SCAN-P 40:80
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SCANDINAVIAN PULP, PAPER AND BOARD
TESTING COMMITTEE

Fillers and pigments

Ignition residue

1 Scope

This SCAN-test Method specifies a procedure for determining the ignition residue of fillers and pigments used in the production of paper and board.

The Method is applicable to all kinds of inorganic fillers and pigments.

The sampling procedure is not covered by this Method.

2 Definition

For the purpose of this Method, the following definition applies:

2.1 *Ignition residue* (of fillers and pigments) – The ratio of the mass of the residue obtained after ignition at 925 °C to the dry mass before ignition.

Note – The ignition residue is normally expressed as a percentage.

3 Principle

The dry sample is ignited in an oven at 925 °C for 2 h.

4 Reference

SCAN-P 39 Fillers and pigments – Dry matter content

5 Apparatus

5.1 *Crucibles* of platinum, porcelain or silica.

Warning – Do not use porcelain or silica crucibles for testing pigments containing calcium carbonate.

5.2 *Oven*, e.g. a muffle furnace, adjusted to maintain a temperature of (925 ± 25) °C.

5.3 *Analytical balance*, accurate to 0,1 mg.

6 Preparation of sample

Immediately after sampling, transfer the sample to a water-vapour-tight vessel, such as a glass or plastic jar with a tightly fitting lid.

Keep slurry samples in a cool place until required. The period between sampling and analysis should be kept to a minimum.

Before taking portions for analysis, make sure that the sample is thoroughly mixed. Prepare at least two portions from each sample to be tested.

At the same time, take a separate portion for determination of dry matter content in accordance with SCAN-P 39, or use an oven-dry sample.

7 Procedure

Ignite a crucible (5.1) for 15 min in the oven (5.2) at (925 ± 25) ºC. Allow the crucible to cool in a desiccator, which takes approximately 45 min when porcelain or silica ware is used and approximately 15 min for platinum crucibles. Using the balance (5.3), weigh to the nearest 1 mg and note the weight as *c* grams.

> *Note* – The weight of a new crucible may not be constant after a single ignition in the oven. New crucibles should therefore be subjected to repeated ignition cycles until constant weight is reached.

Transfer approximately 1 gram of the material to be tested to the crucible and weigh it again immediately. Note the weight, *a* grams.

If the sample is a slurry, place the crucible in a drying oven at 105 °C until the slurry is dry.

Place the crucible in the oven and ignite it for 2 h at (925 ± 25) °C. Allow the crucible to cool in the same way as described for the empty crucible and weight it again. Note the weight, *b* grams.

8 Calculation

Calculate the ignition residue from the expression:

$$X = \frac{b-c}{d(a-c)} \cdot 10\,000 \qquad [1]$$

where

X = the ignition residue, as a per cent;
a = the weight of the crucible and sample before ignition, in grams;
b = the weight of crucible and ignition residue, in grams;
c = the weight of the empty crucible, in grams;
d = the dry matter content of the sample, as a per cent (SCAN-P 39).

Report the ignition residue to the nearest 0,1 per cent. Report each result separately.

9 Report

The test report should include a reference to this SCAN-test Method and the following particulars:

(a) date and place of testing;
(b) identification of the material tested;
(c) the results;
(d) any departure from the procedure described in this Method or any other circumstances that may have affected the results.

SCAN-test Methods are issued and recommended by KCL, PFI and STFI-Packforsk for the pulp, paper and board industries in Finland, Norway and Sweden.
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