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# Quality Levels for Envelopes 1993



Public Works and  
Government Services Canada

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Canada

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## INTRODUCTION

*Quality Levels for Envelopes 1993* have been developed by the Canada Communication Group (CCG), Public Works and Government Services Canada (PWGSC). It is the intent of this document to provide a means of specifying, between purchaser and supplier, the quality requirements of envelopes purchased by PWGSC.

Three quality levels have been established: Prestige, Informational and Office. At each level the quality required in the finished envelopes is expressed in measurable values as listed in the "Detailed Requirements". Commensurate with each level is the need that the artwork or components supplied permit the production of the desired quality. It will be noted that any envelope at any quality level may be required for automatic insertion and if so will be identified as such.

The Prestige Quality Level will demand above average process control of both forming and printing systems and will mean the best that can be produced by the present state of the art. The Informational and Office Quality Levels can be achieved by normal commercial practices and attention to plate-making, ink flow and equipment operation.

No attempt has been made to restrict or control manufacturing processes; this document rather sets the quality which must be achieved in the product. It is the responsibility of the supplier to ensure that the envelopes meet the quality requirements regardless of the method of manufacture. The tabular data shown in these levels were developed from reviewing a large number of sample envelopes produced by a variety of commercial envelope manufacturers. All of the quality requirements can be attained and are quite normal in most plants. However, some of them require attention to detail beyond that which is normal in a few plants.

It is incumbent on the contractor to supply envelopes which conform to good workmanship, sound trade practices, satisfactory materials and consistency throughout the job. These requirements apply to all quality attributes whether or not they are specifically mentioned in this document.

Questions concerning a specific contract should be directed to the contracting officer named on the contract.

Please direct any comments, proposed revisions or requests for further copies of this publication to:

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## **2** TYPICAL ENVELOPES

### **2.1 Prestige**

Fine grade paper stock, embossed, multi-colour or four-colour process printing in solids or halftones, printed on any or all surfaces, face, flap or back of envelope, with or without window and/or special closure. Suitable for automatic insertion if so specified.

### **2.2 Informational**

Any envelope paper stock, multi-colour (maximum 4 colours) printing or four-colour process printing in solids or halftones, printed on face, flap or back of envelope, with or without window and/or special closure. Suitable for automatic insertion if so specified.

### **2.3 Office**

Kraft or bond paper stock, printing in a maximum of two colours on face and/or flap, with or without window and/or special closure. Suitable for automatic insertion if so specified.

## **3** DETAILED REQUIREMENTS

### **3.1 Size**

The dimensions measured are the height and length of the envelope when it is both empty and flat.

The dimensions of the formed enveloped shall be as specified within a tolerance of

<b>Prestige</b>	<b>Informational</b>	<b>Office</b>
± 2.0 mm	± 2.0 mm	± 2.0 mm
(5/64 in.)	(5/64 in.)	(5/64 in.)

### **3.2 Formation**

Formation will be checked by measuring the linear displacement of the actual positioning of folds, seams and windows from their intended positioning.

All flaps, seams, folds and windows shall be positioned as specified within a tolerance of

<b>Prestige</b>	<b>Informational</b>	<b>Office</b>
± 2.0 mm	± 2.0 mm	± 2.0 mm
(5/64 in.)	(5/64 in.)	(5/64 in.)

### **3.3 Ink Density of Solid Print**

The average density is found by calculating the numerical average of density measurements taken on envelopes sampled from the entire job lot. The quantity and method of sampling will be performed in accordance with the Canada Communication



Group of PWGSC publication entitled *Guide to the Inspection of Printed Products 1993*. Density is measured with a reflection densitometer such as a MacBeth 1155 SPI or equivalent on a solid print area using the following filter settings: for black ink, use the Visual filter; for red ink, use the magenta filter; for green ink printed on golden kraft, use the cyan; and for blue ink printed on white or blue stock, use the magenta.

Average ink density of solids shall be

Description	Prestige	Informational	Office
Black Ink on White or Golden kraft	*1	*0.90	*0.85
Red FIP Ink on White Paper	1.05-1.15	1-1.20	0.95-1.25
Green PMS 348 Ink on Golden kraft	N/A	1-1.20	0.95-1.25
Pantone Reflex Blue Ink on Air Mail Blue Paper	1.10-1.20	1.05-1.25	1-1.30

\*Not less than

### 3.4 Density Variation of Solid Print

#### (a) On a single envelope

Where sufficiently large printed solids exist on a single envelope, several density measurements are made at different points and the results expressed as a density range, the maximum density measured minus the minimum density measured.

