
British Standard Methods of testing

Plastics

Part 7. Rheological properties

Method 720B. Cup flow of phenolic and alkyd moulding materials

Méthodes d'essai des matières plastiques

Partie 7. Propriétés rhéologiques

Méthode 720B. Ecoulement de matériaux de moulage phénolique et alkyds (méthode de la coupelle)

Prüfverfahren für Kunststoffe

Teil 7. Rheologische Eigenschaften

Verfahren 720B. Becherschließzeit von phenolischen und Alkyd-Formmassen

IMPORTANT NOTE. Before reading this method it is essential to read the foreword, general introduction and instructions to BS 2782, issued separately.

0. Introduction

This method which has been prepared under the direction of the Plastics Standards Committee is similar in technical content to method 105B of BS 2782 : 1970, which is being withdrawn.

The method is for assessing the flow properties of phenolic and alkyd moulding materials. It is not suitable for fast-curing moulding materials.

Warning note. This method does not necessarily detail all the precautions necessary to meet the requirements of the Health and Safety of Work etc Act 1974.

Attention should be paid to any necessary safety precautions, and the method should only be operated by trained personnel.

1. Scope

This method describes a procedure for assessing the flow properties of phenolic and alkyd moulding materials.

2. Reference

The following standards publication is referred to in this standard.

BS 593 Laboratory thermometers

3. Principle

The flow properties of moulding materials are assessed by measuring the time taken for a mould in the form of a cup of specified dimensions to close under a specified pressure and temperature.

4. Apparatus

The following apparatus is required.

4.1 Standard compression mould of form and dimensions shown in figure 1. The mould shall comply in all respects with the details shown in the figure.

A pocket for the thermometer shall be provided in the die to reach within 13 mm of the outside wall of the moulding.

The mould shall be made of good quality steel as usually used for moulds, e.g. high carbon, high chromium, air-hardening alloy steel, hardened to 45 HRC to 48 HRC (500 HV to 550 HV).

The surfaces marked 'X' in figure 1 shall be smooth and polished. The final polishing shall be in the line of the tool draw, i.e. parallel to the direction of movement of the press.

The method of heating the mould shall be such as to maintain a uniform temperature within $\pm 1^\circ\text{C}$ of the specified temperature.

4.2 Compression moulding press, capable of exerting and maintaining the pressure required.

The force on the mould shall be 100 ± 5 kN, calculated according to the expression appropriate to the type of press in use. In the case of an up-stroking press

$$F = Ap - mg$$

where

F is the force on the mould (in N)

A is the cross sectional area of the ram (in m^2)

p is the gauge pressure (in Pa)

m is the mass of ram, platen and mould (in kg)

g is the acceleration due to gravity (in m/s^2)