

Australian/New Zealand Standard™

Methods of test for pulp and paper

Method 204rp: Estimation of dirt and shives in pulp



AS/NZS 1301.204rp:2006

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee PK-019, Methods of Test for Pulp and Paper. It was approved on behalf of the Council of Standards Australia on 26 June 2006 and on behalf of the Council of Standards New Zealand on 7 July 2006.

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The following are represented on Committee PK-019:

Australian Plantation Products and Paper Industry Council (A3P)

Appita

CSIRO Forestry and Forest Products

Ensis Papro, SCION

National Association of Forest Industries

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RECONFIRMATION

OF

AS/NZS 1301.204rp:2006

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Technical Committee PK-019 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

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Scion

NOTES

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Foreword

This standard was prepared by Joint Technical Committee PK-019, Methods of Test for Pulp and Paper, as part of AS/NZS 1301, *Methods of test for pulp and paper*.

This edition cancels and replaces AS/NZS 1301.204rp:1993.

This Standard does not conform to ISO 5350-1 or ISO 5350-2 because it prescribes the TAPPI dirt chart.

Introduction

The original Appita method for estimation of dirt and shives in pulp, published in 1956, was an endorsement of a TAPPI Standard which determined equivalent black area. An Appita study around 1970 revealed a high level of disagreement between observers in their assessment of equivalent black area when examining the same sheets. The 1956 Standard was therefore withdrawn. This Standard, a revision of AS/NZS 1301.204rp:1993, does not use the equivalent black area concept.

Methods are included to cover the use of reflected and transmitted light. Generally, transmitted light is used for bleached pulps although reflected light may be used. However, mechanical and unbleached pulps require reflected light. Transmitted light is generally not applicable to sheets of grammage exceeding 1400 g/m².

Several methods of reporting are included in the Standard. Estimations using reflected light are reported as number of impurities per m² of area—whilst those using transmitted light are reported as number per kg of pulp. However, in both cases the results can be expressed as total area of dirt and shives per square metre, or per kg as appropriate.

Results obtained from transmitted light are not strictly comparable to those obtained from reflected light for the same pulp and similarly results from pulp sheets of different grammage are not closely comparable. These possible differences must be appreciated if results are being compared.

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Estimation of dirt and shives in pulp

1 Scope

This standard provides for the estimation of visible dirt and shives in both fully bleached and unbleached pulps including pulp from waste paper, in sheet form. It is also suitable for mechanical pulp.

2 Normative references

The following documents are referred to in this Standard.

AS/NZS

1301.203s Forming handsheets for physical testing of pulp

ISO

5350 Pulp—Estimation of dirt and shives

5350-1 Part 1: Inspection of laboratory sheets

3 Definitions

For the purpose of this Standard the following definitions apply.

3.1 Shive

Sliver of wood, or fibre bundle which appears to be almost opaque, or which is of markedly darker colour than the rest of the sheet.

3.2 Dirt

Any other material including bark which is embedded in the sheet and which has a markedly contrasting opacity or darker colour with respect to the rest of the sheet.

4 Principle

The test pieces to be investigated are inspected in either reflected or transmitted light and specks (dirt and shives) larger than 0.04 mm^2 are counted and classified according to area. The number of specks in each group is expressed as number per square metre of sample or number per kilogram of pulp, depending on which lighting conditions are used. However, the specks may also be expressed as total area of dirt and shives per square metre of pulp.

5 Apparatus and auxiliary materials

5.1 For reflected light

An illumination device, with suitable arrangement for examination of the test piece on a white background in reflected light. A ruled or squared grid may be placed on the sheet, to facilitate scanning. Any appropriate illumination that is sufficient to detect a 0.04 mm^2 speck is satisfactory.

5.2 For transmitted light

A viewing table for inspecting the test piece in transmitted artificial light, e.g. as provided by several daylight fluorescent tubes, each about 20 W, under an opalescent acrylic plate. The test piece must completely cover the illuminated area. The light should be even and the intensity should be 2000 to 3000 cd/m^2 as measured on the upper surface of the viewing table.