



DataMark Mailing Services, Inc.
6700 Dixie Hwy LL
Florence, KY 41042

Phone: 859-283-9333
Web: www.DataMarkMailing.com

Automation Design Standards

Overview

Making your mailpieces automation-compatible is important. Automated equipment can process mail more efficiently, allowing the Postal Service to maintain lower rates for those pieces.

Your automation-compatible mailpiece should:

- Meet the size and weight standards in this chapter.
- Be made of good quality white or light-colored paper.
- Contain no sharp or bulky items.
- Be sealed securely.
- Be readable by automation equipment.

Mailpiece Dimensions

Minimum and Maximum Sizes

When letter-size mail is processed on automated equipment, it moves at high speeds through belts and rollers past an optical scanner and to the appropriate bin or stacker after it's sorted.

Although MLOCs (multiple line optical character reader) and BCSs (barcode sorter) can sort a variety of letter sizes, mailpieces that qualify for letter rates must be rectangular and within the minimum and maximum dimensions shown.

Letter-Size Mailpiece Dimensions		
Dimension	Minimum	Maximum
Height	3-1/2 inches	6-1/8 inches
Length*	5 inches	11-1/2 inches
Thickness	0.007 inch	1/4 inch

* The length is the dimension parallel to the delivery address.

Letter-size mail that is less than 10¹/₂ inches long processes better than longer-size pieces. MLOCs read address information that is located up to ¹/₂ inch from the right and left edges of the piece.

The following standards also apply to letter-size mail:

- Letter-size mail length is the dimension that parallels the delivery address. The top and bottom of the mailpiece also parallel the delivery address.
- Letter-size mail must be at least 0.009 inch thick if it is more than 4 ¹/₄ inches high or more than 6 inches long.
- For best results, letter-size mail more than 10 ¹/₂ inches long should have the address within 9³/₄ inches of the right edge of the mailpiece, with at least a ¹/₂-inch clear vertical space (margin) on each side (see Exhibit 3-1).
- Cards that measure more than 4 ¹/₄ inches high, 6 inches long, or 0.016 inch thick are charged postage at the First-Class Mail letter rates.

Nonmailable Pieces

All pieces (letters and cards) not meeting the minimum size standards are nonmailable.

Nonmachinable Characteristics

Nonmachinable letter-size pieces are not automation-compatible, so they are not eligible for automation rates.

First-Class mail pieces that weigh 1 ounce or less are nonmachinable and subject to a nonmachinable surcharge if any one of the following is true:

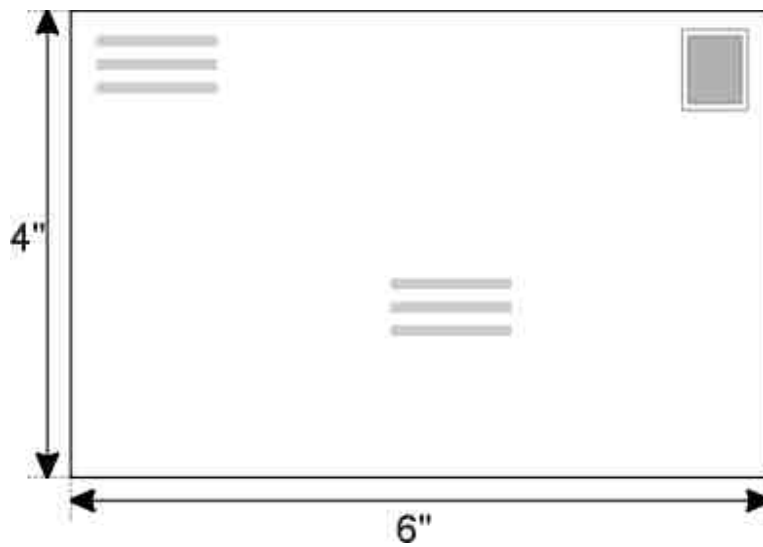
- Height is greater than 6-1/8 inches.
- Length is greater than 11-1/2 inches.
- Thickness is greater than inch.

