

TECHNICAL REPORT

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Carbon blacks used in rubber products — Classification system

*Noirs de carbone utilisés dans les produits en caoutchouc — Système de
classification*



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Foreword

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The main task of technical committees is to prepare International Standards, but in exceptional circumstances a technical committee may propose the publication of a Technical Report of one of the following types:

- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
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Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

ISO/TR 12245, which is a Technical Report of type 3, 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*.

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Carbon blacks used in rubber products — Classification system

1. SCOPE

- 1.1 This classification system is used to classify rubber grade carbon blacks by the use of a four-character nomenclature system. The first character gives some indication of the influence of the carbon black on the rate of cure of a typical rubber compound containing the black. The second character gives information on the average particle size of the carbon black. The last two characters are assigned arbitrarily.
- 1.2 All rubber grade carbon blacks for which a number is currently assigned at the time of publication of this classification system are listed in Tables 1 and 2 together with some of their typical properties.
- 1.3 Assignment of a number is exclusively the ASTM D-24 Committee's responsibility.

2. REFERENCES

2.1 ISO Standards

- 37-1977 Rubber, vulcanized - Determination of tensile stress-strain properties.
- 1304-1985 Rubber compounding ingredients - Carbon black - Determination of iodine adsorption number - Titrimetric method.
- 1306-1987 Rubber compounding ingredients - Carbon black (pelletized) - Determination of the pour density.
- 2393-1994 Rubber test mixes - Preparation, mixing and vulcanization - Equipment and procedures.
- 3257-1992 Rubber compounding ingredients - Carbon black - Method of evaluation in styrene-butadiene rubber.
- 3417-1991 Rubber - Measurement of vulcanization characteristics with the oscillating disc cure meter.
- 4652-1994 Rubber compounding ingredients - Carbon black - Determination of specific surface area - Nitrogen adsorption methods.
- 4656/1-1985 Rubber compounding ingredients - Carbon black - Determination of dibutylphthalate absorption number - Part 1: method using absorptometer.
- 5435-1994 Rubber compounding ingredients - Carbon black - Determination of tinting strength.
- 6810-1985 Rubber compounding ingredients - Carbon black - Determination of surface area - CTAB adsorption methods.
- 6894-1991 Rubber compounding ingredients - Carbon black - Preparation of samples for determination of dibutylphthalate absorption number (compressed sample).

2.2 ASTM Standards

- D-3192 Test methods for Carbon Black evaluation in NR (Natural Rubber).
- D-1765 Standard classification system for Carbon Blacks used in Rubber Products.