



Transport
Roads & Maritime
Services

Test method T733

Bulk density of scrap paper

NOVEMBER 2012



Revision Summary

Ed/Rev Number	Clause Number	Description of Revision	Authorisation	Date
		Reformatted and Revision Summary Added	D.Dash	Jan 2000
Ed 2/ Rev 0	All	Reformatted RMS template	J. Friedrich	November 2012

Note that Roads and Maritime Services is hereafter referred to as 'RMS'.

The most recent revision to Test method T733 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

Test method T733

Bulk density of scrap paper

1. Scope

This method sets out the procedure for determining the bulk density of scrap rubber. If the sample has as little as 10% particles in the size range 300 - 600 μ m this fraction is used in the test, however, if this fraction constitutes less than 10% of the sample, the size range 600 μ m - 1.18 mm is tested. The method is based on the ARRB method AIR 286-3 and is applicable to rubber particles produced by comminuting vehicle tyres.

2. Apparatus

- (a) Balance - accurate and readable to 0.1 g.
- (b) Measuring cylinder - of 100 mL capacity with 1 mL graduations.
- (c) Beaker - of 250 mL capacity, marked with graduations no greater than 50 mL apart.
- (d) Stirring rods - two glass rods of lengths suitable for use in the beaker and measuring cylinder.
- (e) Wash bottle - to provide a jet of washing water.
- (f) Hotplate - fitted with controller and capable of gently boiling a beaker of water.

3. Material

Anionic wetting agent solution, prepared by diluting a “detergent concentrate” e.g. “Teepol” or “Decon”, by adding 9 parts by volume of water to 1 part of detergent.

4. Preparation of Sample

This is set out in method T730. A sieved fraction between 6 and 8.5 g is obtained; this should be the entire sample passing the sieves or the entire contents of some combination or riffle box collectors.

5. Procedure

- (a) Note the mass of the sieved sub-sample in the 250 mL beaker to 0.1 g (M).
- (b) Add 70 mL of water and boil for 30 minutes stirring occasionally and washing down the sides of the beaker occasionally keeping the volume between 60 and 70 mL.
- (c) Allow to cool to the touch then pour contents into graduated cylinder followed by 10 mL of dilute detergent first in the beaker, finally washing all the rubber particles into the cylinder and bringing the volume to 100 mL.
- (d) Stir with a glass rod then reverse stir for half a turn to stop rotation then allow to remain undisturbed for fifteen minutes.
- (e) Measure the settled volume of the rubber particles to the nearest 0.5 mL, neglecting any still floating (V).

6. Calculations

Calculate the bulk density of the test portion by the following formula:

$$\text{Bulk density} = \frac{M}{V} \times 1000 \text{ kg m}^{-3}$$

Where

- M = The mass of the portion (grams.)
V = the volume of the rubber particles (millilitres).

7. Reporting

Report the test results as the mean of two determinations, made on separate sub-samples, to the nearest whole number.