First-Class letter-size mail pieces weighing 1 ounce or less and Standard letter-size mail pieces weighing 3.3 ounces or less are considered nonmachinable and subject to a nonmachinable surcharge if they have one or more of the following characteristics:

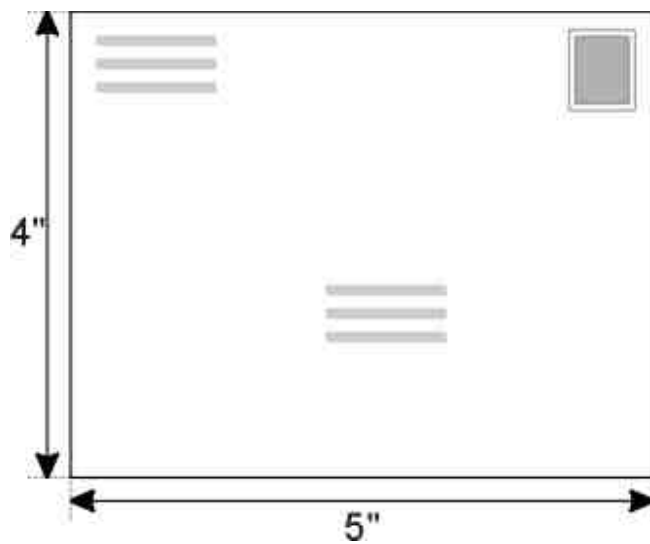
- An aspect ratio (length divided by height) of less than 1.3 or more than 2.5.
- Are polybagged, polywrapped, or enclosed in any plastic material.
- Have clasps, strings, buttons, or similar closure devices.
- Contain items such as pens, pencils, or loose keys or coins that cause the thickness of the mailpiece to be uneven.
- Are too rigid (not bending easily when subjected to a transport belt tension of 40 pounds around an 11-inch diameter turn).
- For pieces more than either 4-1/4 inches high or 6 inches long, when the thickness is less than .009 inch.
- A delivery address that is parallel to the shorter dimension of the mailpiece.
- Self-mailers with folded edges perpendicular to the address, unless the piece is folded and secured.

- Booklet-type mailpieces with the bound edge (spine) along the shorter dimension of the piece or at the top, regardless of the use of tabs, seals, or other fasteners.

For letter-size mailpieces, the length is the dimension parallel to the address.



Machinable Aspect Ratio: 1.5



Nonmachinable Aspect Ratio: 1.25

Mailpiece Materials and Construction

Paper Weight

The following recommendations for paper and card stock refer to the minimum basis weight of the materials. Basis weight is defined as the weight (in pounds) of a ream (500 sheets) cut to a standard size for that grade.

For example, envelopes for automation-rate mailings should be constructed of paper weighing at least 16 pounds (minimum basis weight). The specific grade of 16-pound paper recommended for envelopes is defined as 500 sheets measuring 17 inches by 22 inches (17 inches by 22 inches by 500 sheets).

Recycled paper and card stock are compatible with postal automation if the materials satisfy the recommendations and the guidelines in this book.

Envelopes

Envelopes (the preferred container) and other letter-size containers sealed on all four edges must be made of paper with a minimum basis weight of 16 pounds (measured weight of 500 17-by-22-inch sheets). For business reply mail envelopes, the minimum basis weight is 20 pounds.

Folded Self-Mailers

The required minimum basis weight of paper for folded self-mailers varies with the construction of the mailpieces as follows:

- For self-mailers formed from a single sheet folded at the bottom with the open, top edge sealed with one tab or glue spot, the minimum basis weight is 28 pounds (weight of 500 17-by-22-inch sheets) or 70 pounds (weight of 500 25-by-38-inch sheets).
- For self-mailers formed from two or more sheets that are sealed with one tab or glue spot, the minimum basis weight is 24 pounds (weight of 500 17-by-22-inch sheets) or 60 pounds (500 25-by-38-inch sheets).
- For any self-mailer that is sealed with two tabs or two glue spots, the open edge can be at the top or bottom. The minimum basis weight is 20 pounds (weight of 500 17-by-22-inch sheets).

The following shows the proper placement of tabs or glue spots on folded self-mailers. Tabs, wafer seals, tape, or glue may be used to seal folded self-mailers. Tabs and other seals placed at the top of folded self-mailers should be positioned so that they do not cover the return address, postage, or rate markings.

