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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Rubber compounding ingredients — Carbon black (pelletized) — Determination of fines content

Ingrédients de mélange du caoutchouc — Noir de carbone (en granules) — Détermination de la teneur en matières fines

Reference number
ISO 1435 : 1988 (E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 1435 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*.

This third edition cancels and replaces the second edition (ISO 1435 : 1981), clause 1 and sub-clauses 4.1, 4.6, 5.2 and 5.4 of which have been technically revised.

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Rubber compounding ingredients — Carbon black (pelletized) — Determination of fines content

1 Scope

This International Standard specifies a method for the determination of the portion of a sample of pelletized carbon black that will pass through a sieve with 125 µm nominal aperture size (fines content). It is applicable to all types of pelletized carbon black for use in the rubber industry.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 565 : 1983, *Test sieves — Woven metal wire cloth, perforated plate and electroformed sheet — Nominal sizes of openings.*

3 Principle

Accurate weighing of a mass of pelletized carbon black and sieving through a standard sieve with shaking and tapping. Measurement, as fines, of the amount of material passing through the sieve.

4 Apparatus

4.1 Mechanical sieve shaker, which imparts a uniform rotary and tapping motion to a stack of 200 mm diameter sieves. The mechanism shall produce 280 to 320 rotary motions per minute (4,6 to 5,3 per second) and 140 to 160 taps per minute (2,3 to 2,7 per second) to a cork fitted into the centre of the top sieve cover (4.4) and extending 3 to 9 mm above it. Only cork shall be used, rubber being unsuitable.

NOTES

1 Details of a suitable machine are available from the ISO/TC 45 Secretariat, British Standards Institution, 3 York Street, Manchester, M2 2AT, United Kingdom.

2 Other types of machine that can be shown to give comparable results may be used.

4.2 Sieve, approximately 200 mm in diameter and 25 mm in height, to fit the mechanical sieve shaker (4.1). The sieve shall be of nominal aperture size 125 µm and shall comply with the requirements of ISO 565.

4.3 Bottom receiver pan.

4.4 Sieve cover.

4.5 Riffle sample splitter, with six or more parallel troughs on each side, designed to divide a sample of carbon black into two equal parts.

4.6 Balance, accurate to 1 mg.

5 Procedure

5.1 Obtain the test portion of carbon black as follows :

5.1.1 Pass the gross sample through the riffle sample splitter (4.5) to obtain a test portion of 22 to 28 g.

5.1.2 Weigh the test portion to the nearest 0,1 g.

5.2 Transfer the weighed test portion to the sieve (4.2). Using other sieves as spacers if necessary, cover the top and place the receiver pan (4.3) underneath. If spacers are used, the sieve containing the test material shall be placed at the bottom of the stack.

5.3 Allow the sieve assembly to shake for 5 min with the hammer operating.

Another duration of shaking may be chosen by agreement between the purchaser and the supplier.

5.4 Remove the sieve and receiver pan from the shaking device, and weigh the carbon black in the receiver pan to the nearest 1,0 mg.