



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

GB/T 40169-2021

**Compression-moulded plates of ultra-high-molecular-weight
polyethylene(PE-UHMW)and high density polyethylene (PE-HD)**

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Table of Contents

Foreword

1 Scope

2 Normative references

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method to amend and adopt ISO 15527.2018 "plastic polyethylene (ultra-high molecular weight polyethylene, high-density polyethylene)

(Ethylene) Molded Sheet Requirements and Test Methods".

Compared with ISO 15527.2018, this standard has many structural adjustments. Appendix A lists this standard and ISO 15527.2018

The chapter number comparison list.

Compared with ISO 15527.2018, there are technical differences between this standard and the clauses involved in these differences have been passed on the outer margins.

The set vertical single line (|) is marked, and a list of the corresponding technical differences and their reasons is given in Appendix B.

This standard has made the following editorial changes.

--- Modify the standard name to "Ultra-high molecular weight polyethylene (PE-UHMW) and high-density polyethylene (PE-HD) molded sheet";

--- Deleted ISO 15527.2018 Appendix C (informative appendix) "Example of Mortar Abrasion Performance Tester";

---Appendix C (informative appendix) "Determination of Melt Volume Flow Rate of Large Die" has been added.

1 Scope

This standard specifies the specifications of ultra-high molecular weight polyethylene (PE-UHMW) and high-density polyethylene (PE-HD) molded plates (referred to as plates)

Symbols, codes and abbreviations, classification, naming, materials, requirements, test methods, inspection rules, signs, packaging, transportation and storage.

This standard applies to PE-UHMW boards and PE-HD boards with a thickness of 10mm~200mm.

This standard does not apply to PE-UHMW boards and PE-HD boards containing fillers and reinforcing materials.

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 article

Pieces. For undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 1033.1 Determination of the density of plastic non-foam plastics Part 1.Immersion method, liquid pycnometer method and titration method

(GB/T 1033.1-2008, ISO 1183-1.2004, IDT)

GB/T 1033.2 Determination of the density of plastic non-foam plastics Part 2.Density gradient column method (GB/T 1033.2-2010,

ISO 1183-2.2004, MOD)

GB/T 1040.2 Determination of tensile properties of plastics Part 2.Test conditions for molding and extrusion plastics (GB/T 1040.2-

2006, ISO 527-2.1993, IDT)

GB/T 1043.1-2008 Determination of impact properties of plastic simply supported beams Part 1.Non-instrumented impact test (ISO 179-1.

2000, IDT)

GB/T 1845.1 Plastic Polyethylene (PE) Molding and Extrusion Materials Part 1.Naming System and Classification Basis

(GB/T 1845.1-2016, ISO 17855-1.2014, MOD)

GB/T 2828.1 Sampling inspection procedure by attributes Part 1.Batch inspection sampling plan retrieved by acceptance quality limit (AQL)

(GB/T 2828.1-2012, ISO 2859-1.1999, IDT)

GB/T 2918 Standard environment for condition adjustment and testing of plastic specimens (GB/T 2918-2018, ISO 291.2008, MOD)

GB/T 3398.1 Plastic Hardness Determination Part 1.Ball Indentation Method (GB/T 3398.1-2008, ISO 2039-1.2001,

IDT)

GB/T 3682.1 Determination of Melt Mass Flow Rate (MFR) and Melt Volume Flow Rate (MVR) of Plastic Thermoplastics

Part 1. Standard method (GB/T 3682.1-2018, ISO 1133-1:2011, MOD)

GB/T 3960 Plastic sliding friction and wear test method

GB/T 9345.1-2008 Determination of Ash in Plastics Part 1. General Methods (ISO 3451-1:1997, IDT)

GB/T 21461.1 Plastic Ultra High Molecular Weight Polyethylene (PE-UHMW) Molding and Extrusion Materials Part 1. Naming System and

Classification basis (GB/T 21461.1-2008, ISO 11542-1:2001, IDT)

GB/T 21461.2-2008 Plastic Ultra High Molecular Weight Polyethylene (PE-UHMW) Molding and Extrusion Materials Part 2. Sample

Preparation and performance determination (GB/T 21461.1-2008, ISO 11542-2:1998, MOD)

SH/T 1818 Plastic UHMWPE Mortar Abrasion Test Method