Density range from point to point on a single envelope shall not exceed

Prestige	Informational	Office
0.05	0.07	0.10

#### (b) Throughout the entire job lot

A random sampling of envelopes is taken from the entire job lot in accordance with the Canada Communication Group, PWGSC publication entitled *Guide to the Inspection of Printed Products 1993*. Density measurements are taken on each envelope and the results expressed as a density range, the maximum density measured minus the minimum density measured.

Density range from envelope to envelope throughout the entire job lot shall not exceed

Prestige	Informational	Office
0.10	0.15	0.20

### 3.5 Density of Type

(a) The density of type matter is measured with a micro-densitometer (e.g., MacBeth PCM II, Filter A Optical Comparator or similar instrument). The average density is found by calculating the numerical average of density measurements taken on randomly selected samples from the entire job lot. The quantity and method of sampling will be in accordance with the Canada Communication Group, PWGSC publication entitled *Guide to the Inspection of Printed Products 1993*.



Average type density shall not be less than the specifications.

Description	Prestige	Informational	Office
Black Ink on White	0.85	0.80	0.75
Black Ink on Golden Kraft	N/A	0.70	0.65
Red FIP Ink on White Paper	0.70	0.65	0.60
Green PMS 348 Ink on Golden Kraft	N/A	0.55	0.50
Pantone Reflex Blue Ink on Air Mail Blue Paper	0.70	0.65	0.60

(b) The overall range of type density (maximum measurement minus minimum measurement) found in the random samples shall not exceed the specified values.

Maximum acceptable range of type density

Prestige	Informational	Office
0.04	0.08	0.12

### 3.6 Image Positioning

Image displacement is recorded as the linear distance between specified and actual positioning.

All images shall be positioned as specified within a tolerance of

Prestige	Informational	Office
± 2.0 mm (5/64 in.)	± 2.0 mm (5/64 in.)	± 2.0 mm (5/64 in.)

### 3.7 Image Skew

Skew is the displacement of the image axis (horizontal or vertical) from its intended alignment. To measure the skew of a line of text, draw a line along the baseline of the type characters and extend the line to both sides of the envelope. At each side of the envelope, measure the distance between the line and the top of the envelope. Any difference in these two measurements indicates skew and this difference shall not exceed the specifications.

Maximum image skew shall not exceed

Prestige	Informational	Office
± 1.0 mm (3/64 in.)	± 1.0 mm (3/64 in.)	± 1.0 mm (3/64 in.)

### 3.8 Register

Misregister is recorded as the linear displacement of any colour in any direction relative to another colour when these two colours are intended to be in alignment.



Misregister shall not exceed

Prestige	Informational	Office
0.05 mm (0.002 in.)	0.10 mm (0.004 in.)	0.20 mm (0.008 in.)

### 3.9 Voids in Type and Solids

Voids are measured on either the front or back surfaces on the envelope as follows. Small voids with a diameter of 0.20 mm (0.008 in.) or less are given a value of 1; large voids with a diameter of more than 0.20 mm (0.008 in.) are given a value of 3. The number of small and large voids are counted and the *Total Void Count* equals the number of small voids times one plus the number of large voids times three.

(a) Total Void Count on any one envelope shall not exceed

Prestige	Informational	Office
2	5	10

(b) Average Void Count throughout the entire job shall not exceed

Prestige	Informational	Office
1	2	6

### 3.10 Plugging of Type

Plugging is the filling-in of open areas of a printed character such as *a*, *e*, or *o*. The degree of plugging is measured with a magnifier having a measuring reticle and is expressed as the percentage of open area that has filled in.

Plugging shall not exceed

Prestige	Informational	Office
0%	5%	10%

### 3.11 Doubling of Type

The secondary or ghost image adjacent to the primary character is measured with a magnifier having a measuring reticle and is expressed as a percentage of the primary image.

