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

GB/T 9639.1-2008

**Plastics film and sheeting -- Determination of impact resistance
by the free-falling dart method -- Part 1: Staircase methods**

塑料薄膜和薄片 抗冲击性能试验方法 自由落镖法 第1部分：梯级法

(English Translation)

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Foreword

GB/T 9639 Plastics Film and Sheeting - Determination of Impact Resistance by the Free-falling Dart Method is divided into two parts:

---Part 1: Staircase Method;

---Part 2: Instrumented Puncture Test.

This is Part 1 of GB/T 9639, which corresponds to the international standard ISO 7765-

1.1988 Plastics Film and Sheeting - Determination of Impact Resistance by the Free-falling Dart Method - Part 1: Staircase Methods. This Part is equivalent to the international standard ISO 7765-1:1988 Plastics Film and Sheeting - Determination of Impact Resistance by the Free-falling Dart Method - Part 1: Staircase Methods. The technical content is identical, with only a few editorial modifications.

This Part serves as a replacement of GB/T 9639-1988 Plastics-film and Sheeting -Determination of Impact Resistance - Free Falling Dart Method.

In comparison with GB/T 9639-1988, this Part has the following main changes:

---"Part 1: Staircase Method" is added to the title;

---"Foreword" is added;

---Method A and Method B are added to the "Scope" (see 1.2 and 1.3);

---"GB/T 20220-2006 Plastics - Film and Sheeting - Determination of Average Thickness of

a Sample, and Average Thickness and Yield of a Roll, by Gravimetric Techniques (gravimetric thickness) (ISO 4591:1992, IDT)" and "GB/T 6672-2001 Plastics Film and Sheeting - Determination of Thickness by Mechanical Scanning (idt ISO 4593:1993)" are added to Chapter 2;

---Chapter 3 "Significance" is added;

---"The working pressure of the clamps shall be not less than 300 kPa" in 5.1 is modified into "The clamps shall be provided with suitable means of maintaining sufficient contact to hold the test specimen firmly in place during the test";

"Rubber-like gaskets must be affixed to the contact surface of the ring clamp and the test specimen" in 5.1.1 is modified into "Rubber-like gaskets may be affixed to the specimen contact surfaces of both clamps to provide a cushion to minimize thickness variation effects". 5.1.2 and 5.4 are added. The sequence of the clauses is adjusted.

---Chapter 7 "Conditioning and Testing Atmospheres" is added.

Plastics Film and Sheeting - Determination of Impact Resistance by the Free-falling Dart Method - Part 1:

Staircase Method

1 Scope

1.1

This Part of GB/T 9639 specifies methods for the determination of the energy that causes plastics film and sheet less than 1 mm in thickness to fail under specified conditions of impact of a free-falling dart from a specified height that would result in failure of 50% of the specimens tested.

1.2

Two methods of test are described.

1.2.1 Method A employs a dart with a 38 mm $\pm$ 1 mm diameter hemispherical head

dropped from a height of 0.66 m $\pm$ 0.01 m. This method may be used for materials whose impact resistance requires masses of about 0.05 kg to about 2 kg to fracture them.

1.2.2 Method B employs a dart with a 50 mm $\pm$ 1 mm diameter hemispherical head

dropped from a height of 1.50 m $\pm$ 0.01 m. Its range of applicability is from about 0.3 kg to about 2 kg.

1.3 The measurement technique is the staircase method. A uniform missile mass increment is employed during testing and the missile weight is decreased or increased by the uniform increment after test of each specimen, depending upon the result (failure or no failure) observed for the specimen.

2 Normative References

Through the reference in this Part of GB/T 9639, the clauses of the following documents become clauses of this Part. In terms of references with a specified date, all the subsequent modification sheets (excluding the corrected content) or revised versions are not applicable to this Part. However, the various parties that reach an agreement in accordance with this Part are encouraged to explore the possibility of adopting the latest version of these documents. In terms of references without a specified date, the latest version is applicable to this Part.

GB/T 2918-1998 Plastics - Standard Atmospheres for Conditioning and Testing (idt ISO 291:1997) GB/T 6672-2001 Plastics Film and Sheeting - Determination of Thickness by