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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 39697.1-2020

**Rubber or plastics covered rollers - Specifications - Part 1:
Requirements for hardness**

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Table of Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Hardness requirements

Foreword

GB/T 39697 "Rubber or plastic coated roller specifications" is divided into 3 parts:

---Part 1: Hardness requirements;

---Part 2: Surface characteristics;

---Part 3: Dimensional tolerance:

This part is Part 1 of GB/T 39697:

This section was drafted in accordance with the rules given in GB/T 1:1-2009:

The translation method used in this section is equivalent to ISO 6123-1:2015 "Rubber or Plastic Covered Roll Specification Part 1: Hardness Requirements":

For ease of use, this section has also made the following editorial changes:

--- Replace ISO 7267-1 with ISO 48-6;

--- Replace ISO 7267-2 with ISO 48-7;

--- Replace ISO 7267-3 with ISO 48-8:

This part was proposed by the China Petroleum and Chemical Industry Federation:

This part is organized by the National Rubber and Rubber Products Standardization Technical Committee Rubber Miscellaneous Technical Committee (SAC/TC35/SC7)

Focus:

Drafting organizations of this section: Zhejiang Zhengrong Roll Co., Ltd., Nanjing Shengqiang Rubber Co., Ltd., Hebei Chunfeng Yinxing Rubber Roll Co., Ltd:

Company, Hebei Tongchang Rubber Roller Co., Ltd., Nanjing Dongrun Special Rubber Co., Ltd., Zhejiang Fuming Industrial Machinery Co., Ltd:

Introduction

Rubber or plastic coated rollers are usually made of cylindrical metal roller cores covered with rubber or plastic, and can be made into various

Size and hardness level:

Specification for rubber or plastic coated rollers

Part 1: Hardness requirements

1 Scope

This part of GB/T 39697 specifies the hardness requirements of rubber or plastic coated rolls:

2 Normative references

The following documents are indispensable for the application of this document: For dated reference documents, only the dated version applies to this document:

For undated references, the latest version (including all amendments) applies to this document:

ISO 48-6: Determination of hardness of vulcanized rubber or thermoplastic rubber: Part 6: Determination of apparent hardness of rubber rollers by IRHD method

3 Hardness requirements

After consultation between the parties concerned, one of the following hardness can be selected as the hardness of the rubber or plastic coated roller:

- a) International Rubber Hardness (IRHD);
- b) Shore hardness (Shore A or Shore D);
- c) Zhao's hardness (P)

Since the hardness will be affected by temperature, the operating temperature of the coated roll should be specified if necessary:

International Rubber Hardness (IRHD), Shore Hardness and Zhao Hardness (P)

International rubber hardness and Shore A hardness are equivalent: If medium accuracy is required, it is allowed to use Shore A hardness tester instead of international rubber hardness

However, it should be noted that due to different reading intervals, the results are not the same:

Note 1: For all manually operated hardness testers, the measurement results will be different due to different operators: Use the international rubber hardness tester or Zhao's hardness tester:

As a result, it is affected by the loading speed and whether the applied force is vertical: Using a spring-loaded Shore hardness tester, the result is more significantly affected by the pressure:

Note 2: Since the hardness is measured by indentation, the thickness of the rubber or plastic coating will affect the hardness reading: Hardness measured on the cover of the cover roll

The real hardness of the coating layer under standard laboratory conditions and the actual hardness of the coating layer are comparable only when the coating layer thickness is as follows:

a) International Rubber Hardness (IRHD):

The hardness is less than or equal to 50IRHD, and the thickness of the coating layer is not less than 9mm;

The hardness is greater than 50IRHD, and the coating thickness is not less than 6mm: