



Test method T856

Determination of the pigment to binder ratio of thermoplastic road marking material

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Revision Summary

Ed/Rev Number	Clause Number	Description of Revision	Authorisation	Date
		Reformatted and Revision Summary Added	D.Dash	June 2001
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 T856 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

Test method T856

Determination of the pigment to binder ratio of thermoplastic road marking material

1. Scope

This test method sets out the procedure for determining the pigment to binder ratio of thermoplastic road marking material where the word pigment is used loosely to include pigment, extender, aggregate and glass beads. This method is derived from B.S.3262.

2. Apparatus

- (a) Extraction apparatus consisting of a 500 mL Erlenmeyer
- (b) flask, metal coil condenser and wire support basket as illustrated and described in 1P 53 (Sediment in Crude and Fuel Oils by Extraction).
- (c) A wire support cage large enough to hold the extraction thimble so that it does not come into contact with the condenser but otherwise as small as possible.
- (d) Cellulose E extraction thimble with a diameter of 25 mm and a length of 80 mm.
- (e) Filter papers, Whatman No.42.
- (f) Hot plate.
- (g) A desiccator.
- (h) Laboratory glassware.
- (i) Retort stand plus two clamps and bossheads.
- (j) A balance, of not less than 200 g capacity, accurate and readable to 0.01 g.
- (k) An oven capable of maintaining a temperature of $105 \pm 3^\circ\text{C}$

3. Reagents

1:1:1 Trichloroethane Laboratory grade.

4. Procedure

- (a) Weigh quickly the extraction thimble and 3 filter papers (previously dried at 105°C for one hour and cooled in a desiccator) and a 250 mL beaker.
- (b) Weigh approximately 20g of the sample taking large, representative pieces of the sample but such as will still fit into the thimble.
- (c) Wrap the weighed sample into one of the filter papers and place into the extraction thimble.
- (d) Place thimble in wire support cage and pour 200 mL of 1:1:1 Trichloroethane into the flask. Hang the basket on the hooks in the metal cap condenser and place the cap over the neck of the flask.
- (e) Clamp apparatus into place over the hot plate and reflux for 6 hours.
- (f) Allow to cool. Place extraction thimble and contents into the beaker. Filter the mixture remaining in the flask through each of the other two filter papers. Place these papers also into the beaker.
- (g) Place beaker and contents into the oven at 105°C for 2 hours. Allow to cool in a desiccator and weigh.
- (h) Retain the beaker and its contents for determination of gradation of the pigment in accordance with the procedure described in Test Method T855, if required.
- (i) Retain the filtrate for an Infra Red Spectrum of the binder portion, if required.

5. Reporting

Calculate and report each of the following:

(a) Percentage of binder (by mass) = $\frac{Y - (Z - X)}{Y} \times 100$

(b) Percentage of pigment (by mass) = 100 - Percentage of binder.

Where

X = mass (g) of thimble + 3 papers + beaker.

Y = mass (g) of sample.

Z = mass (g) of thimble + 3 papers + beaker + residue
after extraction of binder.