

ICS 35.240.15  
CCS A 90

**GA**

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

**GA 460.5-2004**

Replacing GA 460.5-2004

---

**Technical specifications for body materials and printing films  
for Resident Identity Cards - Part 5: Printing film  
(English Translation)**

**Issued on: March 18, 2020**

**Implemented on: June 1, 2020**

---

**Issued by: Ministry of Public Security**

## Table of Contents

|                                                                                                        |
|--------------------------------------------------------------------------------------------------------|
| Preface                                                                                                |
| 1 Scope                                                                                                |
| 2 Normative references                                                                                 |
| 3 Terms and definitions                                                                                |
| 4 Technical requirements                                                                               |
| 4.1 Sheet thickness                                                                                    |
| 4.2 Appearance                                                                                         |
| 4.3 Printing mark                                                                                      |
| 4.4 Light transmittance                                                                                |
| 4.5 Haze                                                                                               |
| 4.6 Peel strength (between different materials)                                                        |
| 4.7 Heat shrinkage rate                                                                                |
| 4.8 Tensile strength                                                                                   |
| 4.9 Elongation at break                                                                                |
| 4.10 Surface tension of printing surface                                                               |
| 4.11 Surface roughness of printing surface                                                             |
| 5 Inspection method                                                                                    |
| 5.1 Test environment and conditions                                                                    |
| 5.2 Thickness                                                                                          |
| 5.3 Appearance and printed mark inspection                                                             |
| 5.4 Light transmittance and haze                                                                       |
| 5.5 Heat shrinkage                                                                                     |
| 5.6 Peel strength (press the sample according to the production process parameters of the certificate) |
| 5.7 Tensile strength and elongation at break                                                           |
| 5.8 Surface tension of printing surface                                                                |
| 5.9 Surface roughness of printing surface                                                              |
| 6 Quality assessment procedures                                                                        |
| 6.1 Batch                                                                                              |
| 6.2 Sampling                                                                                           |
| 6.3 Inspection classification                                                                          |
| 6.4 Judgment Rule                                                                                      |

## 7 Packaging, transportation and storage

### 7.1 Packaging

### 7.2 Transport

### 7.3 Storage

## Appendix A (Normative Appendix) Test Method for Peeling Strength of Card Body Material and Printed Film

## Foreword

GA/T 460 "Technical Specifications for Resident ID Card Body Materials and Printing Films" is divided into five parts.

---Part 1: Flat-layer white PETG film for card making;

---Part 2: Printed white PETG film for card making;

---Part 3: Protective PETG film for card making;

---Part 4: White PETG film for card-making modules and coil carrier layer;

---Part 5: Printing film.

This part is part 5 of GA/T 460.

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

This part replaces GA 460.5-2004 "Resident ID Card Body Material and Printing Film Technical Specification Part 5: Printing Film", Compared with GA 460.5-2004, the main technical changes are as follows.

---Revised as a recommended standard;

---Modified the normative reference documents GB/T 2410, GB/T 2828.1, GB/T 10610, GB/T 14216 and ASTM D882-2012 version number (see Chapter 2, Chapter 2 of the 2004 edition);

---Added the description of the test method judgment result (see Chapter 5, Chapter 5 of the 2004 edition).

This part was proposed by the Public Security Administration of the Ministry of Public Security.

This part is under the jurisdiction of the Computer and Information Processing Standardization Technical Committee of the Ministry of Public Security.

Drafting unit of this section. The First Research Institute of the Ministry of Public Security.

## 1 Scope

This part of GA/T 460 specifies the technical requirements, inspection methods, and quality assessment procedures for personalized printing films used in the preparation of resident ID cards.

Order and storage conditions.

This part is suitable for making transparent and personalized printing film for resident ID card using PET as raw material.

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

GB/T 2410-2008 Determination of light transmittance and haze of transparent plastics  
GB/T 2828.1-2012 Sampling inspection procedures by attributes Part 1: Batch inspection sampling searched by acceptance quality limit (AQL) plan  
GB/T 2918-2018 Standard environment for condition adjustment and testing of plastic samples  
GB/T 6672-2001 Plastic film and sheet thickness determination mechanical measurement method  
GB/T 10610-2009 Product Geometric Technical Specification (GPS) Surface Structure Profile Method. Rules and Methods for Evaluating Surface Structure  
GB/T 14216-2008 Determination of the wetting tension of plastic films and sheets  
ASTM D882-2012 Test Method for Tensile Properties of Plastic Film

## 3 Terms and definitions

The following terms and definitions apply to this document.

Printing film

Double-layer co-extrusion by the extruder, two-way stretching, and then cut into A4 (210mmx297mm) size PET for personalized printing film.

Peel strength

The adhesion strength of the printing film and the PETG film of the card body.

T type peel strength the average tensile force required to gradually pull apart the adhesive layer of the sample (width 10mm) at an angle of 90° under specified conditions using T-type test samples.

#### **4.1 Sheet thickness**

Sheet thickness.  $100\mu\text{m}\pm 5\mu\text{m}$ .