for analytical laboratory use—Specification and test methods |
| 4793 | Laboratory sintered (fritted filters)—Porosity grading, classification and designation |

3 DEFINITION

For the purpose of this Standard, the following definition applies.

3.1 Turbidity

Reduction of transparency of the filtrate suspension caused by the presence of undissolved and undissolved mater.

4 PRINCIPLE

A mass of feather and down is mixed with water. After the mixture is correctly shaken, the filtrate is measured.

5 REAGENTS

5.1 Water

Grade 3 in accordance with ISO 3696.

6 CONDITIONING AND TESTING

Conditioning and testing shall be carried out in accordance with AS 2001.1 and the temperature and relative humidity shall be measured in accordance with AS/NZS 1301.414.

7 APPARATUS

7.1 Turbidity meter

The turbidity meter (see Figure 1) consists of two parts:

(a) A graduated transparent cylinder

Taller than 300 mm and from 30 to 35 mm in diameter, graduated in 1 mm divisions. The cylinder is equipped with a pipe allowing the liquid to go in and out of the measuring device.

On the flat bottom of the cylinder is fixed a disc of plastic material on which are two double black lines (1 ± 0.02) mm apart, as long as the cylinder diameter, fast to light and resistant to water, and of width (0.5 ± 0.02) mm and another two double black lines, with the same dimensions, perpendicular to the first ones.

The cylinder is placed on top of a white surface.

(b) A container

Capacity 1000 mL mounted on a lifter acting in a communicative vessel system, connected to the turbidity meter by a flexible tube connected to the pipe (see Item (a)).

NOTE: The contrast of the two double black lines and the white material should be assessed for clarity.

7.2 Analytical balance

Accurate to at least 10 mg.

7.3 Tumble jar

Capacity 2000 mL.

7.4 Beaker

Capacity 2000 mL.

7.5 Shaking machine

Shaking machine with 150 shakes per minute and with shaking swing of 40 mm or tumbling machine with 150 shakes per minute.

7.6 Sintered (fritted) filter

Pore size index P 160 10 cm diameter (see ISO 4793).

7.7 Light source

Indirect day light or an equivalent source of illumination of at least 600 lx.

7.8 Lux meter

Giving an indication of the room light.

8 PROCEDURE

The procedure shall be as follows:

- (a) Extract and condition a laboratory bulk sample in accordance with AS 4823.4.
- (b) Take a sample of mass (10 ± 0.1) g from the laboratory bulk sample and place in the tumble jar containing 1000 mL of water. See Clause 5.
- (c) Tumble the jar at room temperature for (20 ± 5) minutes at a speed of (60 ± 1) r/min.
- (d) Without wringing the excess water from the test specimen, filter the suspension through the sintered filter (7.6) and put the filtrate into the beaker (7.4).
- (e) Before starting the test check that the container is in the low position.
- (f) Pour the liquid into the container.
- (g) Gradually lift up the container so that the liquid flows into the graduated cylinder.
- (h) Observe from the top through the liquid, by normal vision or vision corrected to normal, the height of the filtrate as soon as the cross is no longer visible by the operator and record the height of the graduated cylinder in millimetres as H_1 .
- (i) Raise the container at least another 20 mm.
- (j) Gradually lower the container in such a way that the liquid flows out of the graduated cylinder.
- (k) Observe the height of the filtrate as soon as the cross is visible again by the operator and record the height on the graduated cylinder in millimetres as H_2 .
- (l) Compare H_1 and H_2 . If H_1 and H_2 differ by more than 10 mm repeat the procedure from 8.4. If the difference persists, change the operator. If it cannot be cured, note the individual values in the test report.
- (m) Register the mean of H_1 and H_2 .
- (n) Repeat the test on at least one other test specimen. The procedure described from Step (b) and Step (l) shall be repeated by another operator.

9 EXPRESSION OF RESULTS

The following values shall be determined:

- (a) The mean values of H_1 in millimetres, to the nearest millimetre.
- (b) The mean values of H_2 in millimetres, to the nearest millimetre.
- (c) The general mean of H_1 and H_2 , in millimetres rounded to the nearest multiple of five.