

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 4832/1 was developed by Technical Committee ISO/TC 45, *Rubber and rubber products*, and was circulated to the member bodies in June 1979.

It has been approved by the member bodies of the following countries :

Belgium	Germany, F.R.	Spain
Brazil	Hungary	Thailand
Canada	India	Turkey
China	Italy	United Kingdom
Czechoslovakia	Poland	USA
Denmark	Romania	USSR
Egypt, Arab Rep. of	South Africa, Rep. of	

No member body expressed disapproval of the document.

Rubber, vulcanized — Classification — Part 1 : Description of the classification system

0 Introduction

This International Standard has been prepared in order to provide a reference classification system for vulcanized rubbers based on their physical properties.

It is to be used as a source of material quality "fine call-out" designations on procurement documents and drawings, and for the preparation of specifications for rubber products.

Commercially available vulcanized rubber materials classified by the system described in this International Standard and intended to cover the majority of applications will be listed in part 2 of this International Standard.¹⁾

1 Scope and field of application

1.1 This International Standard describes a system for the classification and designation of solid vulcanized rubbers serving a wide range of industrial needs.

1.2 The classification system is based on the premise that the properties of all vulcanized rubbers can be arranged into characteristic material designations. These designations are determined by **Type**, based on resistance to heat ageing, by **Class**, based on resistance to swelling in oil, and by **Group**, based on low temperature resistance. The combined use of **Type**, **Class** and **Group**, and the values for basic and additional properties, permits the complete description of the quality of any vulcanized rubber, referred to hereafter as "material".

1.3 The purpose of this classification system is to provide guidance to purchasers and suppliers in the selection of practical, commercially available materials and further to provide a method of specifying these materials by the use of a simple "fine call-out" designation.

1.4 The classification system for the materials described in this International Standard will provide more information about rubber as a material in specifications. It will also save the user effort in the selection of suitable materials, and prevent the user from specifying impractical and impossible combinations of properties.

1.5 In all cases where the provisions of this classification system would conflict with those of detailed specifications for a particular product, the latter shall take precedence.

NOTE — If the rubber product is to be used for purposes for which the requirements are too specific to be completely described by this classification system, it will be necessary for the purchaser to consult with the supplier to ensure achievement of the properties to suit the actual conditions of service in which the product is to be used.

1.6 This classification system has been developed to permit the addition of descriptive values for future materials, without complete reorganization of the classification system, and to facilitate the incorporation of future methods of test to keep pace with the changing requirements of industry.

2 References

ISO 84, *Rubber, vulcanized — Determination of tear strength (trouser, angle and crescent test pieces)*.

ISO/11 38, *Determination of the adhesion strength of vulcanized rubbers to textile fabrics*.

ISO 37, *Rubber, vulcanized — Determination of tensile stress-strain properties*.

ISO 48, *Vulcanized rubbers — Determination of hardness (Hardness between 30 and 85 IRHD)*.

ISO 132, *Vulcanized rubbers — Determination of resistance to flux cracking (De Mattia type machine)*.

ISO 133, *Rubber, vulcanized — Determination of crack growth (De Mattia)*.

ISO 168, *Rubber, vulcanized — Accelerated ageing or heat resistance tests*.

ISO 471, *Rubber — Standard temperatures, humidities and times for the conditioning and testing of test pieces*.

ISO/R 812, *Method of test for temperature limit of brittleness for vulcanized rubbers*.

ISO 813, *Vulcanized rubber — Determination of adhesion to metal — One plate method*.

1) It is intended to publish ISO 4632/2 as a Technical Report.