(not drawn to scale)



Specifications for Automation-Compatible Letter-Size Mailpieces

Double Postcard

Tabs 1 (middle)
 Folded Edge Top or Bottom
 Sheets Single
 Basis Weight 75 lb.



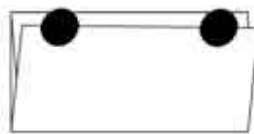
Folded Self-Mailer (Invitation Fold)

Tab Address Label
 Folds Top and Bottom
 Sheets Multiple or Single
 Basis Weight 20 lb.



Folded Self-Mailer

Tabs 2 (start ≤ 1 inch from edges)
 Folded Edge Top or Bottom
 Sheets Single
 Basis Weight 20 lb.



Folded Self-Mailer (Continuous Glue Strip)

Open Edge Top
 Folded Edge Bottom
 Sheets Single
 Basis Weight 20 lb.



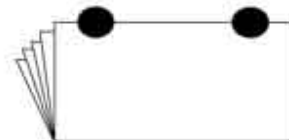
Folded Self-Mailer

Tabs 1 (middle)
 Folded Edge Bottom
 Sheets Multiple
 Basis Weight 24 lb.



Booklet

Tabs 2 (start ≤ 1 inch from edges)
 Spine Bottom
 Sheets Multiple with Cover
 Basis Weight 20 lb. (Cover)



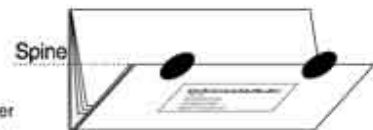
Folded Self-Mailer

Tabs 1 (middle)
 Folded Edge Bottom
 Sheets Single
 Basis Weight 28 lb.



Folded Booklet

Tabs 2 (start ≤ 1 inch from edges)
 Spine Top
 Folded Edge Bottom
 Sheets Multiple with Cover
 Basis Weight 20 lb. (Cover)



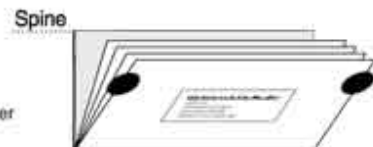
Folded Self-Mailer¹

Tabs 1 (middle)
 Folded Edge Right
 Sheets Single
 Basis Weight 75 lb.



Folded Booklet

Tabs 2 (start ≤ 1 inch from top edge)
 Spine Top
 Folded Edge Bottom
 Sheets Multiple with Cover
 Basis Weight 20 lb. (Cover)



¹Pieces 7 inches or longer must be sealed on the top and bottom; the middle tab is optional (C810.7).

Booklet

Tabs 2 (start ≤ 1 inch from top and bottom edges)
 Spine Right (open edge left)
 Sheets Multiple with Cover
 Basis Weight 24 lb. (Cover)



Tabs and other seals placed in the barcode clear zone on nonbarcoded pieces should be made of uncoated white or light-colored paper that satisfies the background reflectance specifications. These specifications ensure successful barcode printing and reading by an MLOCR. For optimal processing, folded self-mailers should be constructed with the fold at the bottom and the tab(s) or glue spot(s) at the top.

Booklets

The required minimum basis weight of paper for covers on booklet-type mailings is 20 pounds (weight of 500 17-by-22-inch sheets). Booklets must be constructed to meet these requirements:

- The bound edge or spine must be at the bottom edge of each booklet, parallel to the lines of the delivery address.
- The open edge of each booklet must be at the top and secured with at least two tabs. One tab must be placed within 1 inch of the left edge, and the other tab must be placed within 1 inch of the right edge. Instead of tabs, wafer seals or tape may be used. Tabs or closures may be affixed to the top edge or to the right and left edges within 1 inch of the top edge.

Cards

Thickness, stiffness, and tear strength are the most important compatibility characteristics for cards. The minimum thickness is 0.007 inch. The minimum required basis weight for card stock is 75 pounds or greater, with none less than 71.25 pounds (measured weight of 500 25-by-38-inch sheets).

The grain of cards should be oriented parallel to the long dimension of the card. Long-grain cards are less likely to jam postal automated equipment than are cards with the grain parallel to the short dimension of the card.

