



Fillers and pigments

Dry matter content

1 Scope

This SCAN-test Method specifies a method for determining the dry matter content of fillers and pigments, including slurries, used in the production of paper. The standard is applicable to all kinds of fillers and pigments that are chemically stable at the drying temperature used in the test, 105 °C.

The sampling procedure is not covered by this Method.

2 Definition

2.1 Dry matter content (of fillers and pigments) – The ratio of the mass of a sample of the material after drying to its mass at the time of sampling.

Note – The dry matter content is normally expressed as a percentage.

3 Principle

The sample is dried in an open dish at 105 °C until its mass is constant.

4 Apparatus

4.1 *Weighing dishes*, at least 50 mm bottom diameter, of glass, aluminum or other metal foil. The dishes may not change their mass by more than 1 mg when heated at 105 °C for 1 h.

4.2 *Drying oven*, controlled at a temperature of (105 ± 3) °C.

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

5 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.

6 Procedure

Weigh a weighing dish (4.1) to the nearest 1 mg. Note the mass as c grams. With a spoon, take a sample of between 5 g and 10 g and place it in the dish. Weigh it again to the nearest 1 mg without delay. Note the mass as a grams. Place the dish in the drying oven (4.2) and dry it at (105 ± 3) °C for not less than 2 h for an air-dry sample or 4 h for a slurry sample.

Place the dish in a desiccator and allow it to cool to room temperature. Weigh the dish and its contents to the nearest 1 mg and note the mass as b grams.

Check the result by drying the sample in the oven for a further 1 h. Weigh again. The two results should not differ by more than 5 mg.

7 Calculation

Calculate the dry matter content from the expression

$$X = \frac{100(b-c)}{(a-c)} \quad [1]$$

where

X = dry matter content, in per cent;

a = mass of dish and sample before drying, in grams;

b = mass of dish and sample after drying, in grams;

c = mass of the empty dish, in grams.

Report the dry matter content to the nearest 0,1 %.

Report each result separately.

8 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.