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

GB/T 43550.1-2023

**Mechanical pencils and leads for general use - Classification,
dimensions, quality and test methods - Part 1: Mechanical
pencils**

一般用途活动铅笔和铅芯 分类、尺寸、质量和试验方法 第1部分：活动铅笔
(English Translation)

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Table of Contents

Preface
Introduction
1 Scope
2 Normative references
3 Terms and Definitions
4 Category
4.1 General
4.2 Classification by structure type
4.3 Classification by mark diameter
5 Size
6 Quality
7 Test methods
7.1 Test conditions
7.2 Aperture size
7.3 Lead core performance
7.4 Lead core clamping force (lead core clamping force)
7.5 Lead remaining length
7.6 Force at core tip
7.7 Impact resistance
7.8 Durability
8 Logo
Reference

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting:

This document is Part 1 of GB/T 43550 "Classification, Dimensions, Quality and Test Methods of Mechanical Pencils and Leads for General Purposes":

GB/T 43550 has published the following parts:

---Part 1: Mechanical Pencil;

---Part 2: Black lead core:

This document is equivalent to ISO 20318-1:2019 "Classification, Dimensions, Quality and Test Methods for Mechanical Pencils and Leads for General Purposes" Part 1: Mechanical Pencils:

Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents:

Introduction

Mechanical pencils are one of the most popular writing tools among consumers: In recent years, general-purpose mechanical pencils have become increasingly popular among students:

Welcome, and with different use occasions, the types of lead core hardness and diameter are also increasing: It is worth noting that the mechanical pencil presents an overall the output is increasing year by year, but the output of mechanical pencils used for technical drawing is on a downward trend: Scope of application of GB/T 39542 (all parts) the scope is limited to technical drawing mechanical pencils and lead: Because it is different from technical drawing mechanical pencils and lead, it is necessary to make a formula suitable for general use:

Standard for mechanical pencils and lead:

GB/T 43550 "Classification, Dimensions, Quality and Test Methods of Mechanical Pencils and Lead Leads for General Purposes" is intended to consist of two parts:

---Part 1: Mechanical Pencil: The purpose is to establish quality requirements and test methods suitable for general-purpose mechanical pencils:

---Part 2: Black lead core: The purpose is to establish quality requirements and test methods for black lead cores for general-purpose mechanical pencils:

Since the release of the standard for mechanical drawing pencils and lead cores, two issues have not been resolved: One is mechanical pencil and lead packaging the markings on the product indicate that lead cores with nominal diameters of 0.35mm and 1mm are marked as 0.3mm and 0.9mm respectively: This paper attempts to accurately determine Define the diameter to solve the sign problem: Second, there is currently no scientific definition of hardness grade: Although this paper attempts to establish a purely quantitative assessment methods, but qualitative assessment is still needed: This issue is not addressed in this paper:

General purpose mechanical pencils and lead classifications, sizes, Quality and test methods Part 1: Mechanical pencils

1 Scope

This document specifies the classification, size, and quality requirements for handheld general-purpose mechanical pencils that can hold and output lead, and describes the corresponding test methods:

This document applies to general-purpose mechanical pencils and to multi-function pens equipped with a mechanical pencil unit:

This document does not apply to pencils included with mechanical instruments such as plotters:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations for undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

ISO 20318-2 Classification, dimensions, quality and test methods for mechanical pencils and lead for general use Part 2: Black lead (Me-2:Blackleads) Note: GB/T 43550.2-2023 Classification, dimensions, quality and test methods of mechanical pencils and lead for general use Part 2: Black lead (ISO 20318-2:2019,IDT)

3 Terms and definitions

The terms and definitions defined in ISO 20318-2 and the following apply to this document:

ISO and IEC maintain terminology databases used for standardization at:

---ISO online browsing platform: available from <https://www.iso.org/obp>;

mechanical pencil mechanical pencil A handheld writing instrument capable of holding and delivering lead:

multi-function pen Writing consisting of two or more writing units (mechanical pencil unit and neutral ink ballpoint pen or ink ballpoint pen refill) tool:

NOTE: At least one writing unit is a mechanical pencil:

marking diameter marking diameter A number used to classify lead cores by their thickness (diameter):

Note: Corresponds to the mechanical pencil lead classification specified in ISO 20318-2: