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Road vehicles — Brake lining friction materials — Product definition and quality assurance

Véhicules routiers — Matériaux de friction pour garnitures de freins — Définition du produit et assurance qualité

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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 15484 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 2, *Braking systems and equipment*.

Introduction

Drum and disc brake friction materials are important functional parts of the wheel brakes. They are pressed against the rotating brake drum or disc by a clamping force applied by the actuating mechanism of the brake during a braking operation. The kinetic energy of the vehicle is thereby largely transformed into heat. The brake pad or lining is of essential importance for the effectiveness and user comfort of the brake system. Disc brake pads consist of the friction material itself, the pad carrier plate and, in some cases, silencing parts, pad wear warning devices and retaining or guiding elements. The friction material is usually permanently bonded to the backing plate by a bonding process in which the friction material is subjected to both heat and pressure. Underlayers can be inserted between the friction material and backing plate to improve bond strength and other properties. Drum brake linings consist of the friction material itself, usually shaped to match the radius of the brake shoe onto which it is subsequently attached. The friction material is usually attached to the supporting brake shoe either by bonding or by the use of rivets. Conventional friction materials consist mainly of fibrous materials, bonding agents, anti-seize agents, metals and other fillers. The friction material type, and any backing plates, anti-noise measures, pad springs and pad wear warning devices, etc., are defined in the relevant figure.

The basic aim of this International Standard is:

— to ensure the product is verified and validated during all project phases for transfer into series production;

— to increase product reliability and at the same time limit the cost of testing;

— to identify the necessary test standards to equally cover brake performance and noise.

Visibility of production spread and the opportunity to select parts for testing from assorted areas of compressibility are the main reasons for the statistical evaluation. The procedures described in this International Standard are based on ISO/TS 16949 and encompass the entire product quality preplanning process, from the definition phase up to the determination of parameters for series production. These are defined in this International Standard as phases 1 to 7.