

AUSTRALIAN STANDARD
Prepared by the Appita Testing Committee. Endorsed as part of AS 1301 by the Standards Association of Australia—February 1980. Endorsed as suitable for use in New Zealand by the Standards Council of New Zealand.

Appita P203s—80

**Tentative Standard—November 1957,
Standard—November 1959,
Revised—August 1962
Revised—May 1975
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FORMING HANDSHEETS FOR PHYSICAL TESTING OF PULP

1. APPARATUS

A set of sheetmaking equipment comprising:

1.1 British disintegrator (Reference 5.1)—fitted with a lid.

1.2 British sheet machine and accessories (Reference 5.1).

1.3 Hydraulic or pneumatic press and press template (Reference 5.1).

1.4 Supply of standard blotters made of fully bleached chemical pulp, neutral, free from sizing agents, chemical additives, visible contraries and fluorescent materials. For couching handsheets of highly beaten pulps the wet strength of such blotters may be insufficient and blotters containing wet strength agents may be used, provided that the wet strength agent does not migrate to the handsheet. The blotters shall be 200 to 205 mm

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square with a grammage of 250 ± 25 g/m², a Klemm absorbency of 70 ± 20 mm (Appendix B1), a water uptake of 450 ± 5 g/m² (Appendix B2), and the dimensional changes caused by soaking must not exceed 3 per cent in any direction (Appendix B3).

1.5 Set of mirror-polished stainless steel plates (Reference 5.1).

1.6 Set of drying rings (Reference 5.1).

1.7 Mechanical stock divider (References 5.2) or a manual stock divider consisting of a tall cylinder of approximately 18 litres capacity, with an adjustable hook gauge and an efficient stirrer.

1.8 Monel metal or stainless steel measuring pots (Reference 5.2) of 1 litre capacity.

2. PREPARATION OF SAMPLE

Take a representative sample of the pulp. If the pulp is not processed immediately, store the sample in a cool dark place. Protect dry pulp samples from dust by wrapping or by the use of dustproof

containers. Store slush pulp and moist pulp samples in airtight containers, after first covering moist pulp with water.

3. PROCEDURE

Use distilled water for all operations up to and including dilution in the stock divider (References 5.3, 5.4 and 5.5). Deionized water may be used as an alternative (Reference 5.6). The water used in the sheet machine need not be distilled water, but it must be colourless and free from suspended matter and entrained air (Reference 5.1).

3.1 Preparation of test specimen. Thoroughly mix moist crumbled pulp to equalize the moisture distribution. Tear moist lap pulp into small pieces and mix thoroughly. Do not cut the pulp and avoid the inclusion of cut edges in the sample.

Determine the moisture content of the pulp by a suitable method (Note 4.1) and weigh out a quantity of pulp equivalent to 24 ± 0.5 g of oven-dry fibre. If the pulp specimen has been beaten in accordance with either of the Appita Standards P202 or P209, take the whole pulp charge.

Dry pulp needs to be thoroughly wetted before disintegration. Do this by soaking the weighed charge of pulp in distilled water (Reference 5.5) at room temperature for sufficient time to ensure that no lumps of pulp remain after disintegration. The soaking time must not be less than 4 h nor greater than 24 h. The initial wetting of the pulp may be

accelerated by placing the pulp and water in a pressure flask and applying and releasing vacuum three or four times. Tear lap pulp into smaller pieces after soaking.

3.2 Disintegration. Set the propeller of the disintegrator in its operating position. Transfer the prepared pulp to the disintegrator and add distilled water to make a total volume of 2 litres. Place the lid in position, and disintegrate pulp which has not been beaten just prior to this step for a total of 75 000 revolutions of the propeller (Note 4.2). Disintegrate pulp which has been beaten recently for 7500 revolutions.

Check the stock for completeness of disintegration. If any lumps of pulp are present in the stock or lodged in the disintegrator the stock must be discarded and the disintegration repeated with another specimen of pulp. When disintegrating pulp which is likely to behave in this way, it is desirable to stop the disintegrator after 12 500 propeller revolutions, remove the stock to break up lumps which may lodge under the propeller or behind the baffles, return the stock to the disintegrator and continue the disintegration. The removal to break up lumps is not necessary with freshly beaten stock.

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