

International Standard



667

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Rubber, compounded — Determination of cure rate — Shearing disk method

Mélanges à base de caoutchouc — Détermination de la vitesse de vulcanisation — Méthode au consistomètre à cisaillement

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 667 was developed by Technical Committee ISO/TC 45, *Rubber and rubber products*.

This second edition was submitted directly to the ISO Council, in accordance with clause 5.10.1 of part 1 of the Directives for the technical work of ISO. It cancels and replaces the first edition (i.e. ISO 667-1975), which had been approved by the member bodies of the following countries :

Australia	Hungary	Spain
Austria	India	Sweden
Brazil	Israel	Switzerland
Canada	Italy	United Kingdom
Chile	Japan	USA
Colombia	Korea, Rep. of	USSR
Czechoslovakia	Netherlands	Yugoslavia
France	New Zealand	
Germany, F. R.	Poland	

No member body had expressed disapproval of the document.

Rubber, compounded — Determination of cure rate — Shearing disk method

1 Scope and field of application

This International Standard specifies a method for determining the rate of cure of unvulcanized compounded stocks of rubbers by means of the shearing disk viscometer.

2 Reference

ISO/R 289, *Determination of viscosity of natural and synthetic rubbers by the shearing disk viscometer*.

3 Procedure

Determine the viscosity of the compounded stock in accordance with the method given in ISO/R 289, using the rotor 38 mm in diameter.

Keep the test temperature of the die cavity within $\pm 0,5$ °C of the temperature appropriate to the compound under test (no single temperature can be specified that would be suitable for all compounds). The time starts from the moment the die cavity is closed. Start the rotor 1 min after the closing of the die. Continue the test until the Mooney viscosity reaches 40 units above the minimum.

From the graph of Mooney viscosity against time, or from the continuous curve recorded, obtain the following parameters (see the figure) :

$M_{\min}$ i.e. the minimum viscosity reading;

t_5 i.e. the time, in minutes, for the viscosity to reach a value 5 units above the minimum;

t_{35} i.e. the time, in minutes, for the viscosity to reach a value 35 units above the minimum.

4 Test report

The test report shall include the following particulars :

- a reference to this International Standard;
- the test temperature, i.e. the measured temperature of the die cavity;
- $M_{\min}$ in Mooney viscosity units;
- t_5 and t_{35} in minutes;
- $\Delta_t = (t_{35} - t_5)$.