
**Rubber compounding ingredients —
Carbon black — Determination of pellet
size distribution**

*Ingrédients de mélange du caoutchouc — Noir de carbone —
Détermination de la distribution granulométrique*

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Foreword

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 8511 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 3, *Raw materials (including latex) for use in the rubber industry*.

This third edition cancels and replaces the second edition (ISO 8511:1995), of which it constitutes a minor revision. The following changes have been made:

- the normative references have been updated;
- in the footnote to Clause 4, the details of the suppliers of the Ro-Tap sieve shaker have been updated;
- the precision statement has been moved to an informative annex.

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WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

1 Scope

Carbon black for the rubber industry is generally pelletized to reduce dust and to improve handling and incorporation into polymers. Variations in pellet size distribution can affect dispersion in polymers, bulk handling, and conveying properties.

This International Standard specifies a method for the determination of the pellet size distribution of carbon black.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*

ISO 1124, *Rubber compounding ingredients — Carbon black shipment sampling procedures*

3 Principle

Pelletized carbon black is passed through a succession of sieves with different-sized apertures and the amount retained by each is determined.

4 Apparatus

4.1 Mechanical sieve shaker¹⁾, which imparts a uniform rotary and tapping motion to a stack of nominally 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 mm to 9 mm above it. Only cork shall be used, rubber being unsuitable.

4.2 Sieves, nominally 200 mm diameter, 25 mm high, of woven metal wire cloth, conforming to ISO 565, having apertures of 2,00 mm, 1,00 mm, 0,5 mm, 0,25 mm and 0,125 mm.

A 0,71 mm aperture sieve may be added if pellets produced by a dry process are tested.

1) A Ro-Tap sieve shaker is an example of a suitable apparatus available commercially from:
Tyler Power Systems, 8570 Tyler Boulevard, Mentor, OH 44060, USA,
or
Haver & Boecker, Ennigerloher Str. 64, D-59302 Oelde, Germany.

This information is given for the convenience of users of this International Standard and does not constitute an endorsement by ISO of this apparatus. Other types of apparatus may be used if they lead to the same results.