Doubling shall not exceed

Prestige	Informational	Office
0%	5%	10%

### 3.12 Rub-Resistance

A representative sample of printed material is placed on a Sutherland rub tester (or equivalent instrument) and given 25 rubs at a pressure of 1 psi. Density measurements are then made on the rub-off smear, having prezeroed the densitometer on an unmarked sample of the stock. An average density is calculated for the rub-off smear.





Density of rub-off smear shall not exceed

Prestige	Informational	Office
0.0	0.03	0.04

### 3.13 Extraneous Marking

Lines, spots, smears or other extraneous (background) markings are assessed visually. Generalized markings, covering a large area, (e.g., scumming) are assessed in terms of average reflection density of the affected area.

Maximum acceptable background density

Prestige	Informational	Office
0.02	0.04	0.06

### 3.14 Sealed Seams

The adhesion of any sealed seam will be tested by slowly peeling apart the two layers of the seam. If separating the seam has caused the paper fibres to tear or pull away, then the seal is considered to be permanent. If this is observed over an area equal to 90% of the area intended to be sealed, the envelope seam shall be considered acceptable.

### 3.15 Flap Closures

#### (a) Regular Gum and Permanent Adhesives

Samples of the envelopes shall be conditioned for 24 hours in an atmosphere corresponding to a temperature of  $23^{\circ}\text{C} \pm 1^{\circ}\text{C}$  and a relative humidity of  $50\% \pm 2\%$ . Samples shall then be divided into two groups, for testing in both of the following procedures:

**Group 1:** The envelope flaps, of the gummed type, are moistened using a brush applicator (or equivalent) and just sufficient water to completely moisten the gummed area. Envelopes with pressure sensitive adhesive do not require moistening. Seal each envelope immediately by placing it face down on a smooth surface and pressing the thumb once along the entire length of the seal. Return samples to the conditioning atmosphere for a further 24 hours.

After this period, the samples are removed and tested for adhesion by slowly peeling the sealed flap from the body of the envelope. If separating the flap seam has caused the paper fibres to tear or pull away, then the seal is considered to be permanent. If this is observed over an area equal to 90% of the area intended to be sealed, the envelope closure shall be considered acceptable.

**Group 2:** The envelopes are sealed and re-conditioned for 24 hours as is Group 1 and they are placed for 24 hours in one of the following conditions:

- (a)  $-30^{\circ}\text{C} \pm 5^{\circ}\text{C}$
- (b)  $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$      $10\% \pm 5\%$  R.H.
- (c)  $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$      $85\% \pm 5\%$  R.H.
- (d)  $35^{\circ}\text{C} \pm 2^{\circ}\text{C}$      $85\% \pm 5\%$  R.H.



Following exposure to these conditions, the samples are again stored for 24 hours at  $23^{\circ}\text{C} \pm 1^{\circ}\text{C}$  and  $50\% \pm 2\%$  R.H. Adhesive strength is determined as in Group 1.

**(b) Resealable Closure**

When testing envelopes in standard flat sizes a 21.5 cm x 28 cm (8.5 in. x 11 in.) piece of millboard with an approximate weight of 100 g (3.5 oz) is placed in the envelope and the seam is sealed by pressing the thumb once along the length of seal. The envelope is then held with the seal on the bottom and shaken in a vertical motion over a distance of about 10 cm (4 in.) for 5 seconds. The envelope is then opened. This procedure is repeated for a total of 20 times. If the seal falls by opening during the test, then the adhesion shall be considered inadequate.

**(c) Mechanical Closures**

For closures such as the button and string, the same test procedure as above in (b) is to be followed with one change. It will be necessary to change the envelope closing procedure described in (b) to a method that is appropriate for the type of mechanical closure being tested.

**3.16 Extraneous Adhesive**

Envelopes shall not have any extraneous adhesive that results or may result in unwanted sealing or in any way presents the use of the envelope by either manual or automatic methods of insertion.

**3.17 Curling**

Envelopes shall show no tendency to excessive curl or warp in storage or when drawn from boxes opened for inspection such that this interferes with automatic insertion.

**3.18 Packaging**

Envelopes shall be packaged in specially made boxes with a lid which will accommodate a specified dimension and number of envelopes. Each box must be filled to capacity and labelled as to contents.

**3.19 Canada Postal Standards**

In addition to the quality parameters listed herein, all envelopes shall meet all applicable standards as noted in the *Canada Postal Standards Manual* and *Postal Code Manual* available from Canada Post.