Cards at automation rates must be 0.009 inch thick if more than 4-1/4 inches high or 6 inches long, or both.

When preparing postcards with perforations, it is recommended that the perf-to-bridge ratio be 1:1. A typical perforation is from 0.1 inch to 0.2 inch. Vertical perforations in the center area of the card are not recommended.

Cards Claimed at First-Class Mail Card Rates

In order to be eligible for the First-Class Mail card rates, cards must be of uniform thickness and made of unfolded and uncreased paper or card stock of approximately the quality and weight of a Postal Service stamped card.

Cards (that is, each stamped card or postcard or each half of a double stamped card or postcard) claimed at a card rate must be:

- Rectangular.
- No less than 3¹/₂ inches high, 5 inches long, and 0.007 inch thick.
- No more than 4¹/₄ inches high, 6 inches long, and 0.016 inch thick.
- Cards prepared with a message area on the address side must meet specifications.

Cards exceeding the maximum dimensions for card can be sent at First-Class or Standard mail letter rates.

Double Postcards

Reply or double postcards must be secured with at least one tab, wafer seal, tape strip, or glue spot placed at the center of the open edge. The open edge may be at the top or bottom of the mailpiece.

Mailpiece Flexibility

In addition to size, shape, and material used to create your letter mailpieces, flexibility and rigidity are also important. The contents of your mail must be reasonably flexible to ensure proper transport through our automated system.

USPS processing equipment moves letter mail at a speed of up to 40,000 pieces an hour through a series of belts, rollers, and conveyor wheels. Each mailpiece must be able to maneuver successfully through this equipment.

At the same time, if your mail is too flimsy, it might catch in the metal joints of the processing equipment. Extremely flimsy and thin mailpieces also tend to stick together or adhere to other pieces easily, causing missorts and possible misdelivery of the mail.

Because pens, pencils, keys, large coins, and other rigid items can damage mail and mail processing equipment, they should never be included in letter mail, and they are prohibited in letter-size mail submitted at an automation rate.

Items such as credit cards and small coins firmly affixed to the contents of a mailpiece are usually acceptable if the mailpiece and its contents can bend easily around an 11-inch-diameter drum.

Magnets and other magnetized materials should be tested and approved for automation-based discounts by the Postal Service.

Refer any question about the dimensions, materials, construction, or contents of your mailpiece to your mailpiece design analyst, account representative, or postal business center before you produce the mailing.

Incompatible Materials and Sealing Methods

Coverings

Certain materials are incompatible with postal automation because they cannot be transported at high speeds through mail processing equipment or they do not allow quality printing of a barcode on the mailpiece for optimal scanning. These materials include polywrap, shrinkwrap, spun-bonded olefin, and other plastic-like coverings. Certain types of coated papers should also be avoided if the coating is so glossy that it can prevent a postal-applied barcode from drying within 1 second. Consult a mailpiece design analyst about nonpaper coverings before you produce your mailpieces.

Dark Fibers and Patterns

Paper containing dark fibers or background patterns is not recommended because it can cause interference during MLOCR and BCS processing. The dark patterns can be mistaken for part of the address or barcode information.

If you use such paper, make sure that the contrast ratio between the fibers (or pattern) and the background does not exceed 15 percent in the red and the green portions of the optical spectrum.

Halftone Screens

If the material on which the delivery address is to appear is printed in a halftone screen, the halftone must contain at least 200 lines per inch, or it must be printed with at least a 20 percent screen.

Paper Types

Envelope paper and paper material on other letter-size mailpieces—such as folded self-mailers—must have sufficient opacity (enough density) to prevent any printing on the inside of the mailpieces from showing through in the MLOCR read area or in the barcode clear zone.

Avoid using textured paper—paper with other than a smooth surface—if the texture adversely affects print quality (that is, causes broken characters or smudged spaces). Because fluorescent paper can confuse the postage detector on postal facer-canceler machines, it's not suitable paper for automation mailings.

Closures

Because closures can jam equipment and damage mail during processing, don't use clasps, staples, string, buttons, or similar protrusions for closing letter-size automation pieces. And make sure that the pieces' edges are not notched, scalloped, or curved.